STATE MATCH SUPPLEMENT

Tennessee Curriculum Standards

English/Language Arts, Mathematics, and Science
Grades 7–12

and

ACT®

EXPLORE, PLAN, and the ACT

May 2006

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Preface

This document is a supplement to the *State Match Tennessee Curriculum Standards English/Language Arts, Mathematics, and Science Grades 7–12 and ACT's EXPLORE, PLAN, and ACT (May 2006)*. This supplement identifies specific ACT College Readiness Standards that correspond to each Tennessee Curriculum Standard in a side-by-side format. The left side of each page presents the Tennessee Curriculum Standards (highlighted if measured by ACT's corresponding testing program). The right side of each page presents the specific ACT College Readiness Standard(s) that corresponds to each Tennessee Curriculum Standard.

Tennessee standards listed here are from the Tennessee Curriculum Standards as presented on the Tennessee Department of Education's website in April 2006.

SUPPLEMENT

TABLES 1A–1G:

LANGUAGE ARTS

TABLE 1A

Tennessee Grade 7 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
The student will develop the reading and listening skills necessary for word recognition, comprehension, interpretation, analysis, evaluation, and appreciation of print and non-print text.	
Learning Expectations	
1.01. Continue to develop oral language and listening skills.	
1.02. Develop an understanding of the concepts of print.	
1.03. Expand reading skills through phonemic awareness.	
1.04. Use decoding strategies to read unfamiliar words.	
1.05. Read to develop fluency, expression, accuracy, and confidence.	
1.06. Expand reading vocabulary.	
1.07. Employ pre-reading strategies to facilitate comprehension.	
1.08. Use active comprehension strategies to derive meaning while reading and to check for understanding after reading.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives

= Measured by EXPLORE English and Reading tests

TABLE 1A

Tennessee Grade 7 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
1.09. Refine study skills and develop methods of research to enhance learning.	
1.10. Develop skills to facilitate reading in the content areas.	
1.11. Read independently for a variety of purposes.	
1.12. Experience and explore the elements of various literary and media genres.	
1.13. Develop and sustain a motivation for reading.	
State Performance Indicators	
The student is able to:	
7.1.spi.1. derive information from the following text features: timelines, graphs, headings, and subheadings within context.	

TABLE 1A

Tennessee Grade 7 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
7.1.spi.2. determine the meaning of unknown words and/or multiple meaning words through the use of context clues.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
7.1.spi.3. replace unknown words in context with appropriate synonyms or antonyms.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
7.1.spi.4. make predictions about the outcome of a given passage.	**Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
7.1.spi.5. formulate clarifying questions for use before, during, or after reading.	
7.1.spi.6. identify the main idea in a reading selection.	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages
7.1.spi.7. distinguish between fact and opinion within context.	**Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
7.1.spi.8. decode unknown grade level words in context, using previously learned strategies, such as analysis of affixes, as aids in determining meaning.	

= Measured by EXPLORE English and Reading tests

TABLE 1A

Tennessee Grade 7 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
7.1.spi.9. recognize first person point of view.	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages
7.1.spi.10. recognize and use grade appropriate and/or content specific vocabulary within context.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
7.1.spi.11. identify plot elements in the proper place on a graphic organizer.	
7.1.spi.12. locate information using keywords and headings.	
7.1.spi.13. distinguish between poetry and prose and between biography and autobiography.	
7.1.spi.14. select the correct word or phrase to complete an analogy using synonyms, antonyms, categories, subcategories, whole/part, functions, verb forms, and rhymes.	
7.1.spi.15. identify commonly used foreign phrases (e.g., bon voyage, mi casa es su casa, bon jour, hasta la vista).	
7.1.spi.16. draw inferences from selected passages.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Summarize basic events and ideas in more challenging passages **Supporting Details:** Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages

= Measured by EXPLORE English and Reading tests

TABLE 1A

Tennessee Grade 7 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
7.1.spi.17. identify the author's purpose for writing and/or the reader's purpose for reading.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages
7.1.spi.18. analyze the cause and effect relationship in a given passage.	**Sequential, Comparative, and Cause-Effect Relationships:** Recognize clear cause-effect relationships described within a single sentence in a passage Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Identify clear cause-effect relationships in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages
7.1.spi.19. identify examples of propaganda techniques (i.e., bandwagon, loaded words, testimonials).	
7.1.spi.20. determine the common characteristics of short stories, novels, poetry, drama, and non-fiction.	
7.1.spi.21. recognize implied themes.	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages
7.1.spi.22. identify similes, metaphors, personification, and hyperbole within context.	**Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages

TABLE 1A

Tennessee Grade 7 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
	Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
7.1.spi.23. analyze the effect within context of the sound devices of onomatopoeia, alliteration, accent, rhyme, and repetition.	
7.1.spi.24. recognize and identify words within context that reveal particular time periods and cultures.	
7.1.spi.25. identify at least two ways by which an author reveals character traits in a given passage.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages
7.1.spi.26. identify symbolism, flashback, and foreshadowing within context.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages

TABLE 1A

Tennessee Grade 7 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading College Readiness Standards**
Content Standard: 1.0. Reading	
7.1.spi.27. rank a given set of resources according to reliability.	
7.1.spi.28. identify examples of sound devices (e.g., rhyme, alliteration, slant rhyme, repetition, and internal rhyme) in context.	

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
The student will develop the structural and creative skills of the writing process necessary to produce written language that can be read, presented to, and interpreted by various audiences.	
Learning Expectations	
2.01. Engage in prewriting using a variety of strategies.	
2.02. Write for a variety of audiences and purposes.	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
2.03. Compose drafts of written works.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward

= Measured by EXPLORE English and Reading tests

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
	Word Choice in Terms of Style, Tone, Clarity, and Economy: Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
	Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
2.04. Show evidence of and determine appropriate revisions within the written draft.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
	Organization, Unity, and Coherence: Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
	Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
2.05. Include editing before the completion of finished work.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
	Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object)

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
	Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
2.06. Evaluate own and others' writing.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
	Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
	Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
2.07. Experience numerous publishing opportunities.	
2.08. Write in the expository mode.	
2.09. Write frequently across all content areas.	
2.10. Write expressively in order to develop an effective writing style.	
2.11. Write in response to literature.	
2.12. Write in a variety of modes and genres.	
2.13. Locate and analyze information to prepare written works and presentations.	

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
State Performance Indicators	
The student is able to:	
7.2.spi.1. complete a graphic organizer (i.e., clustering, listing, mapping, and webbing) with information from notes for a writing selection.	
7.2.spi.2. select appropriate time-order or transitional words/phrases to enhance the flow of a writing sample.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)
7.2.spi.3. identify the purpose for writing (i.e., to inform, to describe, to explain, to persuade).	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal
7.2.spi.4. identify the audience (formal/informal) for which text is written.	
7.2.spi.5. select an appropriate concluding sentence for a well-developed paragraph.	**Organization, Unity, and Coherence:** Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
7.2.spi.6. supply a missing piece of information in an outline.	
7.2.spi.7. rearrange multi-paragraphed work in a logical and coherent order.	
7.2.spi.8. identify individual written selections as technical, narrative, persuasive and /or descriptive in mode.	
7.2.spi.9. select an appropriate thesis statement for a writing sample.	
7.2.spi.10. select the best way to combine sentences to provide syntactic variety within context.	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Determine the clearest and most logical conjunction to link clauses
7.2.spi.11. identify the sentence(s) irrelevant to a paragraph's theme or flow.	**Topic Development in Terms of Purpose and Focus:** Determine relevancy when presented with a variety of sentence-level details Delete material primarily because it disturbs the flow and development of the paragraph

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content: 2.0. Writing	
7.2.spi.12. choose the supporting sentence that best fits the context and flow of ideas in a paragraph.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
7.2.spi.13. select the most appropriate title for a passage.	
7.2.spi.14. identify levels of reliability among resources (e.g., eyewitness account, newspaper account, supermarket tabloid account, and Internet source).	
7.2.spi.15. select illustrations, explanations, anecdotes, descriptions, and/or facts to support key ideas.	

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
The student will use standard English conventions and proper spelling as appropriate to speaking and writing.	
Learning Expectations	
3.01. Demonstrate knowledge of standard English usage.	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of*
3.02. Demonstrate knowledge of standard English mechanics.	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object)

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
The student will use standard English conventions and proper spelling as appropriate to speaking and writing.	
	Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
3.03. Demonstrate knowledge of standard English spelling.	
3.04. Demonstrate knowledge of correct sentence structure.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
The student will use standard English conventions and proper spelling as appropriate to speaking and writing.	
State Performance Indicators	
The student is able to:	
7.3.spi.1. identify the correct use of commas (i.e., compound sentences, coordinating conjunctions, introductory words, appositives, and interrupters) within context.	**Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*)
7.3.spi.2. recognize usage errors occurring within context (e.g., double negatives, troublesome words: to, too, two; their, there, they're; lie, lay; sit, set).	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of*
7.3.spi.3. identify the correct use of colons (i.e., in business letters, preceding a list of items) within context.	**Conventions of Punctuation:** Recognize inappropriate uses of colons and semicolons
7.3.spi.4. choose the correct use of quotation marks and commas (i.e., in direct quotations, with explanatory material within the quote, proper use with end marks).	

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
The student will use standard English conventions and proper spelling as appropriate to speaking and writing.	
7.3.spi.5. identify the correct use of nouns (i.e., common/proper, singular/plural, possessives, direct/indirect objects, predicate) , pronouns (i.e., agreement, reflexive, interrogative, and demonstrative), verbs (i.e., action/linking, regular/irregular, agreement, perfect tenses, verb phrases), adjectives (i.e., common/proper, comparative and superlative forms, adjective clauses), adverbs (i.e., comparative and superlative forms), interjection and conjunctions (i.e., coordinating, correlative, and subordinating) within context.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Use apostrophes to indicate simple possessive nouns clauses

TABLE 1A

Tennessee Grade 7 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
The student will use standard English conventions and proper spelling as appropriate to speaking and writing.	
7.3.spi.6. identify within context a variety of appropriate sentence-combining techniques (i.e., comma + coordinating conjunction, use of semicolon, introductory phrases and/or clauses).	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems
7.3.spi.7. identify the correct use of prepositions and prepositional phrases within context.	**Sentence Structure and Formation:** Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems **Conventions of Usage:** Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*)
7.3.spi.8. select the most appropriate method to correct a run-on sentence (i.e., conjunctions, semicolons, and periods to join or separate elements) within context.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems
7.3.spi.9. identify correctly or incorrectly spelled words in context.	
7.3.spi.10. identify the correct use of appositives and appositive phrases and infinitives and infinitive phrases within context.	**Conventions of Punctuation:** Use commas to set off simple parenthetical phrases Use punctuation to set off complex parenthetical phrases
7.3.spi.11. select the appropriate use of underlining/italicizing with titles, specific words, numbers, and letters.	

TABLE 1B

Tennessee Grade 8 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
The student will develop the reading and listening skills necessary for word recognition, comprehension, interpretation, analysis, evaluation, and appreciation of print and non-print text.	
Learning Expectations	
1.01 Continue to develop oral language and listening skills.	
1.02 Develop an understanding of the concepts of print.	
1.03 Expand reading skills through phonemic awareness.	
1.04 Use decoding strategies to read unfamiliar words.	
1.05 Read to develop fluency, expression, accuracy, and confidence.	
1.06 Expand reading vocabulary.	
1.07 Employ pre-reading strategies to facilitate comprehension.	
1.08 Use active comprehension strategies to derive meaning while reading and to check for understanding after reading.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives

TABLE 1B

Tennessee Grade 8 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
1.09 Refine study skills and develop methods of research to enhance learning.	
1.10 Develop skills to facilitate reading in the content areas.	
1.11 Read independently for a variety of purposes.	
1.12 Experience and explore the elements of various literary and media genres.	
1.13 Develop and sustain a motivation for reading.	
State Performance Indicators	
The student is able to:	
8.1.spi.1. formulate appropriate questions during the reading of text.	

TABLE 1B

Tennessee Grade 8 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
8.1.spi.2. choose the correct meaning/usage of multi-meaning words by replacing the word in context with an appropriate synonym or antonym.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
8.1.spi.3. locate information using available text features (e.g., maps, charts, graphics, indexes, glossaries, tables of contents, and appendices).	
8.1.spi.4. identify on a graphic organizer the points at which various plot elements occur.	
8.1.spi.5. identify an appropriate title to reinforce the main idea of a passage or paragraph.	
8.1.spi.6. determine cause-effect relationships in context.	**Sequential, Comparative, and Cause-Effect Relationships:** Recognize clear cause-effect relationships described within a single sentence in a passage Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Identify clear cause-effect relationships in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages
8.1.spi.7. determine inferences from selected passages.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Summarize basic events and ideas in more challenging passages **Supporting Details:** Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives Order sequences of events in uncomplicated passages

TABLE 1B

Tennessee Grade 8 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
	Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
8.1.spi.8. recognize a reasonable prediction of future events of a passage.	**Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
8.1.spi.9. select information using keywords and headings.	
8.1.spi.10. recognize and use grade appropriate and/or content specific vocabulary.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages

TABLE 1B

Tennessee Grade 8 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
8.1.spi.11. determine an author's purpose for writing or a student's purpose for reading.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages
8.1.spi.12. identify an implied theme from a selection or related selections.	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages
8.1.spi.13. use text features (e.g., sidebars, footnotes, and endnotes) to determine meaning.	
8.1.spi.14. distinguish among different genres (e.g., poetry, drama, letters, ads, historical fiction, biographies, autobiographies, and essays) and their distinguishing characteristics.	
8.1.spi.15. identify examples within context of similes, metaphors, alliteration, onomatopoeia, personification, and hyperbole.	**Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
8.1.spi.16. choose a logical word or phrase to complete an analogy, using scrambled words and homophones in addition to previously learned analogies.	
8.1.spi.17. recognize and identify the techniques of propaganda (i.e., bandwagon, loaded words, and testimonials).	

TABLE 1B

Tennessee Grade 8 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
8.1.spi.18. recognize author's point of view (e.g., first person or third person, limited/ omniscient).	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages
8.1.spi.19. determine how a story changes if the point of view is changed.	
8.1.spi.20. recognize commonly used foreign phrases (e.g., bonjour, hasta la vista, bon voyage, mi casa es su casa, e pluribus unum, c'est la vie).	
8.1.spi.21. identify examples of sound devices within context (e.g. rhyme, alliteration, assonance, slant rhyme, repetition, internal rhyme).	
8.1.spi.22. recognize and identify words within context that reveal particular time periods and cultures.	
8.1.spi.23. determine the influence of culture and ethnicity on the themes and issues of literary texts.	
8.1.spi.24. identify how the author reveals character (e.g., physical characteristics, dialog, what others say about him, what he does).	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages
8.1.spi.25. recognize literary elements that shape meaning within context (e.g., symbolism, foreshadowing, flashback, irony, mood and tone).	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Identify relationships between main characters in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages

TABLE 1B

Tennessee Grade 8 English/Language Arts Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 1.0. Reading	
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
8.1.spi.26. identify instances of bias and stereotyping in print and non-print contexts.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages **Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
8.1.spi.27. recognize the effect of stressed and unstressed syllables to aid in identifying the meaning of multiple meaning words.	

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
The student will develop the structural and creative skills of the writing process necessary to produce written language that can be read, presented to, and interpreted by various audiences.	
Learning Expectations	
2.01 Engage in prewriting using a variety of strategies.	
2.02 Write for a variety of audiences and purposes.	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
2.03 Compose drafts of written works.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Word Choice in Terms of Style, Tone, Clarity, and Economy: Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
2.04 Show evidence of and determine appropriate revisions within the written draft.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Organization, Unity, and Coherence: Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
2.05 Include editing before the completion of finished work.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object)

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
2.06 Evaluate own and others' writing.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Word Choice in Terms of Style, Tone, Clarity, and Economy: Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
2.07 Experience numerous publishing opportunities.	
2.08 Write in the expository mode.	
2.09 Write frequently across all content areas.	
2.10 Write expressively in order to develop an effective writing style.	
2.11 Write in response to literature.	
2.12 Write in a variety of modes and genres.	
2.13 Locate and analyze information to prepare written works and presentations.	
State Performance Indicators	
The student is able to:	
8.2.spi.1. complete a graphic organizer (i.e., clustering, listing, mapping, webbing) with information from notes for a writing selection.	
8.2.spi.2. select appropriate time-order or transitional words/phrases to enhance the flow of a writing sample.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relation-ships in simple narrative essays (e.g., *then*, *this time*)

= Measured by EXPLORE English and Reading tests

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English College Readiness Standards**
Content Standard: 2.0. Writing	
	Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)
8.2.spi.3. identify the purpose for writing (i.e., to inform, to describe to explain, to persuade).	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal
8.2.spi.4. identify the targeted audience for a selected passage.	
8.2.spi.5. rearrange multi-paragraphed work in a logical and coherent order.	
8.2.spi.6. identify sentences irrelevant to a paragraph's theme or flow.	**Topic Development in Terms of Purpose and Focus:** Determine relevancy when presented with a variety of sentence-level details Delete material primarily because it disturbs the flow and development of the paragraph
***8.2.spi.7.** select, limit, and refine a topic.	**Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
***8.2.spi.8.** write well-organized and coherently developed paragraphs.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
***8.2.spi.9.** reorganize paragraphs into well-organized and coherently developed essays.	
***8.2.spi.10.** integrate all steps of the writing process: prewriting, drafting, revising, editing, and publishing.	
8.2.spi.11. identify levels of reliability among resources (e.g., eyewitness account, newspaper account, supermarket tabloid account, Internet source).	
8.2.spi.12. identify individual written selections as technical, narrative, persuasive, and /or descriptive in mode.	
8.2.spi.13. select an appropriate thesis statement for a writing sample.	
8.2.spi.14. select the most appropriate title for a selection.	
8.2.spi.15. select illustrations, explanations, anecdotes, descriptions, and/or facts to in a paragraph.	
8.2.spi.16. choose the supporting sentence that best fits the context and flow of ideas in a paragraph.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
***8.2.spi.17.** write well-developed, organized and coherent essays in response to expository prompts.	
***8.2.spi.18.** support key ideas with explanations, illustrations, anecdotes and descriptions, and facts.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
***8.2.spi.19.** revise and edit writings for the elements of language.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
	Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 2.0. Writing	
***8.2.spi.20.** choose vivid words, active voice verbs, figurative language, imagery, colorful modifiers, and sensory details to enhance writings.	
***8.2.spi.21.** compose clear and correctly punctuated complex sentences to enrich syntactic variety.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
8.2.spi.21. select vivid words to strengthen a description (adjective or adverb) within a writing sample or a passage.	

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
The student will use standard English conventions and proper spelling as appropriate to speaking and writing.	
Learning Expectations	
3.01 Demonstrate knowledge of standard English usage.	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of*
3.02 Demonstrate knowledge of standard English mechanics.	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object)

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
	Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
3.03 Demonstrate knowledge of standard English spelling.	
3.04 Demonstrate knowledge of correct sentence structure.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence
State Performance Indicators	
The student is able to:	
8.3.spi.1. identify the correct use of commas (i.e., compound sentences, coordinating conjunctions, introductory words, appositives, and interrupters) within context.	**Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause)

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
	Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*)
8.3.spi.2. recognize usage errors (e.g., subject/verb agreement, pronoun case, double negatives, comparative/superlative forms, troublesome words: where, were; which, that; who, who, whom) occurring within context.	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of*
8.3.spi.3. identify the correct placement of prepositions and prepositional phrases within context.	**Sentence Structure and Formation:** Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems
8.3.spi.4. select the most appropriate method to correct a run-on sentence (i.e., conjunctions, semicolons, and periods to join or separate elements) within context.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
8.3.spi.5. identify the correct use of nouns (i.e., common/proper, singular/plural, possessives, direct/indirect objects, predicate noun), pronouns (i.e., reflexive, interrogative, and demonstrative), verbs (i.e., action/linking, regular/irregular, agreement, perfect tenses, and verb phrases), adjectives (i.e., common/proper, comparative and superlative forms, adjective clauses), adverbs (i.e., comparative and superlative forms), interjections and conjunctions (i.e., coordinating, correlative, and subordinating) within context.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Use apostrophes to indicate simple possessive nouns
8.3.spi.6. identify within context a variety of appropriate sentence-combining techniques (i.e., comma + coordinating conjunction, use of semicolon, introductory phrases or clauses).	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences

TABLE 1B

Tennessee Grade 8 English Language Arts Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 3.0. Elements of Language	
	Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems
8.3.spi.7. identify the correct use of appositives and appositive phrases and infinitives and infinitive phrases within context.	**Conventions of Punctuation:** Use commas to set off simple parenthetical phrases Use punctuation to set off complex parenthetical phrases
8.3.spi.8. select the appropriate use of underlining/italicizing with titles, specific words, numbers, letters, and figures.	
8.3.spi.9. identify correctly or incorrectly spelled words in context.	
8.3.spi.10. recognize the appropriate use of gerund and participial phrases.	**Sentence Structure and Formation:** Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems
8.3.spi.11. select the correct pronoun/antecedent agreement for personal pronouns within context.	**Conventions of Usage:** Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
The student will develop the structural and creative skills necessary to produce written language that can be read and interpreted by various audiences.	
Learning Expectations	
• Write to acquire knowledge, clarify thinking, synthesize information, improve study skills, gain confidence, and enhance lifelong communication.	
• Write frequently for a variety of purposes such as narration, description, persuasion, exposition, and personal, creative expression.	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
• Identify and write for a variety of audiences.	
• Recognize that language has several levels of usage determined by audience, purpose, and occasion.	
• Approach writing tasks systematically and use elements of the writing process as appropriate.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
• Practice a variety of prewriting activities to generate, focus and organize ideas.	
• Use a variety of appropriate organizational strategies to develop writing on various topics.	
• Develop organized writing containing focused, well-developed ideas.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
• Demonstrate effective writing style by the use of vivid words, a variety of sentence structures, and appropriate transitions.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
• Evaluate and revise writing to focus on purpose, organization, development, transitions, unity, and audience awareness.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
• Recognize and demonstrate knowledge of standard English: usage, mechanics, spelling, and sentence structure.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
• Identify and begin to use a variety of resources to revise and edit writing.	
• Research information from various sources to prepare presentations or reports which use summarizing, paraphrasing, direct quotations, citation of sources, and bibliographic sources.	
• Continue to respond actively and imaginatively to literature.	
• Demonstrate an understanding of and respect for multicultural and ethnic diversity in language.	

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
State Performance Indicators	
The student is able to:	
1.1.A. Use editing skills to correct comparative and superlative forms of adjectives or adverbs.	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts
1.1.B. Use editing skills to correct singular and plural possessive pronouns.	**Conventions of Usage:** Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead*
1.1.C. Identify the targeted audience for a selected passage.	
1.1.D. Select the most appropriate title for a passage.	
1.1.E. Select from the following groups of words the correct one for the sense of the sentence: you're and your; it's and its; their, they're, and there.	**Conventions of Usage:** Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead*
1.1.F. Select the topic sentence in a paragraph.	
1.1.G. Identify (from a sample) the stage of the writing process represented (using graphics showing the stages: prewriting, first draft, revision, editing, publishing).	
1.1.H. Correct a sentence fragment by using sentence combining techniques within a writing sample.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems
1.1.I. Identify the use of commas with appositives and introductory words, phrases, or clauses.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses **Conventions of Punctuation:** Provide appropriate punctuation in straightforward situations (e.g., items in a series) Use commas to set off simple parenthetical phrases Use punctuation to set off complex parenthetical phrases

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.2.A. Recognize correct subject/verb agreement with confusing intervening elements within a writing sample.	**Conventions of Usage:** Ensure that a verb agrees with its subject when there is some text between the two
1.2.B. Correct run-on sentences by using a comma and coordinating conjunction, subordinate conjunction, or semicolon within a writing sample.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems **Conventions of Punctuation:** Recognize inappropriate uses of colons and semicolons
1.2.C. Determine the writer's purpose in a non-fiction writing sample (i.e., narration, description, persuasion, exposition, and personal, creative expression).	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal
1.2.D. Evaluate the relevance of supporting sentences by deleting an irrelevant sentence in a passage.	**Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Determine relevancy when presented with a variety of sentence-level details Delete material primarily because it disturbs the flow and development of the paragraph
1.2.E. Distinguish the strongest or weakest point of an argument within a passage.	
1.2.F. Select the appropriate transitional word to connect sentences within a paragraph.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)
1.2.G. Select a vivid word to strengthen a description (verb, adjective, or adverb) within a writing sample or passage.	

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE English** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.2.H. Determine the most effective order of sentences within a paragraph.	**Organization, Unity, and Coherence:** Select the most logical place to add a sentence in a paragraph Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic
1.2.I. Select correct pronoun case usage in a sentence (e.g., compound elements such as "between you and me").	
1.2.K. Select from the following pairs the correct word for the sense of the sentence: stationary and stationery, complement and compliment, principle and principal, accept and except, capitol and capital, affect and effect, where and were, to and too.	**Conventions of Usage:** Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead*
1.2.L. Recognize the correct placement of end marks with quotation marks.	**Conventions of Punctuation:** Provide appropriate punctuation in straightforward situations (e.g., items in a series)
1.2.M. Recognize correct usage of quotation marks in direct and indirect quotations.	
1.3.A. Rearrange the order of supporting paragraphs within a writing sample given a specified organizational pattern (e.g., comparison/contrast, chronological).	
1.3.B. Select correct pronoun/antecedent agreement using collective nouns or indefinite pronouns.	

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
The student will develop the reading skills necessary for word recognition, comprehension, interpretation, analysis, evaluation, and appreciation of the written text.	
Learning Expectations	
• Develop an understanding of and respect for multicultural, gender, and ethnic diversity in language use, patterns, and dialects.	
• Discern reading strategies appropriate to text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Extend reading vocabulary.	
• Use comprehension strategies to enhance understanding, to make predictions, and to respond to literature.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Improve comprehension by interpreting, analyzing, synthesizing, and evaluating written text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Use oral reading in individual and group presentations.	
• Read independently for a variety of purposes.	
• Use cognitive strategies to evaluate text critically.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Develop skills in making inferences and recognizing unstated assumptions.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Summarize basic events and ideas in more challenging passages **Supporting Details:** Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives Order sequences of events in uncomplicated passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Discern the purposes, main ideas, biases, points of view, and persuasive devices found in various texts.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Interpret ideas, recognize logical relationships, and make judgments based on sufficient evidence.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Meanings of Words: Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Select resource material in order to apply it effectively.	
• Read, interpret, and respond in a variety of ways to various genres.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Identify and interpret literary elements and figurative language.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Identify relationships between main characters in uncomplicated literary narratives

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Interact with text to form a personal interpretation.	
State Performance Indicators	
The student is able to:	
2.1.A. Identify simile, metaphor, onomatopoeia, alliteration, or personification in poetry or prose.	**Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.1.B. Distinguish fact from opinion in a passage or writing sample.	**Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.2.A. Draw inferences from selected passages.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Summarize basic events and ideas in more challenging passages **Supporting Details:** Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.2.B. Determine the meaning of a word in context.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
2.2.C. Pinpoint cause and effect relationship using a graphic organizer.	
2.2.D. Differentiate among verbal, situational, and dramatic irony.	
2.2.E. Identify an author's point of view (1st person or 3rd person limited, 3rd person omniscient).	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages
2.2.F. Discern an implied main idea from a passage.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Summarize basic events and ideas in more challenging passages
2.2.G. Identify how the author reveals character (what the author tells us, what other characters say about him/her, what the character does, what the character says, what the character thinks).	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
2.2.H. Select the correct paraphrase of a given passage.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
2.3.A. Determine the significance/meaning of a symbol in poetry or prose.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages
2.3.B. Identify an allusion in poetry or prose.	
2.3.C. Differentiate between mood and tone in poetry and prose.	
2.3.D. Select a logical word or phrase to complete an analogy.	

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE** **College Readiness Standards**
Content Standard: 3.0. Viewing and Representing	
The student will use, read, and view media/technology and analyze content and concepts accurately.	
Learning Expectations	
• Access and demonstrate multiple technological reference sources.	
• Develop media applications for a variety of audiences and purposes.	
• Use media to view, to read, to write, to communicate, and to create.	
• Analyze the impact of media on daily life.	
• Research, organize, interpret, and present information from print and non-print media.	
• Utilize multimedia to create, to display, and to explain information.	
• Explore the advantages and limitations of the computer as a communication tool.	
• Recognize the differences between using print and non-print media as a means of communication.	
• Explain creative strategies used in the production of print and non-print media.	
State Performance Indicators	
The student is able to:	
3.1.A. Draw an inference from a non-print medium.	
3.2.A. Select the type of conflict represented in a non-print medium.	
3.2.B. Determine which statement presents an opposing view from those stated on a web page.	
3.2.C. Select the appropriate persuasive device in a given ad (e.g., testimonial, bandwagon, loaded words, misuse of statistics).	
3.3.A. Evaluate the validity of web pages as sources of information.	

TABLE 1C

Tennessee English I Standards, Expectations, and State Indicators	**EXPLORE** **College Readiness Standards**
Content Standard: 4.0. Speaking and Listening	
The student will express ideas clearly and effectively in a variety of oral contexts and apply active listening skills in the analysis and evaluation of spoken ideas.	
Learning Expectations	
• Demonstrate skills in analysis, interpretation, and evaluation of literary works through spoken language.	
• Demonstrate confidence and poise in various speaking situations.	
• Follow and give oral directions.	
• Utilize appropriate verbal and non-verbal feedback in a variety of situations.	
• Demonstrate effective listening skills through note-taking.	
• Demonstrate critical listening skills essential for comprehension and evaluation.	
• Present oral summaries and/or analysis of material read or viewed	
• Engage in problem solving through group discussions.	
• Present and support ideas/opinions in group discussions.	
• Develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.	
• Demonstrate appropriate language structure, tone and voice control in oral communication.	
State Performance Indicators	
The student is able to:	
4.1.A. Organize a series of note cards in the most effective order for an oral presentation.	
4.2.A. Determine the appropriate preparation (e.g., length and timing, rate of speech, visual aids, diction) for an oral presentation to a specified audience or a special interest group.	
4.3.A. Determine the most effective methods of engaging an audience during an oral presentation.	

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
The student will develop the structural and creative skills necessary to produce written language that can be read and interpreted by various audiences.	
Learning Expectations	
• Write to acquire knowledge, clarify thinking, synthesize information, improve study skills, gain confidence, and enhance lifelong communication.	
• Write frequently for a variety of purposes such as narration, description, persuasion, exposition, and personal, creative expression.	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation
• Identify and write for a variety of audiences.	
• Recognize that language has several levels of usage determined by audience, purpose, and occasion.	
• Approach writing tasks systematically and use elements of the writing process as appropriate.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*)

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
• Practice a variety of prewriting activities to generate, focus and organize ideas.	
• Use a variety of appropriate organizational strategies to develop writing on various topics.	

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
• Develop organized writing containing focused, well-developed ideas.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
• Demonstrate effective writing style by the use of vivid words, a variety of sentence structures, and appropriate transitions.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
• Evaluate and revise writing to focus on purpose, organization, development, transitions, unity, and audience awareness.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
• Recognize and demonstrate knowledge of standard English: usage, mechanics, spelling, and sentence structure.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
• Identify and begin to use a variety of resources to revise and edit writing.	
• Research information from various sources to prepare presentations or reports which use summarizing, paraphrasing, direct quotations, citation of sources, and bibliographic sources.	
• Continue to respond actively and imaginatively to literature.	
• Demonstrate an understanding of and respect for multicultural and ethnic diversity in language.	
State Performance Indicators	
The student is able to:	
1.1.A. Use editing skills to correct comparative and superlative forms of adjectives or adverbs.	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts
1.1.B. Use editing skills to correct singular and plural possessive pronouns.	**Conventions of Usage:** Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom*
1.1.C. Identify the targeted audience for a selected passage.	
1.1.D. Select the most appropriate title for a passage.	
1.1.E. Select from the following groups of words the correct one for the sense of the sentence: you're and your; it's and its; their, they're, and there.	**Conventions of Usage:** Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom*

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.1.F. Select the topic sentence in a paragraph.	
1.1.G. Identify (from a sample) the stage of the writing process represented (using graphics showing the stages: prewriting, first draft, revision, editing, publishing).	
1.1.H. Correct a sentence fragment by using sentence combining techniques within a writing sample.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs
1.1.I. Identify the use of commas with appositives and introductory words, phrases, or clauses.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses **Conventions of Punctuation:** Provide appropriate punctuation in straightforward situations (e.g., items in a series) Use commas to set off simple parenthetical phrases Use punctuation to set off complex parenthetical phrases Use commas to set off a nonessential/nonrestrictive appositive or clause
1.2.A. Recognize correct subject/verb agreement with confusing intervening elements within a writing sample.	**Conventions of Usage:** Ensure that a verb agrees with its subject when there is some text between the two Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun)
1.2.B. Correct run-on sentences by using a comma and coordinating conjunction, subordinate conjunction, or semicolon within a writing sample.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs **Conventions of Punctuation:** Recognize inappropriate uses of colons and semicolons
1.2.C. Determine the writer's purpose in a non-fiction writing sample (i.e., narration, description, persuasion, exposition, and personal, creative expression).	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material
1.2.D. Evaluate the relevance of supporting sentences by deleting an irrelevant sentence in a passage.	**Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Determine relevancy when presented with a variety of sentence-level details Delete material primarily because it disturbs the flow and development of the paragraph Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material
1.2.E. Distinguish the strongest or weakest point of an argument within a passage.	
1.2.F. Select the appropriate transitional word to connect sentences within a paragraph.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)
1.2.G. Select a vivid word to strengthen a description (verb, adjective, or adverb) within a writing sample or passage.	**Topic Development in Terms of Purpose and Focus:** Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material
1.2.H. Determine the most effective order of sentences within a paragraph.	**Organization, Unity, and Coherence:** Select the most logical place to add a sentence in a paragraph Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.2.I. Select correct pronoun case usage in a sentence (e.g., compound elements such as "between you and me").	**Conventions of Usage:** Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom*
1.2.K. Select from the following pairs the correct word for the sense of the sentence: stationary and stationery, complement and compliment, principle and principal, accept and except, capitol and capital, affect and effect, where and were, to and too.	**Conventions of Usage:** Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead*
1.2.L. Recognize the correct placement of end marks with quotation marks.	**Conventions of Punctuation:** Provide appropriate punctuation in straightforward situations (e.g., items in a series)
1.2.M. Recognize correct usage of quotation marks in direct and indirect quotations.	
1.3.A. Rearrange the order of supporting paragraphs within a writing sample given a specified organizational pattern (e.g., comparison/contrast, chronological).	
1.3.B. Select correct pronoun/antecedent agreement using collective nouns or indefinite pronouns.	

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
The student will develop the reading skills necessary for word recognition, comprehension, interpretation, analysis, evaluation, and appreciation of the written text.	
Learning Expectations	
• Develop an understanding of and respect for multicultural, gender, and ethnic diversity in language use, patterns, and dialects.	
• Discern reading strategies appropriate to text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Extend reading vocabulary.	
• Use comprehension strategies to enhance understanding, to make predictions, and to respond to literature.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Improve comprehension by interpreting, analyzing, synthesizing, and evaluating written text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Use oral reading in individual and group presentations.	
• Read independently for a variety of purposes.	
• Use cognitive strategies to evaluate text critically.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives

= Measured by PLAN English and Reading tests

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Develop skills in making inferences and recognizing unstated assumptions.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Summarize basic events and ideas in more challenging passages **Supporting Details:** Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives

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Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Discern the purposes, main ideas, biases, points of view, and persuasive devices found in various texts.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages

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Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Interpret ideas, recognize logical relationships, and make judgments based on sufficient evidence.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages

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Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Meanings of Words: Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Select resource material in order to apply it effectively.	
• Read, interpret, and respond in a variety of ways to various genres.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages

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Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Identify and interpret literary elements and figurative language.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Identify relationships between main characters in uncomplicated literary narratives

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Interact with text to form a personal interpretation.	
State Performance Indicators	
The student is able to:	
2.1.A. Identify simile, metaphor, onomatopoeia, alliteration, or personification in poetry or prose.	**Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.1.B. Distinguish fact from opinion in a passage or writing sample.	**Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.2.A. Draw inferences from selected passages.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Summarize basic events and ideas in more challenging passages **Supporting Details:** Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.2.B. Determine the meaning of a word in context.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
2.2.C. Pinpoint cause and effect relationship using a graphic organizer.	
2.2.D. Differentiate among verbal, situational, and dramatic irony.	
2.2.E. Identify an author's point of view (1st person or 3rd person limited, 3rd person omniscient).	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages
2.2.F. Discern an implied main idea from a passage.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Summarize basic events and ideas in more challenging passages
2.2.G. Identify how the author reveals character (what the author tells us, what other characters say about him/her, what the character does, what the character says, what the character thinks).	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0 Reading	
2.2.H. Select the correct paraphrase of a given passage.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
2.3.A. Determine the significance/meaning of a symbol in poetry or prose.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages
2.3.B. Identify an allusion in poetry or prose.	
2.3.C. Differentiate between mood and tone in poetry and prose.	
2.3.D. Select a logical word or phrase to complete an analogy.	

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN** **College Readiness Standards**
Content Standard: 3.0. Viewing and Representing	
The student will use, read, and view media/technology and analyze content and concepts accurately.	
Learning Expectations	
• Access and demonstrate multiple technological reference sources.	
• Develop media applications for a variety of audiences and purposes.	
• Use media to view, to read, to write, to communicate, and to create.	
• Analyze the impact of media on daily life.	
• Research, organize, interpret, and present information from print and non-print media.	
• Utilize multimedia to create, to display, and to explain information.	
• Explore the advantages and limitations of the computer as a communication tool.	
• Recognize the differences between using print and non-print media as a means of communication.	
• Explain creative strategies used in the production of print and non-print media.	
State Performance Indicators	
The student is able to:	
3.1.A. Draw an inference from a non-print medium.	
3.2.A. Select the type of conflict represented in a non-print medium.	
3.2.B. Determine which statement presents an opposing view from those stated on a web page.	
3.2.C. Select the appropriate persuasive device in a given ad (e.g., testimonial, bandwagon, loaded words, misuse of statistics).	
3.3.A. Evaluate the validity of web pages as sources of information.	

TABLE 1D

Tennessee English I Standards, Expectations, and State Indicators	**PLAN** **College Readiness Standards**
Content Standard: 4.0. Speaking and Listening	
The student will express ideas clearly and effectively in a variety of oral contexts and apply active listening skills in the analysis and evaluation of spoken ideas.	
Learning Expectations	
• Demonstrate skills in analysis, interpretation, and evaluation of literary works through spoken language.	
• Demonstrate confidence and poise in various speaking situations.	
• Follow and give oral directions.	
• Utilize appropriate verbal and non-verbal feedback in a variety of situations.	
• Demonstrate effective listening skills through note-taking.	
• Demonstrate critical listening skills essential for comprehension and evaluation.	
• Present oral summaries and/or analysis of material read or viewed	
• Engage in problem solving through group discussions.	
• Present and support ideas/opinions in group discussions.	
• Develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.	
• Demonstrate appropriate language structure, tone and voice control in oral communication.	
State Performance Indicators	
The student is able to:	
4.1.A. Organize a series of note cards in the most effective order for an oral presentation.	
4.2.A. Determine the appropriate preparation (e.g., length and timing, rate of speech, visual aids, diction) for an oral presentation to a specified audience or a special interest group.	
4.3.A. Determine the most effective methods of engaging an audience during an oral presentation.	

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
The student will develop the structural and creative skills necessary to produce written language that can be read and interpreted by various audiences.	
Learning Expectations	
• Write to acquire knowledge, clarify thinking, synthesize information, improve study skills, gain confidence, and promote lifelong communication.	
• Write frequently for a variety of purposes including narration, description, persuasion, exposition, and personal, creative expression.	**Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation
• Identify and write for a variety of audiences.	
• Recognize that language has several levels of usage determined by audience, purpose and occasion.	
• Approach writing tasks systematically and use elements of the writing process as appropriate.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Organization, Unity, and Coherence: Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
• Practice a variety of prewriting activities to generate, focus and organize ideas.	
• Use a variety of appropriate organizational strategies to develop writing on various topics.	
• Develop organized pieces of writing containing focused, well-developed ideas.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
• Demonstrate effective writing style by the use of vivid words, a variety of sentence structures, and appropriate transitions.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
• Evaluate and revise writing to focus on purpose, organization, development, transitions, unity, and audience awareness.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Organization, Unity, and Coherence: Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
• Recognize and demonstrate appropriate use of standard English: usage, mechanics and standard spelling, and sentence structure.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
• Identify and use a variety of resources to revise and edit writing.	
• Research information to prepare presentations or reports which use summarizing, paraphrasing, direct quotations, citation of sources, and bibliographic entries.	
• Continue to respond actively and imaginatively to literature.	

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
• Demonstrate an understanding of and respect for multicultural and ethnic diversity in language.	
State Performance Indicators	
The student is able to:	
1.1.A. Correct run-on sentences by using a comma and coordinating conjunction, a subordinate conjunction, or a semi-colon within a writing sample.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs **Conventions of Punctuation:** Recognize inappropriate uses of colons and semicolons
1.1.B. Select the sentence from a non-fiction writing sample that relates the writer's purpose (i.e., narration, description, persuasion, exposition, and personal, creative expression).	
1.1.C. Evaluate the relevance of supporting sentences by deleting an irrelevant sentence in a passage.	**Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Determine relevancy when presented with a variety of sentence-level details Delete material primarily because it disturbs the flow and development of the paragraph Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material
1.1.D. Select the sentence that correctly uses the comparative and/or superlative forms of adjective and adverbs.	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.1.E. Select from the following groups of words the correct word for the sense of the sentence: you're and your; it's and its; their, they're and there.	**Conventions of Usage:** Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom*
1.1.F. Select from the following groups of words the correct word for the sense of the sentence: stationary and stationery, complement and compliment, principle and principal, accept and except, capitol and capital, affect and effect, where and were, to and too.	**Conventions of Usage:** Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead*
1.1.G. Select a vivid word (adjective or adverb) to strengthen a description or a vivid verb to strengthen a sentence within a writing sample or passage.	**Topic Development in Terms of Purpose and Focus:** Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material
1.1.H. Use editing skills to correct singular and plural possessive nouns.	**Conventions of Punctuation:** Use apostrophes to indicate simple possessive nouns
1.1.I. Select the appropriate transitional word to connect sentences within a paragraph.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)
1.2.A. Determine the most effective placement of information using a prewriting graphic organizer.	
1.2.B. Identify the correct use of subordinate conjunctions to join clauses in order to avoid sentence fragments.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.2.C. Recognize correct subject/verb agreement with confusing intervening elements within a writing sample or passage.	**Conventions of Usage:** Ensure that a verb agrees with its subject when there is some text between the two Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun)
1.2.D. Select an additional sentence to add to an argument within a persuasive writing sample or passage.	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation
1.2.E. Identify correct pronoun/antecedent agreement using collective nouns or indefinite pronouns.	
1.2.F. Determine the most effective order of sentences within a paragraph.	**Organization, Unity, and Coherence:** Select the most logical place to add a sentence in a paragraph Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic
1.2.G. Select the correct pronoun case usage in a sentence (e.g., compound elements such as “between you and me” or following “than” or “as”).	**Conventions of Usage:** Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom*
1.2.H. Recognize a shift in either verb tense or point of view within a writing sample.	**Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Determine relevancy when presented with a variety of sentence-level details Delete material primarily because it disturbs the flow and development of the paragraph Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material **Sentence Structure and Formation:** Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN English** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.2.I. Recognize the correct placement of end marks and other marks of punctuation with quotation marks used in dialogue.	
1.2.J. Select the thesis statement in a writing sample or passage.	
1.2.K. Rearrange the order of supporting paragraphs within a writing sample given a specified organizational pattern (e.g., comparison/contrast, chronological).	
1.2.L. Recognize the correct use of commas to set off nonessential elements in a sentence.	**Conventions of Punctuation:** Use commas to set off simple parenthetical phrases Use punctuation to set off complex parenthetical phrases Use commas to set off a nonessential/nonrestrictive appositive or clause
1.2.M. Select the transitional device that appropriately connects paragraphs within a writing sample.	**Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
1.3.A. Select a rebuttal statement that best refutes the writer's viewpoint.	
1.3.B. Identify a statement that reveals the writer's biases, assumptions, or values within a writing sample.	
1.3.C. Revise or identify sentences using effective parallelism within a writing sample.	**Sentence Structure and Formation:** Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
The student will develop the reading skills necessary for word recognition, comprehension, interpretation, analysis, evaluation, and appreciation of the written text.	
Learning Expectations	
• Develop an understanding of and respect for multicultural, gender, and ethnic diversity in language use, patterns, and dialects.	
• Discern reading strategies appropriate to text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Extend reading vocabulary.	
• Use comprehension strategies to enhance understanding, to make predictions, and to respond to literature.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Improve comprehension by interpreting, analyzing, synthesizing, and evaluating written text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Use oral reading in individual and group presentations.	
• Read independently for a variety of purposes.	
• Use cognitive strategies to evaluate text critically.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Develop skills in making inferences and recognizing unstated assumptions.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Summarize basic events and ideas in more challenging passages **Supporting Details:** Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives

= Measured by PLAN English and Reading tests

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Discern the purposes, main ideas, biases, points of view, and persuasive devices found in various texts.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Interpret ideas, recognize logical relationships, and make judgments based on sufficient evidence.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Meanings of Words: Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Select, evaluate, and adapt resource material in order to apply it effectively.	
• Read, interpret, and respond in a variety of ways to various genres.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Identify and interpret literary elements and figurative language.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Identify relationships between main characters in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative languageUse context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Interact with text to form a personal interpretation.	
State Performance Indicators	
The student is able to:	
2.1.A. Discern an implied main idea from a passage.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Summarize basic events and ideas in more challenging passages
2.1.B. Distinguish fact from opinion within a passage or writing sample.	**Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.1.C. Identify an author's point of view (1st person or 3rd person limited, 3rd person omniscient).	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages
2.1.D. Identify simile, metaphor, onomatopoeia, alliteration, or personification in poetry or prose.	**Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passagesUnderstand relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.1.E. Identify how the author reveals character (what the author tells us, what other characters say about him/her, what the character does, what the character says, what the character thinks).	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages
2.2.A. Draw inference(s) from a selected passage.	**Main Ideas and Author's Approach:** Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Summarize basic events and ideas in more challenging passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Supporting Details: Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Order simple sequences of events in uncomplicated literary narratives Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.2.B. Determine the meaning of a word in context.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
2.2.C. Differentiate among verbal, situational, and dramatic irony.	

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
2.2.D. Pinpoint a cause-effect relationship using a graphic organizer.	
2.2.E. Discover the common theme in a series of passages.	
2.2.F. Select a logical word or phrase to complete an analogy.	
2.2.G. Select the correct paraphrase of a given passage.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
2.3.A. Identify an allusion in poetry or prose.	
2.3.B. Differentiate between mood and tone in poetry or prose.	
2.3.C. Determine the significance/meaning of a symbol in poetry or prose.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN** **College Readiness Standards**
Content Standard: 3.0. Viewing and Representing	
The student will use, read, and view media/technology and analyze content and concepts accurately.	
Learning Expectations	
• Access and demonstrate multiple technological reference sources.	
• Develop media applications for a variety of audiences and purposes.	
• Use media to view, to read, to write, to communicate, and to create.	
• Analyze the impact of media on daily life.	
• Research, organize, interpret, and present information from print and non-print media.	
• Utilize multimedia to create, to display, and to explain information.	
• Explore the advantages and limitations of the computer as a communication tool.	
• Examine the differences between using print and non-print media as a means of communication.	
• Explain creative strategies used in the production of print and non-print media.	
State Performance Indicators	
The student is able to:	
3.1.A. Select the type of conflict in a non-print medium.	
3.1.B. Select the appropriate persuasive device in a given ad (e.g., testimonial, bandwagon, loaded words, misuse of statistics).	
3.2.A. Infer either the mood or the tone represented in a non-print medium.	
3.3.A. Evaluate the validity of a variety of media sources (e.g., personal journal, interview, authorized biography, supermarket tabloids, magazines).	

TABLE 1E

Tennessee English II Standards, Expectations, and State Indicators	**PLAN** **College Readiness Standards**
Content Standard: 4.0. Speaking and Listening	
The student will express ideas clearly and effectively in a variety of oral contexts and apply active listening skills in the analysis and evaluation of spoken ideas.	
Learning Expectations	
• Demonstrate skills in analysis, interpretation, and evaluation of literary works through spoken language.	
• Demonstrate confidence and poise in various speaking situations.	
• Demonstrate effective listening skills through note-taking.	
• Demonstrate critical listening skills essential for comprehension and evaluation.	
• Utilize appropriate volume, pitch, rate, diction, inflection, gestures, and body language to facilitate communication incorporating appropriate language structure.	
• Analyze audience and determine purpose in preparing oral presentations.	
• Define and solve problems rationally and creatively through speaking, listening, and viewing.	
• Utilize appropriate verbal and non-verbal feedback in a variety of situations.	
State Performance Indicators	
The student is able to:	
4.1.A. Determine the appropriate preparation (e.g., length and timing, rate of speech, visual aids, diction) for an oral presentation to a specified audience or special interest group.	
4.2.A. Determine methods of engaging an audience during an oral presentation.	
4.3.A. Evaluate delivery techniques appropriate to a specified audience (emphasis, diction, body language, tone of voice).	

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
The student will develop the structural and creative skills necessary to produce written language that can be read and interpreted by various audiences.	
Learning Expectations	
1.01 Write to process knowledge, to clarify thinking, to synthesize and evaluate information, to improve study skills, to gain confidence, and to promote lifelong communication.	
1.02 Write frequently in various modes of discourse.	
1.03 Write for personal and imaginative expression.	
1.04 Use a variety of strategies for business purposes.	
1.05 Identify and write for a variety of audiences.	
1.06 Recognize that language has several levels of diction determined by audience, purpose, and occasion.	**English** College Readiness Standards **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
1.07 Apply appropriate elements of the writing process: prewriting, drafting, revising, editing, and publishing.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Organization, Unity, and Coherence: Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
1.08 Use a variety of prewriting activities to generate, focus, and organize ideas.	**Writing** College Readiness Standards **Focusing on the Topic:** Maintain a focus on the general topic in the prompt throughout the essay **Developing a Position:** Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples **Organizing Ideas:** Provide a simple organization with logical grouping of ideas in parts of the essay
1.09 Use a variety of appropriate strategies to develop and support a thesis statement.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Writing** College Readiness Standards **Focusing on the Topic:** Present a thesis that establishes focus on the topic **Developing a Position:** Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.10 Construct coherent writing, maintaining a clear focus, well-developed ideas, syntactic variety, and effective transitions.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Show some recognition of the complexity of the issue in the prompt by • acknowledging counterarguments to the writer's position • providing some response to counter-arguments to the writer's position **Focusing on the Topic:** Maintain a focus on the general topic in the prompt throughout the essay and attempt a focus on the specific issue in the prompt Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay **Developing a Position:** Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples **Organizing Ideas:** Use some simple and obvious, but appropriate, transitional words and phrases **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.11 Develop an effective writing style by the use of appropriate voices, diction, syntactic variety, and tone.	**English** College Readiness Standards **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Writing** College Readiness Standards **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning
1.12 Evaluate and revise writing to focus on purpose, organization, development, and style.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion **Developing a Position:** Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples **Organizing Ideas:** Provide an adequate but simple organization with logical grouping of ideas in parts of the essay but with little evidence of logical progression of ideas

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Use some simple and obvious, but appropriate, transitional words and phrases Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas
1.13 Edit writing to correct errors.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
1.14 Apply effective research skills.	
1.15 Avoid plagiarism by correctly using sources.	
1.16 Research various sources to present information in a variety of formats.	
1.17 Develop personal, imaginative, and analytical responses to literature.	

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Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.18 Develop an ongoing awareness of personal writing growth through comparison of drafts, paragraphs of analysis, and letters of reflection.	
State Performance Indicators	
The student is able to:	
• Create a written explanation to a selected topic/problem (e.g., character analysis, community issue, personal challenge).	
• Write persuasively to present valid argument(s) from an established point of view.	**Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show some recognition of the complexity of the issue in the prompt by • acknowledging counterarguments to the writer's position • providing some response to counter-arguments to the writer's position Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion Show recognition of the complexity of the issue in the prompt by • partially evaluating implications and/or complications of the issue, and/or • posing and partially responding to counter-arguments to the writer's position **Focusing on the Topic:** Present a thesis that establishes a focus on the writer's position on the issue
• Write for a variety of purposes including persuasion, narration, description, and exposition.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Writing College Readiness Standards **Expressing Judgments:** Show a basic understanding of the persuasive purpose of the task by taking a position on the issue in the prompt but may not maintain that position
• Create original works (e.g., journals, poetry, stories, scripts, letters, notes, personal narrative essays). Create documents appropriate for a work environment (e.g., memos, resumes, letters, applications, proposals, technical instructions).	
• Address various readers (e.g., contest judges, publication editors, college admissions officers, peers).	
• Demonstrate through a writing activity (e.g., letter, article, journal entry, position paper) a knowledge of appropriate levels of diction.	**English** College Readiness Standards **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Writing** College Readiness Standards **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning
• Use elements of the writing process that are appropriate to the assigned task (e.g., timed writings, out-of-class compositions, published writings).	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of*

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
• Use a variety of prewriting activities (e.g., brainstorming, webbing, listing, discussing, clustering) appropriate to the assigned task.	
• Support a thesis statement with documentation from the text and/or examples from personal experiences.	**Writing** College Readiness Standards **Developing a Position:** Develop ideas by using some specific reasons, details, and examples
• Support key ideas with well-developed examples.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Writing College Readiness Standards **Developing a Position:** Develop most ideas fully, using some specific and relevant reasons, details, and examples
• Use transitional elements (words, phrases, and sentences) effectively.	**English** College Readiness Standards **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Writing** College Readiness Standards **Organizing Ideas:** Use some simple and obvious, but appropriate, transitional words and phrases Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas
• Vary sentence beginnings, lengths, and structures.	**Writing** College Readiness Standards **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace
• Convey in a writing passage a deliberate style through word choice, specified point of view, tone, and sentence patterns.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., "alarmingly startled") Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
• Practice various means of evaluation and revision (e.g., self-analysis, peer review, revision checklist, comparison of drafts).	
• Proofread to edit writing in order to ensure standard grammar, usage, and mechanics.	**English** College Readiness Standards **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Writing College Readiness Standards **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning
• Use summaries, paraphrases, direct quotations, internal documentation, and works cited pages, as appropriate.	
• Cite quotations, paraphrases, and summaries correctly in the research product.	
• Gather information from the Internet, periodicals, books, CD ROMS, and non-print sources.	
• Produce and present formal research projects (e.g., research papers, PowerPoint presentations, oral presentations).	
• Respond to literature in a variety of formats (e.g., reading journals, response journals, dialectical journals, investigative papers, learning logs).	
• Write reflections to analyze the processes used to create his/ her own work.	

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
The student will develop the reading skills necessary for word of the recognition, comprehension, interpretation, analysis, evaluation, and appreciation written text.	
Learning Expectations	
2.01 Develop an understanding of and respect for cultural, gender, and ethnic diversity in language use, patterns, and dialects.	
2.02 Extend reading vocabulary.	
2.03 Utilize a variety of interactive reading strategies appropriate to text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.04 Reflect on strategies used by the reader to make meaning from text.	
2.05 Increase fluency in oral reading.	
2.06 Read independently for a variety of purposes.	
2.07 Analyze the use of figurative language in various texts.	**Meanings of Words:** Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
2.08 Analyze the impact of literary elements in various texts.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Identify relationships between main characters in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.09 Analyze persuasive devices found in various texts.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Meanings of Words: Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.10 Read to interpret ideas, recognize relationships, and make judgments.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.11 Recognize the influence of an author's background and experience on literary work.	
2.12 Consult resource materials to increase understanding of the text.	
2.13 Respond to reading selections by making connections.	
State Performance Indicators	
The student is able to:	
• Respond to diversity in literary selections (e.g., dramatizations, writings, discussions, artistic representations).	

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
• Analyze two or more literary selections for language use, patterns, and dialects (e.g., comparison, contrast, graphic organizers).	
• Identify vocabulary necessary to the understanding of text.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
• Apply strategies for decoding unfamiliar words.	
• Synthesize reading vocabulary into written and oral communication.	
• Apply reading strategies (e.g., SQ3R, DRTA, vocabulary self-collection).	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Assess the effectiveness of strategies used during the reading process (e.g., journaling, discussing, coding).	
• Participate in a variety of oral reading experiences (e.g., choral reading, jump-in reading, paired reading).	
• Read independently to gather information and to expand specific knowledge.	
• Read independently for personal enjoyment.	
• Critique the effectiveness of figurative language (e.g., metaphor, simile, allusion, hyperbole).	
• Critique the significance of literary elements (e.g., plot, characterization, setting, theme, point of view, tone, irony).	
• Critique the effectiveness of rhetorical devices in persuasion (e.g., logos, pathos, ethos).	

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
• Use evidence from text to support interpretations, to understand relationships, and to validate judgments.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Investigate an author's background to determine influences (e.g., time period, gender, biases, environment, ethnicity) demonstrated within the text.	
• Locate and utilize credible resource materials to increase understanding of text.	
• Apply text information to make connections (e.g., cultural, personal, cross-curricular, historical, literary).	

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT** **College Readiness Standards**
Content Standard: 3.0. Viewing and Representing	
The student will use, read, and view media/technology and analyze content and concepts accurately.	
Learning Expectations	
3.01 Access and demonstrate multiple technological reference sources.	
3.02 Use media for a variety of audiences and purposes: to view, to experience, to read , to write, to communicate.	
3.03 Evaluate the impact of media on daily life.	
3.04 Evaluate varied media resources and information for accuracy and reliability.	
3.05 Develop research and analytical skills by using print and non-print media.	
3.06 Utilize media to create, display, and explain information.	
3.07 Evaluate the differences between using print and non-print media as means of communication.	
3.08 Explore production elements used in print and non-print media.	
State Performance Indicators	
The student is able to:	
• Use electronic media (e.g., websites, databases, discussion boards, e-mails) and other audio-visual media to conduct research and to create and present research-based products.	
• Create and present products incorporating multimedia components for specific audiences and purposes.	
• Examine and respond to the effect(s) of media on the ideas, mores, and values of individuals, communities, and the world.	
• Gauge the accuracy and reliability of any given set of resources.	
• Use a variety of print and non-print media to research a topic and evaluate the information in order to create a presentation.	
• Use a variety of media sources (e.g., PowerPoint, DVDs, CD-ROMs, audio and video cassettes) to create and present information.	
• Compare and contrast the effectiveness of print and non-print media.	
• Examine production elements (e.g., tables, diagrams, charts, graphs, drawings, maps, photographs, font, color, layout, graphics, camera angle, lighting) in both print and non-print media for the purpose of interpreting, clarifying, and communicating information.	

TABLE 1F

Tennessee English III (Grade 11) Standards, Expectations, and State Indicators	**ACT** **College Readiness Standards**
Content Standard: 4.0. Speaking and Listening	
The student will express ideas clearly and effectively in a variety of oral contexts and apply active listening skills in the analysis and evaluation of spoken ideas.	
Learning Expectations	
4.01 Use and/or demonstrate an understanding of effective communications skills in a variety of speaking situations.	
4.02 Conduct pertinent research for oral presentation(s).	
4.03 Consider and evaluate the perceptions of speakers and listeners.	
4.04 Adjust the level of language usage to the audience and purpose.	
4.05 Evaluate a variety of oral presentations.	
4.06 Improve critical listening skills essential for comprehension.	
4.07 Recognize the effects and implications of various dialects.	
State Performance Indicators	
The student is able to:	
• Make presentation(s) using or showing an understanding of volume, pitch, rate, diction, inflections, gestures, and body language to facilitate communication in a variety of situations.	
• Participate in group discussion by modeling effective interpersonal skills (e.g., restatement, clarification, active listening, pauses).	
• Support, modify, or refute positions or opinions by citing accurate and reliable sources.	
• Assess the viewpoints, judgments, and expectations of a speaker.	
• Assess the viewpoints, judgments, and expectations for listeners.	
• Evaluate speakers through the use of rubrics.	
• Disseminate information on a specific topic, adjusting to the appropriate level of language usage (e.g., grammar, content, style, vocabulary) for a variety of audiences and purposes.	
• Judge a variety of oral presentations (e.g., speeches, debates, and performances) by evaluating preparation, content, and delivery.	
• Demonstrate comprehension through a variety of responses (e.g., notetaking, questioning, summarizing, restating, discussing).	
• Identify dialects and their contributions to meaning.	

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
The student will develop the structural and creative skills necessary to produce written language that can be read and interpreted by various audiences.	
Learning Expectations	
1.01 Write to process knowledge, clarify thinking, synthesize and evaluate information, improve study skills, gain confidence, and promote lifelong communication.	
1.02 Write frequently for a variety of purposes.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation
1.03 Write for personal and imaginative expression.	
1.04 Use a variety of strategies for personal and business applications such as memos, resumes, letters, applications, proposals, and technical instructions.	
1.05 Identify and write for a variety of audiences.	
1.06 Recognize that language has several levels of diction determined by audience, purpose, and occasion.	**English** College Readiness Standards **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
1.07 Approach writing tasks systematically by using steps in the writing process: prewriting, drafting, revising, editing, and publishing.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of*

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
1.08 Practice a variety of prewriting activities to generate, focus, and organize ideas.	**Writing** College Readiness Standards **Developing a Position:** Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples **Focusing on the Topic:** Maintain a focus on the general topic in the prompt throughout the essay **Organizing Ideas:** Provide a simple organization with logical grouping of ideas in parts of the essay
1.09 Develop and support a thesis statement.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Writing** College Readiness Standards **Focusing on the Topic:** Present a thesis that establishes focus on the topic **Developing a Position:** Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples
1.10 Construct coherent writing, maintaining a clear focus, well-developed ideas, syntactic variety, and effective transitions.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show some recognition of the complexity of the issue in the prompt by • acknowledging counterarguments to the writer's position • providing some response to counter-arguments to the writer's position **Organizing Ideas:** Use some simple and obvious, but appropriate, transitional words and phrases **Focusing on the Topic:** Maintain a focus on the general topic in the prompt throughout the essay and attempt a focus on the specific issue in the prompt Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay **Developing a Position:** Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning
1.11 Demonstrate effective writing style by the use of appropriate voice, word choice, and tone.	**English** College Readiness Standards **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Writing** College Readiness Standards **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
1.12 Evaluate and revise writing to focus on purpose, organization, development, and style.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Writing College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion **Developing a Position:** Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples **Organizing Ideas:** Provide an adequate but simple organization with logical grouping of ideas in parts of the essay but with little evidence of logical progression of ideas Use some simple and obvious, but appropriate, transitional words and phrases Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas
1.13 Edit writing to correct errors.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series)

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
1.14 Apply effective research skills.	
1.15 Avoid plagiarism by using sources correctly.	
1.16 Research various sources to present information in a variety of formats.	
1.17 Develop personal, imaginative, and analytical responses to literature.	
1.18 Develop an ongoing awareness of personal writing growth through comparison of drafts, paragraphs of analysis, and letters of reflection.	
State Performance Indicators	
The student is able to:	
• Create a written explanation for a selected topic/problem (e.g., character analysis, community issue, personal challenge).	
• Write for a variety of purposes including persuasion, narration, description, and exposition.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Writing College Readiness Standards **Expressing Judgments:** Show a basic understanding of the persuasive purpose of the task by taking a position on the issue in the prompt but may not maintain that position
• Create original works (e.g., journals, poetry, stories, scripts, letters, notes, personal narrative essays).	
• Create documents appropriate for a work environment (e.g., memos, resumes, letters, applications, proposals, technical instructions).	
• Address various readers (e.g., contest judges, publication editors, college admissions officers, peers).	
• Rewrite prose passages using different levels of language (e.g., colloquialism, dialect, and jargon).	
• Use elements of the writing process that are appropriate to the assigned task (e.g., timed writings, out-of-class compositions, published writings).	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
• Use a variety of prewriting activities (e.g., brainstorming, webbing, listing, discussing, clustering) appropriate to the assigned task.	
• Develop cogent and convincing arguments to support valid thesis statements.	**Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion **Focusing on the Topic:** Present a thesis that establishes a focus on the writer's position on the issue
• Support a thesis statement with documentation from the text and/or examples from personal experiences.	**Writing** College Readiness Standards **Developing a Position:** Develop ideas by using some specific reasons, details, and examples
• Support key ideas with well-developed examples.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Writing** College Readiness Standards **Developing a Position:** Develop most ideas fully, using some specific and relevant reasons, details, and examples
• Use transitional elements (e.g., words, phrases, and sentences) effectively.	**English** College Readiness Standards **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Writing** College Readiness Standards **Organizing Ideas:** Use some simple and obvious, but appropriate, transitional words and phrases Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas
• Vary sentence beginnings, lengths, and structures.	**Writing** College Readiness Standards **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace
• Convey in a writing passage a deliberate style through word choice, specified point of view, tone, and sentence patterns.	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the central idea or main topic of a straightforward piece of writing Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”)

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
• Practice various means of evaluation and revision (e.g., self-analysis, peer review, revision checklist, comparison of drafts).	
• Proofread to edit writing in order to ensure standard grammar, usage, and mechanics.	**English** College Readiness Standards **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause **Writing** College Readiness Standards **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT English and Writing** **College Readiness Standards**
Content Standard: 1.0. Writing	
	Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
• Use summaries, paraphrases, direct quotations, internal documentation, and works cited pages, as appropriate.	
• Gather information from the Internet, periodicals, books, CD-ROMs, and non-print sources.	
• Cite quotations, paraphrases, and summaries correctly in the research product.	
• Produce and present formal research projects (e.g., research papers, PowerPoint presentations, oral presentations).	
• Respond to literature in a variety of formats (e.g., reading journals, response journals, dialectical journals, investigative papers, learning logs).	
• Write reflections to analyze the processes used to create his/her own writing.	

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
The student will develop the reading skills necessary for word recognition, comprehension, interpretation, analysis, evaluation, and appreciation of written text.	
Learning Expectations	
2.01 Develop an understanding of and respect for multicultural, gender, and ethnic diversity in language use, patterns, and dialects, as well as for the development of the English language.	
2.02 Extend reading vocabulary.	
2.03 Utilize a variety of interactive reading strategies appropriate to text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.04 Improve comprehension by interpreting, analyzing, synthesizing, and evaluating written text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.05 Reflect on strategies used by the reader to make meaning from text.	
2.06 Increase fluency in oral reading.	
2.07 Read independently for a variety of purposes.	
2.08 Determine the effectiveness of figurative language in various texts.	

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
2.09 Determine the impact of literary elements on texts.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Identify relationships between main characters in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.10 Analyze persuasive devices found in various texts.	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages **Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Meanings of Words: Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.11 Interpret ideas, recognize logical relationships, and make judgments based on sufficient evidence.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.12 Recognize the influence of an author's background, biases, gender, environment, and experience on a literary work.	
2.13 Consult resource materials to increase understanding of text.	
2.14 Read, respond to, and interpret print and nonprint text.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
2.15 Respond to reading selections by making connections.	
State Performance Indicators	
The student is able to:	
• Respond to literary selections which reflect cultural, gender, and ethnic diversity in language use, patterns, and dialects, as well as the development of the English language.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Compare and contrast literary selections for English language usage, patterns, and dialects over several time periods.	
• Identify new vocabulary necessary to the understanding of text.	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
• Apply strategies for decoding unknown words.	
• Analyze and synthesize reading vocabulary into written and oral responses.	

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
• Evaluate vocabulary to determine its effectiveness within the framework of the text.	
• Evaluate and determine appropriate interactive reading strategies.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Meanings of Words: Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Apply reading strategies appropriate to literary selections.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Demonstrate comprehension at higher levels through written and oral responses.	
• Assess the effectiveness of strategies used during the reading process through journaling, discussing, coding, and other techniques.	
• Participate in a variety of oral reading experiences to increase fluency.	
• Read independently to respond to teacher/student-generated questions, to gather information, to present information, and to expand knowledge.	
• Read independently for personal enjoyment.	

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
• Analyze the effectiveness of figurative language (e.g., metaphors, similes, allusions, hyperbole) used by authors to create mental images.	
• Analyze the effectiveness of literary devices (e.g., plot, characterization, setting, theme, point of view, tone, symbolism, irony) used in the text.	
• Critique the effectiveness of persuasive devices (e.g., bandwagon, propaganda, emotional appeal, testimonial) used in various texts.	
• Project character response based on prior knowledge gained from text.	**Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Use evidence from text to support summaries, inferences, conjectures, and predictions.	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate and interpret minor or subtly stated details in uncomplicated passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT Reading** **College Readiness Standards**
Content Standard: 2.0. Reading	
	Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
• Investigate an author's background to determine influences (e.g., historical, gender, biases) demonstrated within the text.	
• Compare and contrast passages reflecting the effect of different authors' influences.	
• Defend credible resource materials to increase understanding of text.	
• Interpret and analyze graphics and other resource materials associated with text to clarify and enhance understanding.	
• Apply text information to make connections (e.g., personal, historical, literary, and sensory).	

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT** **College Readiness Standards**
Content Standard: 3.0. Viewing and Representing	
The student will use, read, and view media/technology and analyze content and concepts accurately.	
Learning Expectations	
3.01 Access and demonstrate multiple technological reference sources.	
3.02 Use media for a variety of audiences and purposes: to view, to experience, to read, to write, to communicate.	
3.03 Use and evaluate media in order to disseminate information.	
3.04 Evaluate varied media resources and information for accuracy, validity, and reliability.	
3.05 Research, interpret, critique, and present information from print and nonprint media.	
3.06 Utilize media to create, to display, and to explain information.	
3.07 Evaluate production elements used in print and nonprint media.	
3.08 Use graphics for the purpose of interpreting, clarifying and communicating information.	
State Performance Indicators	
The student is able to:	
• Use electronic media (e.g., websites, databases, discussion boards, emails) and other audio-visual media to conduct research and to create and present research-based products.	
• Create and present products incorporating multimedia components for specific audiences and purposes.	
• Discern the advantages and limitations of a variety of media in order to create, to display, and to present information.	
• Compare and/or contrast the accuracy, validity and reliability of a variety of media resources through their treatment of the same event.	
• Use a variety of print and nonprint media to research a topic and evaluate the information in order to create a presentation.	
• Use a variety of media sources (e.g., PowerPoint, DVDs, CD-ROMs, audio and video cassettes) to create and present information.	
• Evaluate production elements in both print and nonprint media (e.g., font, color, layout, graphics, lighting, sound, camera angle) and analyze the effects.	
• Prepare and/or utilize graphics (e.g., tables, diagrams, charts, graphs, drawings, maps, and photographs) for the purpose of interpreting, clarifying and communicating information.	

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Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT** **College Readiness Standards**
Content Standard: 4.0. Speaking and Listening	
The student will express ideas clearly and effectively in a variety of oral contexts and apply active listening in the analysis and evaluation of spoken ideas.	
Learning Expectations	
4.01 Use and/or demonstrate an understanding of appropriate volume, pitch, rate, diction, inflection, gestures, and body language to facilitate confident communication in a variety of speaking situations.	
4.02 Demonstrate effective interpersonal skills in group discussions.	
4.03 Use pertinent research for oral presentations.	
4.04 Analyze, interpret, and evaluate print and nonprint texts through spoken language.	
4.05 Evaluate viewpoints, judgments, and expectations from the perspectives of both speakers and listeners.	
4.07 Evaluate a variety of oral presentations.	
4.08 Demonstrate critical listening skills essential for comprehension and evaluation.	
4.09 Define and solve problems rationally and creatively through speaking, listening, and viewing.	
4.10 Recognize the effects and implications of various dialects.	
4.11 Present a position and/or opinion clearly and persuasively by citing sources of information/research.	
State Performance Indicators	
The student is able to:	
• Make a presentation using or showing an understanding of volume, pitch, rate, diction, inflection, gestures, and body language to facilitate confident communication in a variety of situations.	
• Participate in group discussions by modeling effective interpersonal skills (leader, recorder, facilitator).	
• Synthesize and incorporate print and nonprint texts in a variety of oral presentations.	
• Synthesize and incorporate print and nonprint texts in a variety of oral presentations.	
• Use rubrics to assess the viewpoints, judgments, and opinions of speakers and listeners.	
• Disseminate information on a specific topic, adjusting to the appropriate level of language usage (grammar, content, style, vocabulary) for a variety of audiences and purposes.	
• Use rubrics to evaluate a variety of oral presentations, including speeches, debates, and performances.	
• Use rubrics to evaluate a variety of oral presentations.	
• Critique a variety of oral presentations (e.g., take notes, complete a rubric, write a summary).	

TABLE 1G

Tennessee English IV (Grade 12) Standards, Expectations, and State Indicators	**ACT** **College Readiness Standards**
Content Standard: 4.0. Speaking and Listening	
• Identify how the effects of dialect contribute to meaning.	
• Support, modify, or refute positions or opinions by citing accurate and reliable sources.	

SUPPLEMENT

TABLES 2A–2R:

MATHEMATICS

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
The student will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.	
Learning Expectations	
1.1. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
1.2. Understand operations and how they relate to one another.	
1.3. Solve problems, compute fluently, and make reasonable estimates.	
Accomplishments	
7.1.1. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
a. recognize the place value of a given digit;	**Numbers: Concepts & Properties:** Identify a digit's place value
b. develop meaning for perfect squares (e.g., 1, 4, 9, 16);	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
c. develop meaning for square roots;	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
d. use exponential notation;	**Numbers: Concepts & Properties:** Work with scientific notation
e. use a variety of models to demonstrate the relationships within the real number system (e.g., Venn diagrams, webs);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
f. represent equivalent numbers using a variety of forms (i.e., whole numbers, fraction, decimals, percents);	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
g. compare fractions, decimals, percents, and integers using the appropriate symbol (i.e., <, >, =);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
h. connect whole numbers, fractions, decimals, percents, and integers to locations on the number line;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
The student will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.	
i. develop meaning for percents greater than 100 and less than one;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent
j. understand and use ratios and proportions to represent quantitative relationships;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
k. develop meaning for opposites, reciprocals, and integers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
l. use concrete, pictorial, and symbolic representations for integers;	
m. apply number theory concepts to solve problems (e.g., divisibility, factors, multiples, composite numbers, prime factorization, relatively prime).	**Numbers: Concepts & Properties:** Recognize one-digit factors of a number Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple Work with numerical factors
7.1.2. Understand operations and how they relate to one another.	
a. understand the meaning and effects of arithmetic operations with fractions and decimals;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems
b. use models to demonstrate meaning and effects of arithmetic operations with integers;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
The student will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.	
c. apply the associative and commutative properties of addition and multiplication to simplify computations with integers, fractions, and decimals;	**Basic Operations & Applications:** Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
d. apply order of operations when computing with whole numbers, decimals, and fractions;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
e. understand and use the inverse relationships of addition and subtraction and multiplication and division to simplify computations and solve problems.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) **Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers
7.1.3. Solve problems, compute fluently, and make reasonable estimates.	
a. select and use appropriate methods and tools for computing with whole numbers, fractions, decimals, percents, and integers in problem solving situations (e.g., mental computation, estimation, calculators, computers, paper and pencil);	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
b. analyze procedures for computing with fractions, decimals, and integers;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
The student will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.	
c. use strategies to estimate the results of rational number computations in real-world situations;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
d. judge the reasonableness of the results of rational number estimates and computations;	
e. solve two-step real-world problems involving whole numbers, fraction, decimals, and percents;	**Basic Operations & Applications:** Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
f. develop methods for solving problems involving proportions (e.g., scaling, finding equivalent ratios).	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
State Performance Indicators	
The student is able to:	
7.1.spi.1. identify prime and composite numbers up to 50;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
7.1.spi.2. compute efficiently and accurately with whole numbers, fractions, and decimals;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems
7.1.spi.3. represent numbers using a variety of equivalent forms (i.e., mixed numbers, fractions, decimals, percents, and integers);	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
7.1.spi.4. compare rational numbers using the appropriate symbol (<, >, =);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
The student will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.	
7.1.spi.5. identify the opposite and the reciprocal of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
7.1.spi.6. connect percents greater than 100 and percents less than one to real-world situations;	**Basic Operations & Applications:** Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
7.1.spi.7. apply order of operations when computing with whole numbers (no more than two parentheses and no exponents);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
7.1.spi.8. solve one- and two-step real-world problems involving whole numbers, fractions, and decimals;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
7.1.spi.9. use estimation strategies to select a reasonable solution to a computation involving rational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
7.1.spi.10. select a reasonable solution to a real-world division problem in which the remainder must be considered;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
7.1.spi.11. connect rational numbers to locations on the number line;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
7.1.spi.12 use ratios to represent quantitative relationships.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.	
Learning Expectations	
2.1. Understand patterns, relations, and functions.	
2.2. Represent and analyze mathematical situations and structures using algebraic symbols.	
2.3. Use mathematical models to represent and understand quantitative relationships.	
2.4. Analyze change in various contexts.	
Accomplishments	
7.2.1. Understand patterns, relations, and functions.	
a. represent, analyze, and extend geometric and numerical patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
b. develop understanding for arithmetic sequences;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
c. use tables, graphs, and symbolic rules to generalize patterns in data;	**Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph)
d. apply and create function rules.	
7.2.2. Represent and analyze mathematical situations and structures using algebraic symbols.	
a. demonstrate understanding of different uses of variables;	
b. represent mathematical statements and real-world situations using symbols;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
c. translate one-variable verbal and written expressions into algebraic expressions;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.	
d. evaluate algebraic expressions given the value of two or more variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
e. connect formal and informal methods to solve one-step linear equations;	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations
f. identify whole numbers that satisfy a given one-variable inequality;	
g. model algebraic equations with manipulatives, technology, and pencil and paper;	
h. solve real-world problems involving one-step linear equations;	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations
i. explore relationships between symbolic expressions and graphs of lines.	
7.2.3. Use mathematical models to represent and understand quantitative relationships.	
a. create a scatterplot to represent data presented in tabular form;	
b. describe the relationship between two quantities represented in a scatterplot.	**Probability, Statistics, & Data Analysis:** Read tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph)
7.2.4. Analyze change in various contexts.	
a. describe how changes in one quantity or variable result in changes in another;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
b. use unit rates to solve problems (e.g., miles per hour, words per minutes).	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes) Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.	
State Performance Indicators	
The student is able to:	
7.2.spi.1. extend geometric and numerical patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
7.2.spi.2. apply function rules;	
7.2.spi.3. extend rate charts to solve real-world problems;	**Probability, Statistics, & Data Analysis:** Perform computations on data from tables and graphs
7.2.spi.4. generalize patterns in data represented in tables and graphs;	**Probability, Statistics, & Data Analysis:** Read tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph)
7.2.spi.5. represent mathematical statements and real-world situations using symbols;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
7.2.spi.6. evaluate algebraic expressions for a given value of up to two variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
7.2.spi.7. solve one-step linear equations;	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations
7.2.spi.8. solve real-world problems involving one-step linear equations;	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations
7.2.spi.9. identify whole numbers that satisfy a given one-variable one-variable linear inequality;	
7.2.spi.10. select the scatterplot that represents the data in tabular form;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.	
7.2.spi.11. interpret graphs which represent rates of change.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
The student will develop an understanding of geometric concepts and relationships as the basis for geometric modeling and reasoning to solve problems involving one-, two-, and three-dimensional figures.	
Learning Expectations	
3.1. Analyze characteristics and properties of two- and three-dimensional geometric figures.	
3.2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	
3.3. Apply transformations and use symmetry to analyze mathematical situations.	
3.4. Use visualization, spatial reasoning, and geometric modeling to solve problems.	
Accomplishments	
7.3.1. Analyze characteristics and properties of two- and three-dimensional geometric figures.	
a. determine congruence of line segments, angles, and polygons by direct comparison of given attributes;	**Properties of Plane Figures:** Find the measure of an angle using properties of parallel lines
b. compare and classify triangles by angle size and length of sides;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
c. compare and classify polygons by properties;	
d. use appropriate mathematical language to describe similarity and congruence.	
7.3.2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	
a. plot a given set of points on the coordinate plane.	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
7.3.3. Apply transformations and use symmetry to analyze mathematical situations.	
a. relate symmetry and congruence to reflections about a line.	
7.3.4. Use visualization, spatial reasoning, and geometric modeling to solve problems.	
a. use appropriate tools and methods to draw geometric objects with specified properties, (e.g., side lengths, angle measure);	
b. build a three-dimensional object from a two-dimensional representation (net) of that object and vice versa;	
c. use visualization and spatial reasoning to solve real-world problems.	

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
State Performance Indicators	
The student is able to:	
7.3.spi.1. identify the results of transformations of two-dimensional figures (i.e., turns/rotations, flips/reflections, slides/translations).	
7.3.spi.2. classify triangles by angle, size, and length of sides;	
7.3.spi.3. determine congruence of line segments, angles, and polygons;	
7.3.spi.4. classify polygons by properties;	
7.3.spi.5. use ordered pairs to describe given points in a coordinate system;	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
7.3.spi.6. determine the measure of an angle of a triangle given the measures of the other two angles;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
7.3.spi.7. apply spatial reasoning and visualization to solve real-world problems.	

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.	
Learning Expectations	
4.1. Understand measurable attributes of objects and the units, systems, and processes of measurement.	
4.2. Apply appropriate techniques, tools, and formulas to determine measurements.	
Accomplishments	
7.4.1. Understand measurable attributes of objects and the units, systems, and processes of measurement.	
a. understand both metric and customary systems of measurement;	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes)
b. convert from one unit to another within the same system;	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes)
c. understand, select, and use units of appropriate size and type to measure angles, perimeter, areas, surface area, and volume.	
7.4.2. Apply appropriate techniques, tools, and formulas to determine measurements.	
a. use a variety of strategies to estimate length, perimeter, circumference, area, and volume;	
b. select and apply techniques and tools to accurately measure length, perimeter, area, volume, and angles to appropriate levels of precision;	
c. develop and use formulas to determine the circumference of circles and the area of triangles, parallelograms, trapezoids, and circles;	**Measurement:** Use geometric formulas when all necessary information is given
d. develop strategies to find area of complex shapes;	
e. develop strategies to determine the surface area and volume of selected prisms and cylinders;	
f. construct tables and graphs to represent rates of change.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Locate points in the coordinate plane
State Performance Indicators	
The student is able to:	
7.4.spi.1. apply formulas to determine the areas of rectangles and triangles;	**Measurement:** Use geometric formulas when all necessary information is given

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.	
7.4.spi.2. determine the distance between two points on the x- or the y-axis in Quadrant I;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions
7.4.spi.3. convert from one unit to another within the same system;	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes)
7.4.spi.4. select units of appropriate size and type to measure angles, perimeter, area, surface area, and volume;	
7.4.spi.5. apply formulas to determine the area of parallelograms, trapezoids, and circles;	**Measurement:** Use geometric formulas when all necessary information is given
7.4.spi.6. estimate length, perimeter, circumference, area, and volume using a variety of strategies;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
7.4.spi.7. find or estimate the area of irregular and complex shapes;	**Measurement:** Use geometric formulas when all necessary information is given
7.4.spi.8. solve problems involving scale factors using ratios and proportions.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
The student will understand and apply basic statistical and probability concepts in order to organize and analyze data and to make predictions and conjectures.	
Learning Expectations	
5.1. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer questions.	
5.2. Select and use appropriate statistical methods to analyze data.	
5.3. Develop and evaluate inferences and predictions that are based on data.	
5.4. Understand and apply basic concepts of probability.	
Accomplishments	
7.5.1. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer questions.	
a. formulate questions, design studies, and collect real-world data;	
b. construct, interpret, and use multiple-bar graphs, multiple-line graphs, and circle graphs displaying real-world data.	**Probability, Statistics, & Data Analysis:** Perform a single computation using information from a table or chart Read tables and graphs Perform computations on data from tables and graphs
7.5.2. Select and use appropriate statistical methods to analyze data.	
a. find, use, and interpret measures of center and spread (e.g., mean, interquartile range);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values
b. recognize misleading representations of data;	**Probability, Statistics, & Data Analysis:** Read tables and graphs
c. discuss and understand the relationship between data sets and their graphical representations (e.g., bar graphs, line graphs, circle graphs, histograms, stem-and-leaf plots, box plots, and scatterplots).	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
7.5.3. Develop and evaluate inferences and predictions that are based on data.	
a. make conjectures and predictions based on data;	
b. make conjectures to formulate new questions for future studies.	

TABLE 2A

Tennessee Grade 7 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
7.5.4. Understand and apply basic concepts of probability.	
a. connect the symbolic representation of a probability to an experiment;	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement Compute straightforward probabilities for common situations
b. construct a tree diagram to determine all possible outcomes of a simple event.	
State Performance Indicators	
The student is able to:	
7.5.spi.1. interpret bar and line graphs to answer questions and solve real-world problems.	**Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph)
7.5.spi.2. interpret circle graphs displaying real-world data;	**Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph)
7.5.spi.3. determine the mean for a data set;	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the average, given the frequency counts of all the data values
7.5.spi.4. determine the median for a data set;	
7.5.spi.5. make predictions based on data;	
7.5.spi.6. use a tree diagram or organized list to determine all possible outcomes of a simple compound event;	
7.5.spi.7. connect data sets and their graphical representation (i.e., bar graphs, stem-and-leaf plots, box plots, and scatterplots);	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
7.5.spi.8. use proportional thinking to make conjectures about results of experiments and simulations;	
7.5.spi.9. connect the symbolic representation of a probability to an experiment.	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement Determine the probability of a simple event Compute straightforward probabilities for common situations

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
The student will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.	
Learning Expectations	
1.1. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
1.2. Understand operations and how they relate to one another.	
1.3. Solve problems, compute fluently, and make reasonable estimates.	
Accomplishments	
8.1.1. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
a. recognize the place value of a given digit;	**Numbers: Concepts & Properties:** Identify a digit's place value
b. use exponents to express a monomial written in expanded form;	
c. determine the square root of perfect squares;	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
d. use a variety of models to demonstrate the relationships within the real number system (e.g., Venn diagrams, webs);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
e. work flexibly with fractions, decimals, and percents to solve problems;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems
f. compare and order fractions, decimals, and percents;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
g. connect whole numbers, fractions, decimals, percents and integers to locations on the number line;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
h. develop meaning for percents greater than 100 and less than one;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent
i. use appropriate mathematical language and symbols to express numerical relationships (e.g., <, >, =, ≥);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
j. understand and use ratios and proportions to represent quantitative relationships;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
k. recognize and use exponential, scientific, and calculator notation to represent large numbers in real-world situations;	**Numbers: Concepts & Properties:** Work with scientific notation
l. demonstrate understanding of opposites, reciprocals, and integers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
m. identify the opposite of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
n. use concrete, pictorial, and symbolic representations of integers;	
o. apply number theory concepts to solve problems (e.g., divisibility, factors, multiples, composite numbers, prime factorization, relatively prime).	**Numbers: Concepts & Properties:** Recognize one-digit factors of a number Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple Work with numerical factors
8.1.2. Understand operations and how they relate to one another.	
a. understand the meaning and effects of arithmetic operations with fractions, decimals, and integers;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
b. apply the associative and commutative properties of addition and multiplication to simplify computations with integers, fractions, and decimals;	**Basic Operations & Applications:** Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
c. use the distributive property to simplify computations with integers, fractions, and decimals;	**Basic Operations & Applications:** Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
d. apply order of operations in computing with rational numbers;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
e. understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) **Numbers: Concepts & Properties:** Work with squares and square roots of numbers **Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers
8.1.3. Solve problems, compute fluently, and make reasonable estimates.	
a. select and use appropriate methods and tools for computing with whole numbers, fractions, decimals, percents, and integers in problem-solving situations (e.g., mental computation, estimation, calculators, computers, paper and pencil);	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
b. develop and analyze procedures for computing with fractions, decimals, and integers;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
c. develop and use strategies to estimate the results of rational number computations in real-world situations;	
d. judge the reasonableness of the results of rational number estimates and computations;	
e. solve one-step real-world problems involving whole numbers, fractions, decimals, and percents;	**Basic Operations & Applications:** Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
f. raise rational numbers to whole number powers;	
g. solve multi-step real-world problems involving whole numbers, fractions, decimals, and percents;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
h. develop, analyze, and explain methods for solving problems involving proportions (e.g., scaling, finding equivalent ratios);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
i. calculate rates involving cost per unit to determine the best buy.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
State Performance Indicators	
The student is able to:	
8.1.spi.1. identify the opposite and the reciprocal of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
8.1.spi.2. compare rational numbers using the appropriate symbol (<, >, =);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operation	
8.1.spi.3. use ratios and proportions to represent real-world situations (i.e., scale drawings, probability);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
8.1.spi.4. determine the approximate locations of rational numbers on a number line;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
8.1.spi.5. determine the square roots of perfect squares (< 169);	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
8.1.spi.6. work flexibly with fractions, decimals, and percents to solve one- and two-step word problems;	**Basic Operations & Applications:** Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
8.1.spi.7. compute efficiently and accurately with whole numbers, fractions, decimals, and percents;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems
8.1.spi.8. use estimation strategies to select a reasonable solution to a real-world problem involving computing with rational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
8.1.spi.9. calculate rates involving cost per unit to determine the best buy.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
8.1.spi.10. use exponential, scientific, and calculator notation to represent large numbers in real-world situations;	**Numbers: Concepts & Properties:** Work with scientific notation
8.1.spi.11. apply order of operations in computing with rational numbers using no more than two parentheses and exponents 1 and 2.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.	
Learning Expectations	
2.1. Understand patterns, relations, and functions.	
2.2. Represent and analyze mathematical situations and structures using algebraic symbols.	
2.3. Use mathematical models to represent and understand quantitative relationships.	
2.4. Analyze change in various contexts.	
Accomplishments	
8.2.1. Understand patterns, relations, and functions.	
a. represent, analyze, and generalize a variety of patterns with tables, graphs, words, and when possible symbolic rules;	**Probability, Statistics, & Data Analysis:** Read tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
b. develop understanding for arithmetic and geometric sequences;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
c. relate and compare different forms of representation for a relationship;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
d. identify functions as linear or nonlinear;	
e. compare and contrast properties of functions from tables, graphs, or equations.	
8.2.2. Represent and analyze mathematical situations and structures using algebraic symbols.	
a. formulate multi-step equations that represent relationships and real-world situations;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
b. develop meaning for intercept and slope;	
c. use symbolic algebra to represent situations and solve problems;	
d. use a variety of forms to represent linear relationships;	

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
e. recognize and generate equivalent forms for simple algebraic expressions;	
f. evaluate a first-degree algebraic expression given values for two or more variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
g. solve one- and two-step linear equations involving integers;	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations
h. use a variety of methods to solve real-world problems involving multi-step linear equations (e.g., manipulatives, technology, pencil and paper);	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations
i. apply given formulas to solve real-world problems;	**Expressions, Equations, & Inequalities:** Evaluate algebraic expressions by substituting integers for unknown quantities **Measurement:** Use geometric formulas when all necessary information is given
j. solve one-step linear inequalities;	
k. identify the graph of a linear equation;	
l. identify the graphical representation of the solution to a one-variable linear inequality;	
m. develop understanding for particular values of patterns, relationships, and functions (e.g., x- and y-intercepts, slope, maximum and minimum values).	
8.2.3. Use mathematical models to represent and understand quantitative relationships.	
a. use a variety of representations to solve real-world problems (e.g., graphs, tables, equations).	**Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Manipulate data from tables and graphs
8.2.4. Analyze change in various contexts.	
a. compare linear relationships to non-linear relationships;	
b. develop meaning for rate of change in real-world situations.	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
State Performance Indicators	
The student is able to:	
8.2.spi.1. generalize a variety of patterns with symbolic rules;	**Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
8.2.spi.2. evaluate a first-degree algebraic expression given values for two or more variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
8.2.spi.3. represent situations and solve real-world problems using symbolic algebra;	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
8.2.spi.4. connect symbolic expressions and graphs of lines;	
8.2.spi.5. generate equivalent forms for simple algebraic expressions;	
8.2.spi.6. solve one- and two-step linear equations involving integers;	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations
8.2.spi.7. apply given formulas to solve real-world problems;	**Expressions, Equations, & Inequalities:** Evaluate algebraic expressions by substituting integers for unknown quantities **Measurement:** Use geometric formulas when all necessary information is given
8.2.spi.8. interpret graphs which represent rates of change;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
8.2.spi.9. formulate multi-step equations that represent relationships and real-world situations;	**Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
8.2.spi.10. solve one-step linear inequalities;	
8.2.spi.11. connect the appropriate graph to a linear equation.	

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
The student will develop an understanding of geometric concepts and relationships as the basis for geometric modeling and reasoning to solve problems involving one-, two-, and three-dimensional figures.	
Learning Expectations	
3.1. Analyze characteristics and properties of two- and three-dimensional geometric figures.	
3.2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	
3.3. Apply transformations and use symmetry to analyze mathematical situations.	
3.4. Use visualization, spatial reasoning, and geometric modeling to solve problems.	
Accomplishments	
8.3.1. Analyze characteristics and properties of two- and three-dimensional geometric figures.	
a. describe, classify, and understand relationships among types of two- and three-dimensional objects using their defining properties;	
b. understand relationships among the angles (e.g., complementary, supplementary, interior, exterior, vertical, corresponding);	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
c. solve problems using angle relationships (e.g., complementary, supplementary, interior, exterior, vertical, corresponding);	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
d. determine the measure of an angle of a triangle given the measures of the other two angles;	
e. understand relationships among the angles and side lengths of similar geometric figures;	
f. determine congruence of line segments, angles, and polygons by direct comparison of given attributes;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
g. develop understanding of the Pythagorean theorem.	
8.3.2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	
a. graph points in the coordinate system.	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
8.3.3. Apply transformations and use symmetry to analyze mathematical situations.	
a. describe sizes, positions, and orientations of shapes under transformations (e.g., rotations, translations, reflections, dilations);	
b. relate symmetry and congruence to reflections about a line.	
8.3.4. Use visualization, spatial reasoning, and geometric modeling to solve problems.	
a. use appropriate tools and methods to draw geometric objects with specified properties, (e.g., side lengths, angle measure);	
b. use two-dimensional representations of three-dimensional objects to visualize;	
c. use visualization and spatial reasoning to solve real-world problems;	
d. recognize and apply geometric ideas and relationships such as tessellations in areas outside the mathematics classroom (e.g., art, science, everyday life).	
State Performance Indicators	
The student is able to:	
8.3.spi.1. classify types of two- and three-dimensional geometric figures using their defining properties;	
8.3.spi.2. use ordered pairs to describe given points in a coordinate system;	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
8.3.spi.3. identify relationships among angles (i.e., complementary, supplementary, interior, exterior, vertical, corresponding);	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
8.3.spi.4. recognize similar geometric figures;	
8.3.spi.5. determine the measure of an angle of a triangle given the measures of the other two angles;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
8.3.spi.6. apply relationships among angles and side lengths of similar geometric figures;	
8.3.spi.7. apply spatial reasoning and visualization to solve real-world problems;	
8.3.spi.8. apply geometric ideas and relationships in areas outside the mathematics classroom (i.e., art, science, everyday life);	

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
8.3.spi.9. solve problems using angle relationships (i.e., complementary, supplementary, interior, exterior, vertical, corresponding).	**Properties of Plane Figures:** Find the measure of an angle using properties of parallel lines Use several angle properties to find an unknown angle measure

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.	
Learning Expectations	
4.1. Understand measurable attributes of objects and the units, systems, and processes of measurement.	
4.2. Apply appropriate techniques, tools, and formulas to determine measurements.	
Accomplishments	
8.4.1. Understand measurable attributes of objects and the units, systems, and processes of measurement.	
a. understand both metric and customary systems of measurement;	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes)
b. understand relationships among units and convert from one unit to another within the same system;	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes)
c. understand, select, and use units of appropriate size and type to measure angles, perimeter, areas, surface area, and volume.	
8.4.2. Apply appropriate techniques, tools, and formulas to determine measurements.	
a. use a variety of strategies to estimate length, perimeter, circumference, area, and volume;	
b. select and apply techniques and tools to accurately measure length, perimeter, area, volume, and angles to appropriate levels of precision;	
c. apply formulas and/or other strategies to solve problems involving perimeter, circumference of circles, and the area of triangles, parallelograms, trapezoids, and circles;	**Measurement:** Use geometric formulas when all necessary information is given
d. find area of complex and irregular shapes;	
e. apply given formulas to find volume of selected prisms and cylinders;	**Measurement:** Use geometric formulas when all necessary information is given
f. compare and contrast the volumes of a variety of geometric solids;	**Measurement:** Use geometric formulas when all necessary information is given
g. solve problems involving rate/time/distance (i.e., d = rt);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
h. solve problems involving scale factors using ratio and proportion;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
i. solve real-world problems using the Pythagorean Theorem;	
j. construct tables and graphs to represent rates of change;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
k. find measures using proportional relationships and properties of similar figures;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) **Graphical Representations:** Find the measure of an angle using properties of parallel lines
l. determine the measure of angles by applying angle relationships (e.g., complementary, supplementary, interior, exterior, vertical, corresponding).	
State Performance Indicators	
The student is able to:	
8.4.spi.1. select units of appropriate size and type to measure angles, perimeter, area, surface area, and volume;	
8.4.spi.2. convert from one unit to another within the same system;	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes)
8.4.spi.3. estimate length, perimeter, circumference, area, and volume using a variety of strategies;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
8.4.spi.4. apply formulas to find the area of triangles, parallelograms, and trapezoids;	**Measurement:** Use geometric formulas when all necessary information is given
8.4.spi.5. solve real-world problems involving rate/time/distance (i.e., d = rt);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
8.4.spi.6. apply formulas to find the circumference and area of circles;	**Measurement:** Use geometric formulas when all necessary information is given

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
8.4.spi.7. estimate or find the area of irregular and complex shapes;	**Measurement:** Use geometric formulas when all necessary information is given
8.4.spi.8. solve problems involving scale factors using ratios and proportions;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
8.4.spi.9. solve real-world problems using the Pythagorean Theorem (no radicals).	

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
The student will understand and apply basic statistical and probability concepts in order to organize and analyze data and to make predictions and conjectures.	
Learning Expectations	
5.1. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer questions.	
5.2. Select and use appropriate statistical methods to analyze data.	
5.3. Develop and evaluate inferences and predictions that are based on data.	
5.4. Understand and apply basic concepts of probability.	
Accomplishments	
8.5.1. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer questions.	
a. formulate questions, design studies, and collect real-world data for investigations using a variety of collection methods (e.g., random sampling, simulations);	
b. select, create, and use appropriate graphical representations of real-world data (e.g., histograms, box plots, scatterplots).	
8.5.2. Select and use appropriate statistical methods to analyze data.	
a. find, use, and interpret measures of center and spread (e.g., mean, interquartile range);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values
b. develop meaning for frequency, distribution, and outliers;	
c. discuss and understand the relationship between data sets and their graphical representations (e.g., bar graphs, line graphs, circle graphs, histograms, stem-and-leaf plots, box plots, scatterplots).	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
8.5.3. Develop and evaluate inferences and predictions that are based on data.	
a. make conjectures and predictions based on data;	
b. recognize misleading presentations of data;	
c. develop meaning for lines of best fit;	
d. determine an appropriate sample to test a hypothesis;	

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
e. make conjectures to formulate new questions for future studies.	
8.5.4. Understand and apply basic concepts of probability.	
a. develop meaning of mutually exclusive events;	
b. connect the symbolic representation of a probability to an experiment;	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement Determine the probability of a simple event Compute straightforward probabilities for common situations
c. use a variety of methods to compute probabilities for compound events (e.g., multiplication, organized lists, tree diagrams, area models);	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement Determine the probability of a simple event Compute straightforward probabilities for common situations
d. distinguish between theoretical and experimental probability;	
e. find the probability of dependent and independent events.	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
State Performance Indicators	
The student is able to:	
8.5.spi.1. identify an appropriate sample to test a given hypothesis.	
8.5.spi.2. interpret appropriate graphical representations of data (i.e., histograms, box plots, scatterplots);	
8.5.spi.3. determine the mean of a given set of real-world data;	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the average, given the frequency counts of all the data values
8.5.spi.4. connect data sets and their graphical representations (i.e., histograms, stem-and-leaf plots, box plots, scatterplots);	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
8.5.spi.5. make conjectures and predictions based on data;	
8.5.spi.6. connect the symbolic representation of a probability to an experiment;	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement Determine the probability of a simple event Compute straightforward probabilities for common situations

TABLE 2B

Tennessee Grade 8 Mathematics Standards, Expectations, Accomplishments, State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
8.5.spi.7. determine the median of a given set of real-world data (even number of data);	
8.5.spi.8. recognize misleading presentations of data.	

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the subsets, elements, properties, and operations of the rational number system;	
1.2. connect physical, graphical, verbal, and symbolic representations of rational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.3. order and compare rational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
1.4. informally describe and model the concept of additive and multiplicative inverses (e.g., opposites, reciprocals) in real life problem situations;	
1.5. apply number theory concepts (e.g., primes, composites, factors, divisibility ,and multiples) in mathematical problem situations;	**Numbers: Concepts & Properties:** Recognize one-digit factors of a number Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple Work with numerical factors
1.6. use rational numbers to represent real-world applications (e.g., probability, proportionality);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.7. use mathematical notations appropriately;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)
1.8. select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with rational numbers, and evaluate the reasonableness of results;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
1.9. apply estimation strategies in computation and in problem solving.	
Student Performance Indicators	
The student is able to:	
• represent rational numbers in a variety of ways using concrete objects, pictures, the number line, and symbols;	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• compute fluently with whole numbers, fractions, decimals, and percent;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems
• compare rational numbers using the appropriate symbol (<, >, =);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• work flexibly with fractions, decimals, and percents in one- or two-step word problems;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems
• represent quantitative relationships using ratios and proportions;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
• identify numbers less than 100 as prime or composite;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• give the prime factorization for a number less than 100;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with numerical factors Apply number properties involving prime factorization
• determine the greatest common factor and the least common multiple for up to three numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple
• apply order of operations in computing with rational numbers, using no more than two parentheses and exponents 1 and 2;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• calculate rates involving cost per unit to determine the best buy;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• demonstrate an understanding of percent in solving real-world problems;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• describe relationships among operations;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• use estimation strategies to select a reasonable solution to a real-world problem involving rational number computation;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• develop, analyze, and explain methods for solving problems involving proportions (i.e., scaling, finding equivalent ratios);	

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• express a monomial written in expanded form using exponents;	**Numbers: Concepts & Properties:** Apply rules of exponents
• identify the opposite and the reciprocal of a given rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• determine square roots of perfect squares (<169).	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and solve real-world problems using appropriate representations.	
Learning Expectations	
The student will:	
2.1. recognize, extend, and create geometric, spatial, and numerical patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.2. solve problems in number theory, geometry, probability and statistics, and measurement and estimation using algebraic thinking;	
2.3. communicate the meaning of variables in algebraic expressions and equations;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
2.4. apply the concept of variable in simplifying algebraic expressions and solving equations;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Substitute whole numbers for unknown quantities to evaluate expressions Solve one-step equations having integer or decimal answers Evaluate algebraic expressions by substituting integers for unknown quantities Solve routine first-degree equations Perform straightforward word-to-symbol translations
2.5. interpret graphs that depict real-world phenomena;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
2.6. model real-world phenomena using graphs.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
Student Performance Indicators	
The student is able to:	
• extend geometric, spatial, and numeric patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• generalize a variety of patterns with symbolic rules;	
• represent situations and solve real-world problems using symbolic algebra;	
• generate equivalent forms for simple algebraic expressions;	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$)
• solve one-step linear equations involving integers;	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations
• evaluate a first-degree algebraic expression given values for up to two variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
• apply given formulas to solve real-world problems;	**Expressions, Equations, & Inequalities:** Evaluate algebraic expressions by substituting integers for unknown quantities **Measurement:** Use geometric formulas when all necessary information is given
• use a variety of representations to solve real-world problems (i.e., graphs, tables, equations);	**Probability, Statistics, & Data Analysis:** Perform a single computation using information from a table or chart Read tables and graphs Perform computations on data from tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs
• connect linear equations and the appropriate graphs of lines;	
• explain the meaning of intercept, slope, and rate of change in real-world problems.	

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships.	
Learning Expectations	
The student will:	
3.1. apply geometric properties, formulas, and relationships to solve real-world problems;	**Measurement:** Use geometric formulas when all necessary information is given
3.2. communicate position using spatial sense with two-dimensional coordinate systems;	**Graphical Representations:** Locate points in the coordinate plane Interpret and use information from graphs in the coordinate plane
3.3. demonstrate an understanding of the properties and construction of geometric figures, including angles, parallel lines, perpendicular lines, triangles, circles, and quadrilaterals.	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point **Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
Student Performance Indicators	
The student is able to:	
• use ordered pairs to describe given points in a coordinate system;	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
• apply the given formula to determine the area or perimeter of a rectangle;	**Measurement:** Use geometric formulas when all necessary information is given
• find the missing length of a side, given two similar triangles;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure
• classify a quadrilateral, given its properties, as a square, a rectangle, a rhombus, a parallelogram, and/or a trapezoid;	

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• calculate the area of a circle, a triangle, a parallelogram, a rhombus, or a trapezoid given the appropriate formula;	**Measurement:** Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
• apply the Pythagorean Theorem in problem solving;	**Properties of Plane Figures:** Use the Pythagorean theorem
• determine and justify the missing angle measures, given the measure of one angle, when two parallel lines are cut by a transversal.	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Use several angle properties to find an unknown angle measure

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
Students will become familiar with the units and processes of measurement in order to use various tools, techniques, and formulas to determine and estimate measurements in problem solving.	
Learning Expectations	
The student will:	
4.1. apply appropriate techniques, tools, and formulas to determine measurements;	**Measurement:** Use geometric formulas when all necessary information is given
4.2. communicate the concepts and strategies being to estimate measurements;	
4.3. apply measurement concepts and relationships in geometric problem-solving situations.	
Student Performance Indicators	
The student is able to:	
• select units of appropriate size and type to measure angles, perimeter, area, surface area, and volume;	
• use concepts of length, area, and volume to estimate and solve real-world problems (i.e., parallelograms, triangles, right rectangular prisms, circles, right cylinders);	
• solve real-world problems involving rate/time/distance (i.e., d = rt);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
• use estimation to make predictions and determine reasonableness of results;	
• choose appropriate techniques and tools to measure quantities in order to meet specifications for precision and accuracy;	
• estimate to find the area of irregular and complex shapes.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
Students will understand and apply basic statistical and probability concepts in order to organize and analyze data and to make predictions.	
Learning Expectations	
The student will:	
5.1. choose, construct, and analyze appropriate graphical representations for a data set including pie charts, histograms, stem and leaf plots, and scatterplots;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
5.2. interpret a set of data using the appropriate measure of central tendency (mean, median, mode);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values Interpret and use information from figures, tables, and graphs
5.3. determine experimental and theoretical probabilities for simple experiments.	
Student Performance Indicators	
The student is able to:	
• determine the mean, median, mode, and range for a given set of data;	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values
• determine the probability of an event (i.e., rolling a die or spinning a spinner);	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event
• construct and interpret bar, circle, and line graphs of real-world data;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs Interpret and use information from figures, tables, and graphs
• determine the number of possible outcomes for simple experiments using lists, tree diagrams, or the multiplication counting principle;	**Probability, Statistics, & Data Analysis:** Apply counting techniques
• determine the median from a given stem-and-leaf plot;	**Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Manipulate data from tables and graphs

TABLE 2C

Tennessee Foundations I Standards, Expectations, and State Indicators	**EXPLORE Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
• make predictions based on data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• develop meaning for lines of best fit.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will develop number and operation sense needed to represent numbers and number relationships verbally, symbolically, and graphically and to compute fluently and make reasonable estimates in problem solving.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the subsets, elements, properties, and operations of the rational number system;	
1.2. connect physical, graphical, verbal, and symbolic representations of rational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Identify the graph of a linear inequality on the number line
1.3. order and compare rational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
1.4. informally describe and model the concept of additive and multiplicative inverses (e.g., opposites, reciprocals) in real life problem situations;	
1.5. apply number theory concepts (e.g., primes, composites, factors, divisibility ,and multiples) in mathematical problem situations;	**Numbers: Concepts & Properties:** Recognize one-digit factors of a number Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple Work with numerical factors
1.6. use rational numbers to represent real-world applications (e.g., probability, proportionality);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.7. use mathematical notations appropriately;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
1.8. select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with rational numbers, and evaluate the reasonableness of results;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.9. apply estimation strategies in computation and in problem solving.	
Student Performance Indicators	
The student is able to:	
• represent rational numbers in a variety of ways using concrete objects, pictures, the number line, and symbols;	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• compute fluently with whole numbers, fractions, decimals, and percent;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems
• compare rational numbers using the appropriate symbol (<, >, =);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• work flexibly with fractions, decimals, and percents in one- or two-step word problems;	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems
• represent quantitative relationships using ratios and proportions;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average

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TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• identify numbers less than 100 as prime or composite;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• give the prime factorization for a number less than 100;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with numerical factors Apply number properties involving prime factorization
• determine the greatest common factor and the least common multiple for up to three numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple
• apply order of operations in computing with rational numbers, using no more than two parentheses and exponents 1 and 2;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• calculate rates involving cost per unit to determine the best buy;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• demonstrate an understanding of percent in solving real-world problems;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• describe relationships among operations;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• use estimation strategies to select a reasonable solution to a real-world problem involving rational number computation;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

= Measured by PLAN Mathematics Test

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• develop, analyze, and explain methods for solving problems involving proportions (i.e., scaling, finding equivalent ratios);	
• express a monomial written in expanded form using exponents;	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents
• identify the opposite and the reciprocal of a given rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• determine square roots of perfect squares (<169).	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and solve real-world problems using appropriate representations.	
Learning Expectations	
The student will:	
2.1. recognize, extend, and create geometric, spatial, and numerical patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.2. solve problems in number theory, geometry, probability and statistics, and measurement and estimation using algebraic thinking;	
2.3. communicate the meaning of variables in algebraic expressions and equations;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
2.4. apply the concept of variable in simplifying algebraic expressions and solving equations;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Substitute whole numbers for unknown quantities to evaluate expressions Solve one-step equations having integer or decimal answers Evaluate algebraic expressions by substituting integers for unknown quantities Solve routine first-degree equations Perform straightforward word-to-symbol translations Add, subtract, and multiply polynomials
2.5. interpret graphs that depict real-world phenomena;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
2.6. model real-world phenomena using graphs.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Interpret and use information from graphs in the coordinate plane

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Student Performance Indicators	
The student is able to:	
• extend geometric, spatial, and numeric patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• generalize a variety of patterns with symbolic rules;	**Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
• represent situations and solve real-world problems using symbolic algebra;	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
• generate equivalent forms for simple algebraic expressions;	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations Combine like terms (e.g., $2x + 5x$)
• solve one-step linear equations involving integers;	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations
• evaluate a first-degree algebraic expression given values for up to two variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
• apply given formulas to solve real-world problems;	**Expressions, Equations, & Inequalities:** Evaluate algebraic expressions by substituting integers for unknown quantities **Measurement:** Use geometric formulas when all necessary information is given
• use a variety of representations to solve real-world problems (i.e., graphs, tables, equations);	**Probability, Statistics, & Data Analysis:** Perform a single computation using information from a table or chart Read tables and graphs Perform computations on data from tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• connect linear equations and the appropriate graphs of lines;	**Graphical Representations:** Match linear graphs with their equations*
• explain the meaning of intercept, slope, and rate of change in real-world problems.	**Graphical Representations:** Exhibit knowledge of slope Match linear graphs with their equations

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships.	
Learning Expectations	
The student will:	
3.1. apply geometric properties, formulas, and relationships to solve real-world problems;	**Measurement:** Use geometric formulas when all necessary information is given
3.2. communicate position using spatial sense with two-dimensional coordinate systems;	**Graphical Representations:** Locate points in the coordinate plane Interpret and use information from graphs in the coordinate plane
3.3. demonstrate an understanding of the properties and construction of geometric figures, including angles, parallel lines, perpendicular lines, triangles, circles, and quadrilaterals.	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point **Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
Student Performance Indicators	
The student is able to:	
• use ordered pairs to describe given points in a coordinate system;	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
• apply the given formula to determine the area or perimeter of a rectangle;	**Measurement:** Use geometric formulas when all necessary information is given
• find the missing length of a side, given two similar triangles;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure
• classify a quadrilateral, given its properties, as a square, a rectangle, a rhombus, a parallelogram, and/or a trapezoid;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• calculate the area of a circle, a triangle, a parallelogram, a rhombus, or a trapezoid given the appropriate formula;	**Measurement:** Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
• apply the Pythagorean Theorem in problem solving;	**Properties of Plane Figures:** Use the Pythagorean theorem
• determine and justify the missing angle measures, given the measure of one angle, when two parallel lines are cut by a transversal.	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Use several angle properties to find an unknown angle measure

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
Students will become familiar with the units and processes of measurement in order to use various tools, techniques, and formulas to determine and estimate measurements in problem solving.	
Learning Expectations	
The student will:	
4.1. apply appropriate techniques, tools, and formulas to determine measurements;	**Measurement:** Use geometric formulas when all necessary information is given
4.2. communicate the concepts and strategies being to estimate measurements;	
4.3. apply measurement concepts and relationships in geometric problem-solving situations.	
Student Performance Indicators	
The student is able to:	
• select units of appropriate size and type to measure angles, perimeter, area, surface area, and volume;	
• use concepts of length, area, and volume to estimate and solve real-world problems (i.e., parallelograms, triangles, right rectangular prisms, circles, right cylinders);	
• solve real-world problems involving rate/time/distance (i.e., d = rt);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
• use estimation to make predictions and determine reasonableness of results;	
• choose appropriate techniques and tools to measure quantities in order to meet specifications for precision and accuracy;	
• estimate to find the area of irregular and complex shapes.	**Graphical Representations:** Comprehend the concept of length on the number line Interpret and use information from graphs in the coordinate plane

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
Students will understand and apply basic statistical and probability concepts in order to organize and analyze data and to make predictions.	
Learning Expectations	
The student will:	
5.1. choose, construct, and analyze appropriate graphical representations for a data set including pie charts, histograms, stem and leaf plots, and scatterplots;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
5.2. interpret a set of data using the appropriate measure of central tendency (mean, median, mode);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values Interpret and use information from figures, tables, and graphs
5.3. determine experimental and theoretical probabilities for simple experiments.	
Student Performance Indicators	
The student is able to:	
• determine the mean, median, mode, and range for a given set of data;	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values
• determine the probability of an event (i.e., rolling a die or spinning a spinner);	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event
• construct and interpret bar, circle, and line graphs of real-world data;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs Interpret and use information from figures, tables, and graphs
• determine the number of possible outcomes for simple experiments using lists, tree diagrams, or the multiplication counting principle;	**Probability, Statistics, & Data Analysis:** Apply counting techniques
• determine the median from a given stem-and-leaf plot;	**Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Manipulate data from tables and graphs

TABLE 2D

Tennessee Foundations I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
• make predictions based on data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• develop meaning for lines of best fit.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane

TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically and will compute fluently and make reasonable estimates in problem solving.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the subsets, elements, properties, and operations of the real number system;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.2. demonstrate an understanding of the relative size of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.3. connect physical, graphical, verbal, and symbolic representations of real numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
1.4. informally describe and model the concept of inverse (e.g., opposites, reciprocals, and squares and square roots);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with squares and square roots of numbers
1.5. demonstrate an understanding of division involving zero;	**Numbers: Concepts & Properties:** Determine when an expression is undefined
1.6. describe, model, and apply inverse operations;	
1.7. apply number theory concepts (e.g., primes, factors, divisibility and multiples) in mathematical problem situations;	**Numbers: Concepts & Properties:** Recognize one-digit factors of a number Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple Work with numerical factors

= Measured by PLAN Mathematics Test

TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
1.8. connect physical, graphical, verbal, and symbolic representations of absolute value;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
1.9. use real numbers to represent real-world applications (e.g., rate of change, probability, and proportionality);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.10. select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with real numbers, and evaluate the reasonableness of results;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.11. communicate the concepts and strategies being used in estimation and computation;	
1.12. perform operations on simple algebraic expressions, and informally justify the procedures chosen;	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Add, subtract, and multiply polynomials
1.13. use estimation to make predictions and determine reasonableness of computational results;	
1.14. use mathematical notations appropriately.	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)
State Performance Indicators	
The student is able to:	
• choose the correct prime factorization of a two-digit composite whole number;	**Numbers: Concepts & Properties:** Recognize one-digit factors of a number Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with numerical factors Apply number properties involving even/odd numbers and factors/multiples

TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• compare a fraction to a decimal using less than, greater than, and equals symbols;	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fraction
• multiply a fraction by a multiple of its denominator (denominator less than or equal to 25);	**Basic Operations & Applications:** Solve some routine two-step arithmetic problems **Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with numerical factors
• apply order of operations to evaluate numerical expressions (whole numbers only; no exponents or grouping symbols;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• identify the opposite of any rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• select the best estimate for the coordinate of a given point on a number line (rationals);	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• choose an equivalent exponential form of a one-variable monomial given in factored form (only first-degree variables with positive integral coefficients);	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$)
• multiply an integer by a one-variable binomial;	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add, subtract, and multiply polynomials
• select a reasonable solution for a real-world division problem in which the remainder must be considered;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

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TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• apply order of operations to evaluate numerical expressions containing whole numbers, exponents, and no more than two sets of grouping symbols;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select ratios and proportions to represent real-world problems such as scale drawings and samplings (all ratios are positive integers to positive integers).	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and solve real-world problems using appropriate materials and representations.	
Learning Expectations	
The student will:	
2.1. recognize, extend, and create geometric, spatial, and numerical patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.2. analyze mathematical patterns related to algebra and geometry in real-world problem solving;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.3. solve problems in number theory, geometry, probability and statistics, and measurement and estimation using algebraic thinking and symbolism (attention given to solving linear equations);	
2.4. communicate the meaning of variables in algebraic expressions, equations, and inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
2.5. interpret the results of algebraic procedures;	
2.6. apply the concept of variable in simplifying algebraic expressions, solving equations, and solving inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Substitute whole numbers for unknown quantities to evaluate expressions Solve one-step equations having integer or decimal answers Solve routine first-degree equations Perform straightforward word-to-symbol translations Add, subtract, and multiply polynomials Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign
2.7. interpret graphs that depict real-world phenomena;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs

TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
2.8. model real-world phenomena using graphs.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
State Performance Indicators	
The student is able to:	
• extend a pattern of geometric figures;	
• extend a numerical pattern using only whole numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• solve a one-step linear equation with a variable on only one side of the equation (integral coefficients and constants);	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations
• solve a two-step linear equation with a variable on only one side of the equation (integral coefficients and constants);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations
• translate a one-variable verbal expression into an algebraic expression (no more than two operations);	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations
• evaluate a first-degree algebraic expression given the values for the variables (up to three variables);	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
• select the appropriate linear graph that models a real-world situation or vice versa;	**Graphical Representations:** Match linear graphs with their equations
• select the number line graph that models a given one-step linear inequality (variables may not have negative coefficients);	**Graphical Representations:** Match number line graphs with solution sets of linear inequalities
• simplify a first-degree algebraic expression by combining like terms (integral coefficients and constants).	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$)

TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships.	
Learning Expectations	
The student will:	
3.1. analyze relationships among corresponding parts of similar or congruent geometric figures;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
3.2. apply geometric properties, formulas, and relationships to solve real-world problems;	**Measurement:** Use geometric formulas when all necessary information is given
3.3. use inductive reasoning to make conjectures;	
3.4. communicate position using spatial sense with two-dimensional coordinate system;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
3.5. demonstrate an understanding of transformations of geometric figures;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
3.6. apply the Pythagorean Theorem in problem solving;	**Properties of Plane Figures:** Use the Pythagorean theorem
3.7. name, analyze, and describe the properties of various polygons.	
State Performance Indicators	
The student is able to:	
• determine the perimeter of any geometric figure;	**Measurement:** Compute the perimeter of polygons when all side lengths are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given
• identify the coordinates for a given point;	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
• find the missing length of a side given two similar triangles;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• use the Pythagorean Theorem to determine the length of a missing side of a right triangle (no radicals).	**Graphical Representations:** Match number line graphs with solution sets of linear inequalities

TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
Students will become familiar with the units and processes of measurement in order to use various tools, techniques, and formulas to determine and estimate measurements in problem solving.	
Learning Expectations	
The student will:	
4.1. communicate the concepts and strategies used to measure and to estimate measurements;	
4.2. use concepts of length and area, including surface area and volume, to estimate and solve real-world problems (e.g., parallelograms, triangles, right rectangular prisms, circles, right cylinders, spheres, and pyramids);	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
4.3. apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
4.4. choose appropriate techniques and tools to measure quantities in order to meet specifications for precision and accuracy;	
4.5. demonstrate an understanding of rates and other derived and indirect measurements (e.g., velocity, miles per hr, rpm, and cost per unit).	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
State Performance Indicators	
The student is able to:	
• apply the given formula to determine the area of a rectangular figure with rational dimensions.	**Measurement:** Use geometric formulas when all necessary information is given
• calculate the cost per unit to determine the best buy (no more than four samples).	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
• choose the correct area representation of the product of an integer and a one-variable first-degree binomial.	

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TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
Students will interpret a given set of data, including analyzing the use, misuse, and abuse of data; choose, construct, and analyze appropriate graphical representations for a data set; use technology in data collection and analysis; and apply theoretical and experimental probability to analyze the likelihood of an event.	
Learning Expectations	
The student will:	
5.1. interpret a set of data using the appropriate measure of central tendency (mean, median, mode) and the appropriate measure of dispersion (e.g., quartiles, range);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the missing data value, given the average and all data values but one Manipulate data from tables and graphs Interpret and use information from figures, tables, and graphs
5.2. choose, construct, and analyze appropriate graphical representations for a data set including pie charts, histograms, stem-and-leaf plots, scatterplots, and box plots;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
5.3. apply appropriate technology in data collection and analysis;	
5.4. apply theoretical and experimental probability to analyze the likelihood of an event;	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement Determine the probability of a simple event Compute straightforward probabilities for common situations
5.5. use simulations to estimate probability;	**Probability, Statistics, & Data Analysis:** Compute a probability when the event and/or sample space are not given or obvious
5.6. analyze the validity of statistical conclusions and the use, misuse, and abuse of data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
5.7. apply counting principles of permutations and combinations using appropriate technology.	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques Apply counting techniques
State Performance Indicators	
The student is able to:	
• determine the mean of a given set of data (no more than five one- or two-digit numbers);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers

TABLE 2E

Tennessee Foundations II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
• determine the number of possible outcomes for a simple experiment using a list, tree diagram, or the multiplication counting principle;	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques
• determine the probability of a single event (i.e., rolling a die or using a spinner);	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event
• interpret bar graphs representing real-world data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• interpret circle graphs (pie charts) representing real-world data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• determine the median from a given stem-and-leaf plot;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• determine the median of a given set of real-world data (even number of data).	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs

TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the subsets, properties, and operations of the real number system;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.2. demonstrate an understanding of the relative size of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.3. articulate, model, and apply the concept of inverse (e.g., opposites, reciprocals, and powers and roots);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply number properties involving positive/negative numbers
1.4. describe, model, and apply inverse operations;	
1.5. apply number theory concepts (e.g., primes, factors, divisibility and multiples) in mathematical problem solving;	**Numbers: Concepts & Properties:** Recognize one-digit factors of a number Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple Work with numerical factors
1.6. connect graphical and symbolic representations of absolute value;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Interpret and use information from graphs in the coordinate plane

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TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
1.7. use real numbers to represent real-world applications (e.g., slope, rate of change, probability, and proportionality);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.8. use a variety of notations appropriately (e.g. exponential, functional, square root);	
1.9. select and apply an appropriate method (i.e., mental mathematics, paper and pencil, or technology) for computing with real numbers, and evaluate the reasonableness of results;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.10. perform operations on algebraic expressions and informally justify the procedures chosen;	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Multiply two binomials Add, subtract, and multiply polynomials Manipulate expressions and equations
1.11. perform operations on matrices in real-world problem solving (i.e., addition, subtraction, and scalar multiplication).	
State Performance Indicators	
The student is able to:	
• select the best estimate for the coordinate of a given point on a number line (only rational);	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• identify the opposite of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• determine the square root of a perfect square less than 169;	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
• use exponents to simplify a monomial written in expanded form without the use of parenthesis;	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents **Expressions, Equations, & Inequalities:** Add, subtract, and multiply polynomials

TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• apply order of operations when computing with integers using no more than two sets of grouping symbols and exponents 1 and 2;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select a reasonable solution for a real-world division problem in which the remainder must be considered;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• order a given set of rational numbers (both fraction and decimal notations);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• identify the reciprocal of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• add and subtract algebraic expressions;	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions
• multiply two polynomials with each factor having no more than two terms;	**Expressions, Equations, & Inequalities:** Multiply two binomials Add, subtract, and multiply polynomials
• use estimation to determine a reasonable solution for a tedious arithmetic computation;	
• select ratios and proportions to represent real-world problems (e.g. scale drawings, sampling, etc.);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
• apply the concept of slope to represent rate of change in a real-world situation.	**Graphical Representations:** Exhibit knowledge of slope

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TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and functions using appropriate materials and representations in real world problem solving.	
Learning Expectations	
The student will:	
2.1. recognize, analyze, extend, and create a variety of patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.2. use algebraic thinking to generalize a pattern by expressing the pattern in functional notation;	
2.3. solve linear systems using a variety of techniques;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
2.4. communicate the meaning of variables in algebraic expressions, equations, and inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
2.5. identify and represent a variety of functions;	
2.6. apply and interpret rates of change from graphical and numerical data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Exhibit knowledge of slope
2.7. analyze graphs to describe the behavior of functions;	
2.8. interpret results of algebraic procedures;	
2.9. apply the concept of variable in simplifying algebraic expressions, solving equations, and solving inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Substitute whole numbers for unknown quantities to evaluate expressions Solve one-step equations having integer or decimal answers Evaluate algebraic expressions by substituting integers for unknown quantities Solve routine first-degree equations Perform straightforward word-to-symbol translations Add, subtract, and multiply polynomials Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign

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TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
2.10. interpret graphs that depict real-world phenomena;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
2.11. model real-world phenomena using functions and graphs;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
2.12. articulate and apply algebraic properties in symbolic manipulation;	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
2.13. analyze relationships which can and which cannot be represented by a function;	
2.14. graph inequalities and interpret graphs of inequalities;	**Graphical Representations:** Identify the graph of a linear inequality on the number line Match number line graphs with solution sets of linear inequalities
2.15. describe the domain and range of functions and articulate restrictions imposed either by the operations or by the real-life situations which the functions represent;	
2.16. describe the transformation of the graph that occurs when coefficients and/or constants of the corresponding linear equations are changed;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
2.17. find and represent solutions of quadratic equations.	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Solve quadratic equations **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
State Performance Indicators	
The student is able to:	
• extend a geometric pattern;	
• extend a numerical pattern;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• translate a verbal expression into an algebraic expression or vice versa;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations
• evaluate a first degree algebraic expression given values for one or more variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities

TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• solve one- and two-step linear equations using integers (with integral coefficients and constants);	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations
• select the algebraic notation which generalizes the pattern represented by data in a given table;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings
• translate a verbal sentence into an algebraic equation or vice versa;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations
• select the graph that represents a given linear function expressed in slope-intercept form;	**Graphical Representations:** Match linear graphs with their equations
• solve multi-step linear equations (more than two steps, variables on one side of the equation with no use of parentheses);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• solve multi-step linear equations (more than two steps, with variables on both sides of the equation with no use of parentheses);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• solve multi-step linear equations (more than two steps, with one set of parentheses on each side of the equation);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• select the linear graph that models the given real-world situation described in a narrative (no data set given);	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• select the linear graph that models the given real-world situation described in a tabular set of data or vice versa;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane

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TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• evaluate an algebraic expression given values for one or more variables using grouping symbols and/or exponents less than four;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
• determine the slope from the graph of a linear equation (no labeled points);	**Graphical Representations:** Exhibit knowledge of slope
• apply the concept of rate of change to solve real-world problems;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select the appropriate graphical representation on the coordinate plane of a given linear inequality (given in standard form or slope-intercept form);	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• select the non-linear graph that models the given real-world situation or vice versa;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• identify the graphical representation of the solution to a one variable inequality on a number line;	**Graphical Representations:** Identify the graph of a linear inequality on the number line Interpret and use information from graphs in the coordinate plane
• solve multi-step linear inequalities in real-world situations;	**Expressions, Equations, & Inequalities:** Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign
• recognize the graphical transformation that occurs when coefficients and/or constants of the corresponding linear equations are changed;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• determine the domain and/or range of a function represented by the graph of real-world situations;	
• select the system of equations that could be used to solve a given real-world problem;	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings
• find the solution to a quadratic equation given in standard form (integral solutions and a leading coefficient of one);	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
• select the solution to a quadratic equation given solutions represented in graphical form (integral solutions and a leading coefficient of one);	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane

TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• select one of the factors (e.g., x + 3) of a quadratic equation (integral solutions and a leading coefficient of one);	**Expressions, Equations, & Inequalities:** Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)
• select the discriminant of a quadratic equation (integral solutions and a leading coefficient of one).	

TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
The student will investigate, model, and apply geometric properties and relationships.	
Learning Expectations	
The student will:	
3.1. apply geometric properties, formulas, and relationships to solve real-world problems;	**Measurement:** Use geometric formulas when all necessary information is given
3.2. solve problems using the midpoint formula;	**Graphical Representations:** Find the midpoint of a line segment
3.3. apply right triangle relationships including the Pythagorean Theorem and the distance formula;	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem
State Performance Indicators	
The student is able to:	
• identify ordered pairs in the coordinate plane;	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
• apply the given Pythagorean Theorem to a real life problem illustrated by a diagram (no radicals in answer);	**Properties of Plane Figures:** Use the Pythagorean theorem
• apply proportion and the concepts of similar triangles to find the length of a missing side of a triangle;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• calculate the distance between two points given the Pythagorean Theorem and the distance formula.	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem

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TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
The student will apply appropriate tools and units of measurement to produce reasonable results.	
Learning Expectations	
The student will:	
4.1. use concepts of length, area, and volume to estimate and solve real-world problems;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure
4.2. apply and communicate measurement concepts and relationships in algebraic and geometric problem-solving situations;	
4.3. demonstrate an understanding of rates and other derived and indirect measurements (e.g., velocity, miles per hour, revolutions per minute, cost per unit);	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
4.4. make decisions about units, scales, and measurement tools that are appropriate for problem situations involving measurement;	
4.5. analyze precision, accuracy, tolerance, and approximate error in measurement situations.	
State Performance Indicators	
The student is able to:	
• estimate the area of irregular geometric figures on a grid;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• calculate rates involving cost per unit to determine the best buy (no more than four samples);	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
• apply the given formula to determine the area or perimeter of a rectangle;	**Measurement:** Use geometric formulas when all necessary information is given
• apply the given formula to find the area of a circle, the circumference of a circle, or the volume of a rectangular solid;	**Measurement:** Use geometric formulas when all necessary information is given
• select the area representation for a given product of two one-variable binomials with positive constants and coefficients.	

TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
The student will collect, organize, represent, and interpret data and model situations to determine theoretical and experimental probabilities.	
Learning Expectations	
The student will:	
5.1. collect, represent, and describe linear and nonlinear data sets developed from the real world;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs
5.2. make predictions from a linear data set using a line of best fit;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
5.3. interpret a set of data using the appropriate measure of central tendency;	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values Interpret and use information from figures, tables, and graphs
5.4. choose, construct, and analyze appropriate graphical representations for a data set;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
5.5. understand the concept of random sampling;	
5.6. apply counting principles of permutations and combinations using appropriate technology;	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques Apply counting techniques
5.7. model situations to determine theoretical and experimental probabilities.	
State Performance Indicators	
The student is able to:	
• determine the mean (average) of a given set of real-world data (no more than five two-digit numbers);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers
• interpret bar graphs representing real-world data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs

= Measured by PLAN Mathematics Test

TABLE 2F

Tennessee Algebra I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
The student will collect, organize, represent, and interpret data and model situations to determine theoretical and experimental probabilities.	
• interpret circle graphs (pie charts) representing real-world data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• choose the matching linear graph given a set of ordered pairs;	**Graphical Representations:** Locate points in the coordinate plane
• make a prediction from the graph of a real-world linear data set;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• determine the median for a given set of real-world data (even number of data);	
• compute the probability of a simple compound event (2 independent events, no more than 6 possibilities per event).	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, order, represent, and graph rational and irrational numbers, including absolute value notation.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the relative size of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.2. choose and use appropriate notations for rational and irrational numbers, including graphic representations;	
1.3. demonstrate an understanding of absolute value.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
State Performance Indicators	
The student is able to:	
• order a set of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• find an integral power of a positive rational number (exponents 1–3);	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents
• use absolute value to express the distance between two points on a number line and vice versa;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Comprehend the concept of length on the number line
• simplify a radical (radicand less than 1000);	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
• match a given irrational number to the appropriate point on a number line and vice versa (e.g., $\sqrt{2}$, $\sqrt{30}$, pi).	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will recognize, extend, create, and analyze a variety of geometric, spatial, and numerical patterns; solve real-world problems related to algebra and geometry; and use properties of various geometric figures to analyze and solve problems.	
Learning Expectations	
The student will:	
2.1. recognize, extend, and create geometric, spatial, and numerical patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.2. analyze mathematical patterns related to algebra and geometry in real-world problem solving;	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers **Probability, Statistics, & Data Analysis:** Distinguish between mean, median, and mode for a list of numbers
2.3. solve problems connecting geometry with number theory, probability and statistics, and measurement and estimation using algebraic thinking and symbolism;	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts **Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
2.4. apply coordinate geometry to analyze and solve problems;	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
2.5. apply ratio and proportion to problems involving similar figures.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
State Performance Indicators	
The student is able to:	
• extend or find missing element(s) in a geometric pattern;	

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• solve multistep linear equations to find length, width, perimeter, and area of geometric figures;	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations Write expressions, equations, and inequalities for common algebra settings
• apply the concept of rate of change to solve a real-world problem given a pattern of data;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• determine the slope given a graph of a linear equation and vice versa;	**Graphical Representations:** Determine the slope of a line from points or equations
• determine the distance, midpoint, or slope when given the coordinates of two points (answers must be given as decimals to the nearest hundredth);	**Graphical Representations:** Determine the slope of a line from points or equations Find the midpoint of a line segment Use the distance formula
• determine the equation of a line parallel or perpendicular to a given line, from given information (e.g., equations of lines, graphs of lines, or two points);	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
• apply ratio and proportion to solve real-world problems involving polygons (e.g., scale drawings, similar figures);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Measurement:** Use scale factors to determine the magnitude of a size change
• apply the triangle inequality property to determine which sets of side lengths determine a triangle;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• determine the perimeter, area, or volume given the ratio of two similar polygons or rectangular solids;	**Basic Operations & Applications:** Solve word problems containing several rates, proportions, or percentages **Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Use scale factors to determine the magnitude of a size change
• apply the Triangle Sum Theorem or Exterior Angle Theorem to determine the measures of the angles of a given triangle with the angle measures expressed algebraically;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

= Measured by PLAN Mathematics Test

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• determine the equation of a circle given coordinates or the graph of the circle (e.g., the center, the endpoints of the diameter).	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships and use indirect reasoning to make conjectures; deductive reasoning to draw conclusions; and both inductive and deductive reasoning to establish the truth of statements.	
Learning Expectations	
The student will:	
3.1. analyze relationships among corresponding parts of similar or congruent geometric figures;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Draw conclusions based on a set of conditions
3.2. apply geometric properties of solids, polygons, and circles to solve real-world problems;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
3.3. justify conclusions and solve problems using deductive reasoning;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
3.4. use inductive reasoning to make conjectures and solve problems;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
3.5. communicate position using spatial sense with two- and three-dimensional coordinate systems;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
3.6. demonstrate an understanding of transformations of geometric figures (i.e., translations, rotations, dilations, and reflections);	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
3.7. apply right triangle relationships including the Pythagorean Theorem, the distance formula, and trigonometric ratios;	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem **Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Apply basic trigonometric ratios to solve right-triangle problems
3.8. describe geometric objects and recognize minimal conditions necessary to define the geometric objects;	
3.9. apply reflexive, transitive, and symmetric properties when appropriate;	

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
3.10. demonstrate understanding of geometric properties of congruence, similarity, perpendicularity, and parallelism;	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point **Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
3.11. recognize and articulate relationships among families of geometric figures (e.g., quadrilaterals, prisms);	
3.12. use logic and proof to establish the validity of conjectures and theorems.	
State Performance Indicators	
The student is able to:	
• identify corresponding parts of similar and congruent geometric figures given a diagram;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine the length of a missing side in a right triangle when given two sides (answers must be given as simplified radicals);	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem **Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Apply basic trigonometric ratios to solve right-triangle problems
• identify properties of plane figures from information given in a diagram;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• identify chords, inscribed angles, or central angles of circles given a diagram;	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle
• determine congruence or similarity relations between triangles or quadrilaterals given a diagram;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine whether a plane figure has been translated, dilated, reflected, or rotated given a diagram and vice versa;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

= Measured by PLAN Mathematics Test

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• solve problems involving complementary, supplementary, congruent, vertical, or adjacent angles given angle measures expressed algebraically;	**Properties of Plane Figures:** Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
• determine the trigonometric ratio for a right triangle needed to solve a real-world problem given a diagram;	
• find a missing side length in a 30-60-90 or 45-45-90 degree triangle without rationalizing the denominator;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• apply properties of quadrilaterals to solve a real-world problem given a diagram (opposite sides and angles, consecutive sides and angles, or diagonals);	**Properties of Plane Figures:** Use trigonometric concepts and basic identities to solve problems
• solve real-world problems involving measures of interior or exterior angles of regular polygons;	**Properties of Plane Figures:** Use trigonometric concepts and basic identities to solve problems
• identify the appropriate segment of a triangle given a diagram and vice versa (i.e., median, altitude, angle bisector, perpendicular bisector);	
• determine which three-dimensional solid is represented by a given net and vice versa (two-dimensional drawing);	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• determine the area of indicated regions involving circles, squares, rectangles, and/or triangles;	**Measurement:** Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
• justify triangle congruence given a diagram (i.e., ASA, SSS, AAS, SAS, or Hypotenuse/ Leg);	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• determine if a triangle is a right triangle given the length of all the sides of a triangle;	**Properties of Plane Figures:** Use the Pythagorean theorem Draw conclusions based on a set of conditions
• solve problems involving the properties of arcs, chords, tangents, or secants;	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• find the area of a sector of a circle given a diagram.	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
Students will apply appropriate units of measurement; develop effective estimation and computation strategies for solving real world problems involving length, area, and volume; and choose appropriate techniques and tools to measure quantities in order to meet specifications for precision, accuracy, and tolerance.	
Learning Expectations	
The student will:	
4.1. use concepts of length, area, and volume to estimate and solve real-world problems;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
4.2. apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
4.3. choose appropriate techniques and tools to measure quantities in order to meet specifications for precision, accuracy, and tolerance.	
State Performance Indicators	
The student is able to:	
• determine the perimeter or area of a triangle or rectangle when the dimensions are given as first degree binomials in one variable;	**Measurement:** Compute the area of triangles and rectangles when one or more additional simple steps are required
• solve real world problems involving perimeter or area of three or four sided plane figures;	**Measurement:** Compute the area and perimeter of triangles and rectangles in simple problems Compute the area of triangles and rectangles when one or more additional simple steps are required
• determine the volume or surface area of a rectangular solid or cylinder in a real-world situation;	**Measurement:** Use geometric formulas when all necessary information is given
• determine whether a reading falls within an acceptable tolerance range.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs

TABLE 2G

Tennessee Geometry Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
The student will investigate, explore, and apply geometric representations to calculate theoretical probability; and will use data from geometric figures to investigate relationships.	
Learning Expectations	
The student will:	
5.1. apply geometric representations to calculate theoretical probability;	
5.2. use data analysis to investigate geometric relationships.	
State Performance Indicators	
The student is able to:	
• make a prediction from a geometric representation of a real-world data set;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• determine the probability of an event represented as a subset of the area of a two-dimensional geometric figure.	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, order, represent, and graph rational and irrational numbers, including absolute value notation.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the relative size of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.2. choose and use appropriate notations for rational and irrational numbers, including graphic representations;	
1.3. demonstrate an understanding of absolute value.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
State Performance Indicators	
The student is able to:	
• order a set of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• find an integral power of a positive rational number (exponents 1–3);	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents
• use absolute value to express the distance between two points on a number line and vice versa;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Comprehend the concept of length on the number line
• simplify a radical (radicand less than 1000);	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
• match a given irrational number to the appropriate point on a number line and vice versa (e.g., $\sqrt{2}$, $\sqrt{30}$, pi).	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will recognize, extend, create, and analyze a variety of geometric, spatial, and numerical patterns; solve real-world problems related to algebra and geometry; and use properties of various geometric figures to analyze and solve problems.	
Learning Expectations	
The student will:	
2.1. recognize, extend, and create geometric, spatial, and numerical patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.2. analyze mathematical patterns related to algebra and geometry in real-world problem solving;	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers **Probability, Statistics, & Data Analysis:** Distinguish between mean, median, and mode for a list of numbers
2.3. solve problems connecting geometry with number theory, probability and statistics, and measurement and estimation using algebraic thinking and symbolism;	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts **Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
2.4. apply coordinate geometry to analyze and solve problems;	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
2.5. apply ratio and proportion to problems involving similar figures.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
State Performance Indicators	
The student is able to:	
• extend or find missing element(s) in a geometric pattern;	

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• solve multistep linear equations to find length, width, perimeter, and area of geometric figures;	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations Write expressions, equations, and inequalities for common algebra settings
• apply the concept of rate of change to solve a real-world problem given a pattern of data;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• determine the slope given a graph of a linear equation and vice versa;	**Graphical Representations:** Determine the slope of a line from points or equations
• determine the distance, midpoint, or slope when given the coordinates of two points (answers must be given as decimals to the nearest hundredth);	**Graphical Representations:** Determine the slope of a line from points or equations Find the midpoint of a line segment Use the distance formula
• determine the equation of a line parallel or perpendicular to a given line, from given information (e.g., equations of lines, graphs of lines, or two points);	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
• apply ratio and proportion to solve real-world problems involving polygons (e.g., scale drawings, similar figures);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Measurement:** Use scale factors to determine the magnitude of a size change
• apply the triangle inequality property to determine which sets of side lengths determine a triangle;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• determine the perimeter, area, or volume given the ratio of two similar polygons or rectangular solids;	**Basic Operations & Applications:** Solve word problems containing several rates, proportions, or percentages **Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Use scale factors to determine the magnitude of a size change
• apply the Triangle Sum Theorem or Exterior Angle Theorem to determine the measures of the angles of a given triangle with the angle measures expressed algebraically;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

= Measured by the ACT Mathematics Test

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• determine the equation of a circle given coordinates or the graph of the circle (e.g., the center, the endpoints of the diameter).	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships and use indirect reasoning to make conjectures; deductive reasoning to draw conclusions; and both inductive and deductive reasoning to establish the truth of statements.	
Learning Expectations	
The student will:	
3.1. analyze relationships among corresponding parts of similar or congruent geometric figures;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Draw conclusions based on a set of conditions
3.2. apply geometric properties of solids, polygons, and circles to solve real-world problems;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
3.3. justify conclusions and solve problems using deductive reasoning;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
3.4. use inductive reasoning to make conjectures and solve problems;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
3.5. communicate position using spatial sense with two- and three-dimensional coordinate systems;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
3.6. demonstrate an understanding of transformations of geometric figures (i.e., translations, rotations, dilations, and reflections);	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
3.7. apply right triangle relationships including the Pythagorean Theorem, the distance formula, and trigonometric ratios;	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem **Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Apply basic trigonometric ratios to solve right-triangle problems
3.8. describe geometric objects and recognize minimal conditions necessary to define the geometric objects;	
3.9. apply reflexive, transitive, and symmetric properties when appropriate;	

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
3.10. demonstrate understanding of geometric properties of congruence, similarity, perpendicularity, and parallelism;	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point **Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
3.11. recognize and articulate relationships among families of geometric figures (e.g., quadrilaterals, prisms);	
3.12. use logic and proof to establish the validity of conjectures and theorems.	
State Performance Indicators	
The student is able to:	
• identify corresponding parts of similar and congruent geometric figures given a diagram;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine the length of a missing side in a right triangle when given two sides (answers must be given as simplified radicals);	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem **Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Apply basic trigonometric ratios to solve right-triangle problems
• identify properties of plane figures from information given in a diagram;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• identify chords, inscribed angles, or central angles of circles given a diagram;	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle
• determine congruence or similarity relations between triangles or quadrilaterals given a diagram;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine whether a plane figure has been translated, dilated, reflected, or rotated given a diagram and vice versa;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

= Measured by the ACT Mathematics Test

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• solve problems involving complementary, supplementary, congruent, vertical, or adjacent angles given angle measures expressed algebraically;	**Properties of Plane Figures:** Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
• determine the trigonometric ratio for a right triangle needed to solve a real-world problem given a diagram;	**Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
• find a missing side length in a 30-60-90 or 45-45-90 degree triangle without rationalizing the denominator;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• apply properties of quadrilaterals to solve a real-world problem given a diagram (opposite sides and angles, consecutive sides and angles, or diagonals);	**Properties of Plane Figures:** Use trigonometric concepts and basic identities to solve problems
• solve real-world problems involving measures of interior or exterior angles of regular polygons;	**Properties of Plane Figures:** Use trigonometric concepts and basic identities to solve problems
• identify the appropriate segment of a triangle given a diagram and vice versa (i.e., median, altitude, angle bisector, perpendicular bisector);	
• determine which three-dimensional solid is represented by a given net and vice versa (two-dimensional drawing);	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• determine the area of indicated regions involving circles, squares, rectangles, and/or triangles;	**Measurement:** Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
• justify triangle congruence given a diagram (i.e., ASA, SSS, AAS, SAS, or Hypotenuse/ Leg);	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• determine if a triangle is a right triangle given the length of all the sides of a triangle;	**Properties of Plane Figures:** Use the Pythagorean theorem Draw conclusions based on a set of conditions
• solve problems involving the properties of arcs, chords, tangents, or secants;	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• find the area of a sector of a circle given a diagram.	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
Students will apply appropriate units of measurement; develop effective estimation and computation strategies for solving real world problems involving length, area, and volume; and choose appropriate techniques and tools to measure quantities in order to meet specifications for precision, accuracy, and tolerance.	
Learning Expectations	
The student will:	
4.1. use concepts of length, area, and volume to estimate and solve real-world problems;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
4.2. apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
4.3. choose appropriate techniques and tools to measure quantities in order to meet specifications for precision, accuracy, and tolerance.	
State Performance Indicators	
The student is able to:	
• determine the perimeter or area of a triangle or rectangle when the dimensions are given as first degree binomials in one variable;	**Measurement:** Compute the area of triangles and rectangles when one or more additional simple steps are required
• solve real world problems involving perimeter or area of three or four sided plane figures;	**Measurement:** Compute the area and perimeter of triangles and rectangles in simple problems Compute the area of triangles and rectangles when one or more additional simple steps are required
• determine the volume or surface area of a rectangular solid or cylinder in a real-world situation;	**Measurement:** Use geometric formulas when all necessary information is given
• determine whether a reading falls within an acceptable tolerance range.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs

TABLE 2H

Tennessee Geometry Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
The student will investigate, explore, and apply geometric representations to calculate theoretical probability; and will use data from geometric figures to investigate relationships.	
Learning Expectations	
The student will:	
5.1. apply geometric representations to calculate theoretical probability;	
5.2. use data analysis to investigate geometric relationships.	
State Performance Indicators	
The student is able to:	
• make a prediction from a geometric representation of a real-world data set;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• determine the probability of an event represented as a subset of the area of a two-dimensional geometric figure.	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the elements, subsets, properties, and operations of rational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.2. demonstrate understanding of positive integer exponents and perform operations with expressions involving exponents;	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents **Expressions, Equations, & Inequalities:** Add, subtract, and multiply polynomials
1.3. connect physical, graphical, verbal, and symbolic representations of rational numbers;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
1.4. connect physical, graphical, verbal, and symbolic representations of absolute value;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
1.5. articulate, model, and apply the concept of inverse (i.e., opposites and reciprocals);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply number properties involving positive/negative numbers
1.6. describe, model, and apply inverse operations;	
1.7. perform operations on algebraic expressions and informally justify the procedures chosen;	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Multiply two binomials Add, subtract, and multiply polynomials Manipulate expressions and equations
1.8. apply matrix addition, subtraction, and scalar multiplication in real-world problems (e.g., inventory), using appropriate technology;	
1.9. use a variety of notations appropriately (e.g., exponential, functional, square root);	

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
1.10 select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with real numbers, and use estimation to evaluate the reasonableness of the result.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
Student Performance Indicators	
The student is able to:	
• select the best estimate for the coordinate of a given point on a number line (only rational);	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• identify the opposite of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• determine the square root of a perfect square less than 169;	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
• use exponents to simplify a monomial written in expanded form;	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents **Expressions, Equations, & Inequalities:** Add, subtract, and multiply polynomials
• apply order of operations when computing with integers using no more than two sets of grouping symbols and exponents 1 and 2;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select a reasonable solution for a real-world division problem in which the remainder must be considered;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• compare and contrast the GCF and LCM of a set of numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple
• probe the relationships among various subsets of the real number system;	

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• compare and contrast the GCF and LCM of a set of algebraic expressions;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple
• order a given set of rational numbers (both fraction and decimal notations);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• identify the reciprocal of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• add and subtract algebraic expressions;	**Expressions, Equations, & Inequalities:** Add and subtract simple algebraic expressions
• multiply two polynomials with each factor having no more than two terms;	**Expressions, Equations, & Inequalities:** Multiply two binomials Add, subtract, and multiply polynomials
• use estimation to determine a reasonable solution for a tedious arithmetic computation;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select ratios and proportions to represent real-world problems (e.g. scale drawings, sampling);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
• perform operations on matrices using appropriate technology (addition, subtraction, and scalar multiplication);	
• apply the concept of slope to represent rate of change in a real-world situation;	**Graphical Representations:** Determine the slope of a line from points or equations Interpret and use information from graphs in the coordinate plane
• scrutinize approximate values of real numbers such as pi and the square root of two.	

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and functions using appropriate materials and representations in real world problem solving.	
Learning Expectations	
The student will:	
2.1. communicate the meaning of variables in algebraic expressions, equations, and inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
2.2. identify dependent and independent variables in real-world situations;	
2.3. apply the concept of variable in simplifying algebraic expressions, solving equations, and solving inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Substitute whole numbers for unknown quantities to evaluate expressions Solve one-step equations having integer or decimal answers Evaluate algebraic expressions by substituting integers for unknown quantities Solve routine first-degree equations Perform straightforward word-to-symbol translations Add, subtract, and multiply polynomials Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign
2.4. represent the solution set linear equations and inequalities in one variable symbolically, graphically, and verbally;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
2.5. interpret graphs that depict real-world phenomena;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
2.6. model real-world phenomena using graphs;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Calculate or use a weighted average
2.7. represent functions with equations, graphs, tables, and words;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
2.8. understand and apply slope as rate of change;	**Graphical Representations:** Manipulate data from tables and graphs Calculate or use a weighted average
2.9. solve real-world problems represented by linear functions and interpret the slope and intercepts;	**Graphical Representations:** Calculate or use a weighted average
2.10. solve systems of two equations in two unknowns using a variety of techniques;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
2.11. recognize and extend numerical, geometric, and spatial patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.12. describe the domain and range of functions imposed either by operations or by real-life situations that the functions represent;	
2.13. describe the transformation of the graph that occurs when coefficients and/or constants of the corresponding linear equation are changed;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
2.14. generalize numerical, geometric patterns verbally and symbolically.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving
Student Performance Indicators	
The student is able to:	
• extend a geometric pattern;	
• extend a numerical pattern;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• translate a verbal expression into an algebraic expression;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
• evaluate a first degree algebraic expression given values for one or more variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
• solve one- and two-step linear equations using integers (with integral coefficients and constants);	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations Solve real-world problems using first-degree equations
• select the algebraic notation which generalizes the pattern represented by data in a given table;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings
• translate a verbal sentence into an algebraic equation;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations
• select the graph that represents a given linear function expressed in slope-intercept form;	**Graphical Representations:** Match linear graphs with their equations*
• solve multi-step linear equations (more than two steps, variables on only one side of the equation);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• solve multi-step linear equations (more than two steps, with variables on both sides of the equation);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• solve multi-step linear equations (more than two steps, with one set of parentheses on each side of the equation);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• select the linear graph that models the given real-world situation described in a narrative (no data set given);	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• select the linear graph that models the given real-world situation described in a tabular set of data;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• evaluate an algebraic expression given values for one or more variables using grouping symbols and/or exponents less than four;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
• determine the slope (rate of change) from the graph of a linear equation (no labeled points);	**Graphical Representations:** Exhibit knowledge of slope
• apply the concept of rate of change to solve real-world problems;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select the appropriate graphical representation of a given linear inequality;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• select the non-linear graph that models the given real-world situation or vice versa;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• identify the graphical representation of the solution to a one variable inequality on a number line;	**Graphical Representations:** Identify the graph of a linear inequality on the number line

 = Measured by the PLAN Mathematics Test

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• produce an equation to describe the relationship between data sets;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings
• explore patterns including Pascal's Triangle and a Fibonacci sequence;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• solve a system of two linear equations using the graphing, elimination, and substitution methods;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
• defend the selection of a method for solving a system of equations;	
• represent algebraic expressions and operations using manipulatives;	
• model the steps for solving simple linear equations using manipulatives;	
• write an equation that symbolically expresses a problem solving situation;	**Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving
• justify correct results of algebraic procedures;	
• distinguish between a function and other relationships;	
• solve multi-step linear inequalities in real-world situations;	**Expressions, Equations, & Inequalities:** Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign
• analyze “families of functions” using technology;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Analyze and draw conclusions based on information from graphs in the coordinate plane

= Measured by the PLAN Mathematics Test

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• determine the domain and/or range of a function represented by the graph of real-world situations;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• select the system of equations that could be used to solve a given real-world problem;	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings Solve simple absolute value inequalities
• find the solution to a quadratic equation given in standard form (integral solutions and a leading coefficient of one).	**Expressions, Equations, & Inequalities:** Solve quadratic equations

= Measured by the PLAN Mathematics Test

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships.	
Learning Expectations	
The student will:	
3.1. apply inductive reasoning in making conjectures, then test conjectures and/or determine a counterexample;	
3.2. apply properties of special pairs of angles (e.g. supplementary, complementary, vertical, and adjacent);	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
3.3. articulate relationships of angles formed when parallel lines are cut by a transversal;	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines
3.4. apply the concept of slope to parallel and perpendicular lines;	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
3.5. solve real world problems involving length, perimeter, and circumference;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the perimeter of polygons when all side lengths are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area and circumference of circles after identifying necessary information Compute the perimeter of simple composite geometric figures with unknown side lengths
3.6. apply the properties of congruence and similarity to solve problems;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
3.7. apply the Pythagorean Theorem and the distance formula;	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem
3.8. use appropriate measurement techniques and tools in investigating properties of polygons (triangle angle properties, angles of polygons, and triangle inequalities).	
Student Performance Indicators	
The student is able to:	
• describe real-world uses of geometric formulas and relationships;	

= Measured by the PLAN Mathematics Test

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• discuss issues related to estimating areas of irregular-shaped figures for real-world uses (i.e., fencing, painting, laying carpet, purchasing wallpaper or border);	
• identify ordered pairs in the coordinate plane;	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
• apply the given Pythagorean Theorem to a real life problem illustrated by a diagram (no radicals in answer);	**Properties of Plane Figures:** Use the Pythagorean theorem
• apply proportion and the concepts of similar triangles to find the length of a missing side of a triangle;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• calculate the distance between two points given the Pythagorean Theorem and the distance formula;	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem
• determine the height of an object that is difficult to measure by using the properties of similar triangles.	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
The student will choose appropriate techniques and tools to measure quantities in order to meet specifications for precision and accuracy.	
Learning Expectations	
The student will:	
4.1. choose appropriate techniques and tools to measure quantities in order to meet specifications for precision and accuracy;	
4.2. use concepts of length, area, and volume to estimate and solve real-world problems;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
4.3. apply measurement concepts, relationships, and formulas in algebraic and geometric problem-solving situations;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Compute the area of composite geometric figures when planning or visualization is required
4.4. use estimation to make predictions and determine reasonableness of results;	
4.5. demonstrate an understanding of rates and other derived and indirect measurements (e.g. velocity, miles per hour, revolutions per second, and cost per unit).	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)
Student Performance Indicators	
The student is able to:	
• estimate the area of irregular geometric figures on a grid;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane **Measurement:** Compute the area of composite geometric figures when planning or visualization is required

 = Measured by the PLAN Mathematics Test

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
• calculate rates involving cost per unit to determine the best buy (no more than three samples);	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
• apply the given formula to determine the area or perimeter of a rectangle;	**Measurement:** Use geometric formulas when all necessary information is given
• apply the given formula to find the area of a circle, the circumference of a circle, or the volume of a rectangular solid;	**Measurement:** Use geometric formulas when all necessary information is given Compute the area and circumference of circles after identifying necessary information
• defend estimates of the perimeter and/or area of rectangles and triangles;	
• select the area representation for a given product of two one-variable binomials with positive constants and coefficients;	
• describe how changes in the dimensions of figures affect perimeter, area, and volume.	**Properties of Plane Figures:** Draw conclusions based on a set of conditions **Measurement:** Use scale factors to determine the magnitude of a size change

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
[no statement at this level]	
Learning Expectations	
The student will:	
5.1. collect, represent, and describe linear and nonlinear data sets developed from the real world using appropriate technology;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs
5.2. choose, construct, and analyze appropriate graphical representations for a data set;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Analyze and draw conclusions based on information from graphs in the coordinate plane
5.3. interpret data using the appropriate measure of central tendency for the data set;	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values Interpret and use information from figures, tables, and graphs
5.4. determine the measures of dispersion of a data set including range and quartiles;	
5.5. apply basic counting principles, introducing factorial notation; apply experimental and theoretical probability with simulations where appropriate;	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement Determine the probability of a simple event Exhibit knowledge of simple counting techniques Compute straightforward probabilities for common situations Apply counting techniques Compute a probability when the event and/or sample space are not given or obvious

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
5.6. make predictions from a linear data set using a line of best fit.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane
Student Performance Indicators	
The student is able to:	
• determine the mean (average) of a given set of real-world data (no more than five two-digit numbers);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers
• interpret bar graphs representing real-world data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• interpret circle graphs (pie charts) representing real-world data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• graph real-world data using a variety of representations;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
• choose the matching linear graph given a set of ordered pairs;	**Graphical Representations:** Locate points in the coordinate plane Match linear graphs with their equations*
• make a prediction from the graph of a real-world linear data set;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• determine the median for a given set of real-world data (even number of data);	
• apply counting principles of permutations or combinations in real-world situations;	**Probability, Statistics, & Data Analysis:** Apply counting techniques
• debate possible conclusions that can be supported by the data;	

TABLE 2J

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
• make predictions from real-world data using a line of best fit.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the elements, subsets, properties, and operations of rational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.2. demonstrate understanding of positive integer exponents and perform operations with expressions involving exponents;	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents **Expressions, Equations, & Inequalities:** Add, subtract, and multiply polynomials
1.3. connect physical, graphical, verbal, and symbolic representations of rational numbers;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
1.4. connect physical, graphical, verbal, and symbolic representations of absolute value;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
1.5. articulate, model, and apply the concept of inverse (i.e., opposites and reciprocals);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply number properties involving positive/negative numbers
1.6. describe, model, and apply inverse operations;	
1.7. perform operations on algebraic expressions and informally justify the procedures chosen;	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Multiply two binomials Add, subtract, and multiply polynomials Manipulate expressions and equations
1.8. apply matrix addition, subtraction, and scalar multiplication in real-world problems (e.g., inventory), using appropriate technology;	
1.9. use a variety of notations appropriately (e.g., exponential, functional, square root);	

= Measured by the ACT Mathematics Test

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
1.10 select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with real numbers, and use estimation to evaluate the reasonableness of the result.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
Student Performance Indicators	
The student is able to:	
• select the best estimate for the coordinate of a given point on a number line (only rational);	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• identify the opposite of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• determine the square root of a perfect square less than 169;	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
• use exponents to simplify a monomial written in expanded form;	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents **Expressions, Equations, & Inequalities:** Add, subtract, and multiply polynomials
• apply order of operations when computing with integers using no more than two sets of grouping symbols and exponents 1 and 2;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select a reasonable solution for a real-world division problem in which the remainder must be considered;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• compare and contrast the GCF and LCM of a set of numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple
• probe the relationships among various subsets of the real number system;	

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• compare and contrast the GCF and LCM of a set of algebraic expressions;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple
• order a given set of rational numbers (both fraction and decimal notations);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• identify the reciprocal of a rational number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• add and subtract algebraic expressions;	**Expressions, Equations, & Inequalities:** Add and subtract simple algebraic expressions
• multiply two polynomials with each factor having no more than two terms;	**Expressions, Equations, & Inequalities:** Multiply two binomials Add, subtract, and multiply polynomials
• use estimation to determine a reasonable solution for a tedious arithmetic computation;	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select ratios and proportions to represent real-world problems (e.g. scale drawings, sampling);	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
• perform operations on matrices using appropriate technology (addition, subtraction, and scalar multiplication);	
• apply the concept of slope to represent rate of change in a real-world situation;	**Graphical Representations:** Determine the slope of a line from points or equations Interpret and use information from graphs in the coordinate plane
• scrutinize approximate values of real numbers such as pi and the square root of two.	

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and functions using appropriate materials and representations in real world problem solving.	
Learning Expectations	
The student will:	
2.1. communicate the meaning of variables in algebraic expressions, equations, and inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
2.2. identify dependent and independent variables in real-world situations;	
2.3. apply the concept of variable in simplifying algebraic expressions, solving equations, and solving inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Substitute whole numbers for unknown quantities to evaluate expressions Solve one-step equations having integer or decimal answers Evaluate algebraic expressions by substituting integers for unknown quantities Solve routine first-degree equations Perform straightforward word-to-symbol translations Add, subtract, and multiply polynomials Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign
2.4. represent the solution set linear equations and inequalities in one variable symbolically, graphically, and verbally;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
2.5. interpret graphs that depict real-world phenomena;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
2.6. model real-world phenomena using graphs;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Calculate or use a weighted average

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
2.7. represent functions with equations, graphs, tables, and words;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
2.8. understand and apply slope as rate of change;	**Graphical Representations:** Manipulate data from tables and graphs Calculate or use a weighted average
2.9. solve real-world problems represented by linear functions and interpret the slope and intercepts;	**Graphical Representations:** Calculate or use a weighted average
2.10. solve systems of two equations in two unknowns using a variety of techniques;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
2.11. recognize and extend numerical, geometric, and spatial patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
2.12. describe the domain and range of functions imposed either by operations or by real-life situations that the functions represent;	
2.13. describe the transformation of the graph that occurs when coefficients and/or constants of the corresponding linear equation are changed;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
2.14. generalize numerical, geometric patterns verbally and symbolically.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving
Student Performance Indicators	
The student is able to:	
• extend a geometric pattern;	
• extend a numerical pattern;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• translate a verbal expression into an algebraic expression;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
• evaluate a first degree algebraic expression given values for one or more variables;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
• solve one- and two-step linear equations using integers (with integral coefficients and constants);	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations Solve real-world problems using first-degree equations
• select the algebraic notation which generalizes the pattern represented by data in a given table;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings
• translate a verbal sentence into an algebraic equation;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations
• select the graph that represents a given linear function expressed in slope-intercept form;	**Graphical Representations:** Match linear graphs with their equations*
• solve multi-step linear equations (more than two steps, variables on only one side of the equation);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• solve multi-step linear equations (more than two steps, with variables on both sides of the equation);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• solve multi-step linear equations (more than two steps, with one set of parentheses on each side of the equation);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations

= Measured by the ACT Mathematics Test

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• select the linear graph that models the given real-world situation described in a narrative (no data set given);	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• select the linear graph that models the given real-world situation described in a tabular set of data;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• evaluate an algebraic expression given values for one or more variables using grouping symbols and/or exponents less than four;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
• determine the slope (rate of change) from the graph of a linear equation (no labeled points);	**Graphical Representations:** Exhibit knowledge of slope
• apply the concept of rate of change to solve real-world problems;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
• select the appropriate graphical representation of a given linear inequality;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• select the non-linear graph that models the given real-world situation or vice versa;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• identify the graphical representation of the solution to a one variable inequality on a number line;	**Graphical Representations:** Identify the graph of a linear inequality on the number line

= Measured by the ACT Mathematics Test

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• produce an equation to describe the relationship between data sets;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings
• explore patterns including Pascal's Triangle and a Fibonacci sequence;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• solve a system of two linear equations using the graphing, elimination, and substitution methods;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
• defend the selection of a method for solving a system of equations;	
• represent algebraic expressions and operations using manipulatives;	
• model the steps for solving simple linear equations using manipulatives;	
• write an equation that symbolically expresses a problem solving situation;	**Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving
• justify correct results of algebraic procedures;	
• distinguish between a function and other relationships;	
• solve multi-step linear inequalities in real-world situations;	**Expressions, Equations, & Inequalities:** Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign
• analyze “families of functions” using technology;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Analyze and draw conclusions based on information from graphs in the coordinate plane

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• determine the domain and/or range of a function represented by the graph of real-world situations;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• select the system of equations that could be used to solve a given real-world problem;	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings Solve simple absolute value inequalities
• find the solution to a quadratic equation given in standard form (integral solutions and a leading coefficient of one).	**Expressions, Equations, & Inequalities:** Solve quadratic equations

= Measured by the ACT Mathematics Test

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships.	
Learning Expectations	
The student will:	
3.1. apply inductive reasoning in making conjectures, then test conjectures and/or determine a counterexample;	
3.2. apply properties of special pairs of angles (e.g. supplementary, complementary, vertical, and adjacent);	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
3.3. articulate relationships of angles formed when parallel lines are cut by a transversal;	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines
3.4. apply the concept of slope to parallel and perpendicular lines;	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
3.5. solve real world problems involving length, perimeter, and circumference;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the perimeter of polygons when all side lengths are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area and circumference of circles after identifying necessary information Compute the perimeter of simple composite geometric figures with unknown side lengths
3.6. apply the properties of congruence and similarity to solve problems;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
3.7. apply the Pythagorean Theorem and the distance formula;	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem
3.8. use appropriate measurement techniques and tools in investigating properties of polygons (triangle angle properties, angles of polygons, and triangle inequalities).	
Student Performance Indicators	
The student is able to:	
• describe real-world uses of geometric formulas and relationships;	

= Measured by the ACT Mathematics Test

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• discuss issues related to estimating areas of irregular-shaped figures for real-world uses (i.e., fencing, painting, laying carpet, purchasing wallpaper or border);	
• identify ordered pairs in the coordinate plane;	**Graphical Representations:** Locate points on the number line and in the first quadrant Locate points in the coordinate plane
• apply the given Pythagorean Theorem to a real life problem illustrated by a diagram (no radicals in answer);	**Properties of Plane Figures:** Use the Pythagorean theorem
• apply proportion and the concepts of similar triangles to find the length of a missing side of a triangle;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• calculate the distance between two points given the Pythagorean Theorem and the distance formula;	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem
• determine the height of an object that is difficult to measure by using the properties of similar triangles.	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
The student will choose appropriate techniques and tools to measure quantities in order to meet specifications for precision and accuracy.	
Learning Expectations	
The student will:	
4.1. choose appropriate techniques and tools to measure quantities in order to meet specifications for precision and accuracy;	
4.2. use concepts of length, area, and volume to estimate and solve real-world problems;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
4.3. apply measurement concepts, relationships, and formulas in algebraic and geometric problem-solving situations;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Compute the area of composite geometric figures when planning or visualization is required
4.4. use estimation to make predictions and determine reasonableness of results;	
4.5. demonstrate an understanding of rates and other derived and indirect measurements (e.g. velocity, miles per hour, revolutions per second, and cost per unit).	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)
Student Performance Indicators	
The student is able to:	
• estimate the area of irregular geometric figures on a grid;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane **Measurement:** Compute the area of composite geometric figures when planning or visualization is required

= Measured by the ACT Mathematics Test

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
• calculate rates involving cost per unit to determine the best buy (no more than three samples);	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
• apply the given formula to determine the area or perimeter of a rectangle;	**Measurement:** Use geometric formulas when all necessary information is given
• apply the given formula to find the area of a circle, the circumference of a circle, or the volume of a rectangular solid;	**Measurement:** Use geometric formulas when all necessary information is given Compute the area and circumference of circles after identifying necessary information
• defend estimates of the perimeter and/or area of rectangles and triangles;	
• select the area representation for a given product of two one-variable binomials with positive constants and coefficients;	
• describe how changes in the dimensions of figures affect perimeter, area, and volume.	**Properties of Plane Figures:** Draw conclusions based on a set of conditions **Measurement:** Use scale factors to determine the magnitude of a size change

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
[no statement at this level]	
Learning Expectations	
The student will:	
5.1. collect, represent, and describe linear and nonlinear data sets developed from the real world using appropriate technology;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs
5.2. choose, construct, and analyze appropriate graphical representations for a data set;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Analyze and draw conclusions based on information from graphs in the coordinate plane
5.3. interpret data using the appropriate measure of central tendency for the data set;	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values Interpret and use information from figures, tables, and graphs
5.4. determine the measures of dispersion of a data set including range and quartiles;	
5.5. apply basic counting principles, introducing factorial notation; apply experimental and theoretical probability with simulations where appropriate;	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement Determine the probability of a simple event Exhibit knowledge of simple counting techniques Compute straightforward probabilities for common situations Apply counting techniques Compute a probability when the event and/or sample space are not given or obvious

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
5.6. make predictions from a linear data set using a line of best fit.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane
Student Performance Indicators	
The student is able to:	
• determine the mean (average) of a given set of real-world data (no more than five two-digit numbers);	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers
• interpret bar graphs representing real-world data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• interpret circle graphs (pie charts) representing real-world data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• graph real-world data using a variety of representations;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
• choose the matching linear graph given a set of ordered pairs;	**Graphical Representations:** Locate points in the coordinate plane Match linear graphs with their equations*
• make a prediction from the graph of a real-world linear data set;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• determine the median for a given set of real-world data (even number of data);	
• apply counting principles of permutations or combinations in real-world situations;	**Probability, Statistics, & Data Analysis:** Apply counting techniques
• debate possible conclusions that can be supported by the data;	

TABLE 2K

Tennessee Integrated Mathematics I Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
• make predictions from real-world data using a line of best fit.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane

TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the elements, properties and operations of real numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.2. demonstrate an understanding of the relative size of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.3. connect physical, graphical, verbal, and symbolic representations of real numbers;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations **Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
1.4. articulate, model and apply the concept of inverse (powers and roots);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply number properties involving positive/negative numbers
1.5. demonstrate an understanding of absolute value;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.6. recognize the existence of imaginary numbers;	
1.7. select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with real numbers, and evaluate the reasonableness of results;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.8. apply matrix operations to solve real-world problems, using appropriate technology.	

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TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Student Performance Indicators	
The student is able to:	
• approximate pi given a table of values for the circumference and diameter of circles;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
• order a set of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• find an integral power of a positive rational number (exponents 1–3);	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers
• use absolute value to express the distance between two points on a number line and vice versa;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• simplify a radical (radicand less than 1000);	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
• match a given irrational number to the appropriate point on a number line and vice versa (e.g., $\sqrt{2}$, $\sqrt{30}$, pi);	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• use radicals and decimal approximations of irrational numbers to indicate calculated lengths or distances;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• represent irrational numbers as lengths of lines in the coordinate plane (e.g., $\sqrt{5}$ is the length of the diagonal of a rectangle with base 1 and height 2).	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem **Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure

= Measured by the ACT Mathematics Test

TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will recognize, extend, create, and analyze a variety of geometric, spatial, and numerical patterns; solve real-world problems related to algebra and geometry; and use properties of various geometric figures to analyze and solve problems.	
Learning Expectations	
The student will:	
2.1. solve systems of three equations and three unknowns using a variety of techniques including inverse matrices with technology;	
2.2. describe the domain and range of a function;	
2.3. represent real-world problems involving sets, their intersections, union, and complements using Venn diagrams;	**Probability, Statistics, & Data Analysis:** Use Venn diagrams in counting
2.4. apply Venn diagrams in problem solving;	**Probability, Statistics, & Data Analysis:** Use Venn diagrams in counting
2.5. solve quadratic equations and inequalities using appropriate methods;	**Expressions, Equations, & Inequalities:** Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Find solutions to systems of linear equations
2.6. solve radical equations using appropriate methods;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
2.7. graph absolute value functions and quadratic functions with emphasis on transformations;	
2.8. solve real-world problems modeled by absolute value or quadratic functions;	**Expressions, Equations, & Inequalities:** Solve quadratic equations
2.9. recognize the conic sections from given information;	
2.10. recognize, extend, and create numerical, geometric, and spatial patterns;	
2.11. generalize patterns verbally and symbolically using function notation.	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings
Student Performance Indicators	
The student is able to:	
• extend or find missing element(s) in geometric patterns and situations (e.g., Fibonacci sequence and Golden Ratio);	

TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• solve multistep linear equations to find length, width, perimeter, and area of geometric figures;	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Manipulate expressions and equations **Measurement:** Compute the perimeter of simple composite geometric figures with unknown side lengths Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
• apply the concept of rate of change to solve a real-world problem given a pattern of data;	
• determine the slope given a graph of a linear equation and vice versa;	**Graphical Representations:** Determine the slope of a line from points or equations
• determine the distance, midpoint, or slope when given the coordinates of two points (answers must be given as decimals to the nearest hundredth);	**Graphical Representations:** Determine the slope of a line from points or equations Find the midpoint of a line segment Use the distance formula
• determine the equation of a line parallel or perpendicular to a given line, from given information (e.g., equations of lines, graphs of lines, or two points);	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
• apply ratio and proportion to solve real-world problems involving polygons (e.g., scale drawings, similar figures);	
• apply the triangle inequality property to determine which sets of side lengths determine a triangle;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure
• determine the perimeter, area, or volume given the ratio of two similar polygons or rectangular solids;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles **Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
• apply the Triangle Sum Theorem or Exterior Angle Theorem to determine the measures of the angles of a given triangle with the angle measures expressed algebraically;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine the equation of a circle given coordinates or the graph of the circle (e.g., the center, the endpoints of the diameter);	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings
• use manipulatives to determine relationships between linear, square, or cubic measures when one of the measures of the object has changed and represent algebraically;	

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TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• apply the line of best fit given real-world data from geometric figures using technology (e.g., finding the interior angle sum of polygons when given the number of sides; find the circumference of circles when given the diameter);	
• recognize complete and incomplete networks;	
• graph plane figures on a coordinate plane and solve problems algebraically.	**Graphical Representations:** Locate points in the coordinate plane

 = Measured by the ACT Mathematics Test

TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships and use indirect reasoning to make conjectures; deductive reasoning to draw conclusions; and both inductive and deductive reasoning to establish the truth of statements.	
Learning Expectations	
The student will:	
3.1. demonstrate an understanding of geometric transformations (i.e., reflection, translation, rotation, and dilation);	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
3.2. apply deductive reasoning using postulates and theorems to prove conclusions from given hypotheses;	
3.3. determine the truth of an implication, its converse, inverse, and contrapositive;	
3.4. apply right triangle properties, including geometric mean, The Pythagorean Theorem, special right triangles, and the trigonometric ratios;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Use the Pythagorean theorem
3.5. derive the distance formula for the distance between two points in a rectangular coordinate system;	
3.6. apply concepts related to similar and congruent triangles;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
3.7. apply properties of circles, arcs, chords, tangents, or secants to solve problems;	
3.8. apply the distance and midpoint formulas in solving problems;	**Graphical Representations:** Find the midpoint of a line segment Use the distance formula
3.9. solve real-world problems involving area with two- and three-dimensional shapes;	**Measurement:** Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
3.10 use coordinates to describe position in two and three dimensions.	**Graphical Representations:** Locate points in the coordinate plane

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TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Student Performance Indicators	
The student is able to:	
• identify corresponding parts of similar and congruent geometric figures given a diagram;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine the length of a missing side in a right triangle when given two sides (answers must be given as simplified radicals);	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem
• identify properties of plane figures from information given in a diagram;	
• identify chords, inscribed angles, or central angles of circles given a diagram;	
• determine congruence or similarity relations between triangles or quadrilaterals given a diagram;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine whether a plane figure has been translated, dilated, reflected, or rotated given a diagram and vice versa;	
• solve problems involving complementary, supplementary, congruent, vertical, or adjacent angles given angle measures expressed algebraically;	
• determine the trigonometric ratio for a right triangle needed to solve a real-world problem given a diagram;	
• find a missing side length in a 30-60-90 or 45-45-90 degree triangle without rationalizing the denominator;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• apply properties of quadrilaterals to solve real-world problems given a diagram (opposite sides and angles, consecutive sides and angles, or diagonals);	
• solve real-world problems involving measures of interior or exterior angles of regular polygons;	
• identify the appropriate segment of a triangle given a diagram and vice versa (i.e. median, altitude, angle bisector, perpendicular bisector);	
• determine which three-dimensional solid is represented by a given net and vice versa (two-dimensional drawing);	
• determine the area of indicated regions involving circles, squares, rectangles, and/or triangles;	**Measurement:** Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information

= Measured by the ACT Mathematics Test

TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• justify triangle congruence given a diagram (i.e., ASA, SSS, AAS, SAS, or Hypotenuse/ Leg);	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine if a triangle is a right triangle given the length of all the sides of a triangle;	**Graphical Representations:** Match number line graphs with solution sets of linear inequalities
• investigate and apply the properties of angles, arcs, chords, tangents, and/or secants using technology or manipulatives; find the area of a sector of a circle given a diagram;	**Measurement:** Compute the area and circumference of circles after identifying necessary information Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
• use inductive and deductive reasoning to make conjectures, draw conclusions, and solve problems;	
• recognize and articulate relationships among families of geometric figures (e.g., quadrilaterals, prisms);	
• use coordinates to communicate the location of a three-dimensional figure that has been rotated or reflected;	
• write and defend indirect and direct proofs;	
• use logical reasoning to solve problems in the real world;	
• use manipulatives to explore the geometric mean of similar triangles;	
• use appropriate tools or technology to develop geometric and spatial concepts;	
• construct three-dimensional objects using physical materials and manipulatives;	
• compare and construct quadrilateral properties using a variety of models (e.g., Venn diagrams, family trees, manipulative mobiles).	

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TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
Students will apply appropriate units of measurement; develop effective estimation and computation strategies for solving real world problems involving length, area, and volume; and choose appropriate techniques and tools to measure quantities in order to meet specifications for precision, accuracy, and tolerance.	
Learning Expectations	
The student will:	
4.1. choose appropriate techniques and tools to measure quantities in order to meet specifications for tolerance;	
4.2. perform operations on algebraic expression and informally justify the procedures chosen;	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations
4.3. use concepts of length, area, and volume to estimate and solve real-world problems;	
4.4. apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
4.5. use estimation to make predictions and determine reasonableness of results;	
4.6. demonstrate an understanding of rates and other derived and indirect measurements (e.g. velocity, miles per hr, revolutions per minute, cost per unit);	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
4.7. apply geometric properties in constructions using a variety of tools (e.g. paper folding, geometric software, reflections tools).	
Student Performance Indicators	
The student is able to:	
• determine the perimeter or area of a triangle or rectangle when the dimensions are given as first degree binomials in one variable;	**Measurement:** Compute the area of triangles and rectangles when one or more additional simple steps are required
• determine the measure of an angle using a protractor;	
• solve real world problems involving perimeter or area of three or four sided plane figures;	**Measurement:** Compute the area and perimeter of triangles and rectangles in simple problems Compute the area of triangles and rectangles when one or more additional simple steps are required
• determine the volume or surface area of a rectangular solid or cylinder in a real-world situation;	**Measurement:** Use geometric formulas when all necessary information is given
• construct bisectors of angles and line segments, perpendicular lines, congruent line segments and angles, and perpendicular bisectors using a variety of methods (e.g., patty paper, technology);	
• determine whether a reading falls within an acceptable tolerance range;	

TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
• choose appropriate techniques and tools to measure quantities in order to meet specification for precision, accuracy, and tolerance;	
• locate the irrational numbers $\sqrt{2}$ and $\sqrt{3}$ on a number line by using the Pythagorean relationship and a straightedge and compass, manipulatives, or technology;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• solve problems involving surface area of pyramids, cones, and spheres.	

= Measured by the ACT Mathematics Test

TABLE 2L

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
Students will investigate, explore, and apply geometric representations to calculate theoretical probability; and will use data from geometric figures to investigate relationships.	
Learning Expectations	
The student will:	
5.1. demonstrate an understanding of different sampling methods and when each is appropriate;	
5.2. use simulations to demonstrate probability experiments;	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event
5.3. use a variety of techniques to determine equations of best fit for quadratic data sets;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
5.4. analyze the validity of statistical conclusions;	
5.5. determine the probability of an event;	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Compute straightforward probabilities for common situations
5.6. determine the probability of mutually exclusive events.	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
Student Performance Indicators	
The student is able to:	
• make a prediction from a geometric representation of a real-world data set;	
• determine the probability of an event represented as a subset of the area of a two-dimensional geometric figure;	
• collect and analyze data to make conjectures about geometric relationships.	

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the elements, properties and operations of real numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.2. demonstrate an understanding of the relative size of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.3. connect physical, graphical, verbal, and symbolic representations of real numbers;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations **Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
1.4. articulate, model and apply the concept of inverse (powers and roots);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply number properties involving positive/negative numbers
1.5. demonstrate an understanding of absolute value;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
1.6. recognize the existence of imaginary numbers;	**Numbers: Concepts & Properties:** Exhibit some knowledge of the complex numbers
1.7. select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with real numbers, and evaluate the reasonableness of results;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
1.8. apply matrix operations to solve real-world problems, using appropriate technology.	
Student Performance Indicators	
The student is able to:	
• approximate pi given a table of values for the circumference and diameter of circles;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
• order a set of rational and irrational numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• find an integral power of a positive rational number (exponents 1–3);	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers
• use absolute value to express the distance between two points on a number line and vice versa;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• simplify a radical (radicand less than 1000);	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
• match a given irrational number to the appropriate point on a number line and vice versa (e.g., $\sqrt{2}$, $\sqrt{30}$, pi);	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• use radicals and decimal approximations of irrational numbers to indicate calculated lengths or distances;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• represent irrational numbers as lengths of lines in the coordinate plane (e.g., $\sqrt{5}$ is the length of the diagonal of a rectangle with base 1 and height 2).	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem **Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will recognize, extend, create, and analyze a variety of geometric, spatial, and numerical patterns; solve real-world problems related to algebra and geometry; and use properties of various geometric figures to analyze and solve problems.	
Learning Expectations	
The student will:	
2.1. solve systems of three equations and three unknowns using a variety of techniques including inverse matrices with technology;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
2.2. describe the domain and range of a function;	
2.3. represent real-world problems involving sets, their intersections, union, and complements using Venn diagrams;	**Probability, Statistics, & Data Analysis:** Use Venn diagrams in counting
2.4. apply Venn diagrams in problem solving;	**Probability, Statistics, & Data Analysis:** Use Venn diagrams in counting
2.5. solve quadratic equations and inequalities using appropriate methods;	**Expressions, Equations, & Inequalities:** Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Find solutions to systems of linear equations
2.6. solve radical equations using appropriate methods;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
2.7. graph absolute value functions and quadratic functions with emphasis on transformations;	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Match number line graphs with solution sets of simple quadratic inequalities Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Solve problems integrating multiple algebraic and/or geometric concepts
2.8. solve real-world problems modeled by absolute value or quadratic functions;	**Expressions, Equations, & Inequalities:** Solve quadratic equations Solve simple absolute value inequalities
2.9. recognize the conic sections from given information;	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 +$
2.10. recognize, extend, and create numerical, geometric, and spatial patterns;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences

= Measured by the ACT Mathematics Test

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
2.11. generalize patterns verbally and symbolically using function notation.	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving
Student Performance Indicators	
The student is able to:	
• extend or find missing element(s) in geometric patterns and situations (e.g., Fibonacci sequence and Golden Ratio);	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• solve multistep linear equations to find length, width, perimeter, and area of geometric figures;	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Manipulate expressions and equations **Measurement:** Compute the perimeter of simple composite geometric figures with unknown side lengths Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
• apply the concept of rate of change to solve a real-world problem given a pattern of data;	
• determine the slope given a graph of a linear equation and vice versa;	**Graphical Representations:** Determine the slope of a line from points or equations
• determine the distance, midpoint, or slope when given the coordinates of two points (answers must be given as decimals to the nearest hundredth);	**Graphical Representations:** Determine the slope of a line from points or equations Find the midpoint of a line segment Use the distance formula
• determine the equation of a line parallel or perpendicular to a given line, from given information (e.g., equations of lines, graphs of lines, or two points);	**Graphical Representations:** Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
• apply ratio and proportion to solve real-world problems involving polygons (e.g., scale drawings, similar figures);	**Basic Operations & Applications:** Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)
• apply the triangle inequality property to determine which sets of side lengths determine a triangle;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• determine the perimeter, area, or volume given the ratio of two similar polygons or rectangular solids;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles **Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Use scale factors to determine the magnitude of a size change
• apply the Triangle Sum Theorem or Exterior Angle Theorem to determine the measures of the angles of a given triangle with the angle measures expressed algebraically;	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine the equation of a circle given coordinates or the graph of the circle (e.g., the center, the endpoints of the diameter);	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings **Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
• use manipulatives to determine relationships between linear, square, or cubic measures when one of the measures of the object has changed and represent algebraically;	
• apply the line of best fit given real-world data from geometric figures using technology (e.g., finding the interior angle sum of polygons when given the number of sides; find the circumference of circles when given the diameter);	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• recognize complete and incomplete networks;	
• graph plane figures on a coordinate plane and solve problems algebraically.	**Graphical Representations:** Locate points in the coordinate plane Solve problems integrating multiple algebraic and/or geometric concepts

= Measured by the ACT Mathematics Test

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships and use indirect reasoning to make conjectures; deductive reasoning to draw conclusions; and both inductive and deductive reasoning to establish the truth of statements.	
Learning Expectations	
The student will:	
3.1. demonstrate an understanding of geometric transformations (i.e., reflection, translation, rotation, and dilation);	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Solve problems integrating multiple algebraic and/or geometric concepts
3.2. apply deductive reasoning using postulates and theorems to prove conclusions from given hypotheses;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
3.3. determine the truth of an implication, its converse, inverse, and contrapositive;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
3.4. apply right triangle properties, including geometric mean, The Pythagorean Theorem, special right triangles, and the trigonometric ratios;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Use the Pythagorean theorem **Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Apply basic trigonometric ratios to solve right-triangle problems
3.5. derive the distance formula for the distance between two points in a rectangular coordinate system;	
3.6. apply concepts related to similar and congruent triangles;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
3.7. apply properties of circles, arcs, chords, tangents, or secants to solve problems;	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle
3.8. apply the distance and midpoint formulas in solving problems;	**Graphical Representations:** Find the midpoint of a line segment Use the distance formula
3.9. solve real-world problems involving area with two- and three-dimensional shapes;	**Measurement:** Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required

= Measured by the ACT Mathematics Test

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
	Compute the area and circumference of circles after identifying necessary information Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Compute the area of composite geometric figures when planning or visualization is required
3.10 use coordinates to describe position in two and three dimensions.	**Graphical Representations:** Locate points in the coordinate plane Solve problems integrating multiple algebraic and/or geometric concepts
Student Performance Indicators	
The student is able to:	
• identify corresponding parts of similar and congruent geometric figures given a diagram;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• determine the length of a missing side in a right triangle when given two sides (answers must be given as simplified radicals);	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use the Pythagorean theorem
• identify properties of plane figures from information given in a diagram;	
• identify chords, inscribed angles, or central angles of circles given a diagram;	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle
• determine congruence or similarity relations between triangles or quadrilaterals given a diagram;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Draw conclusions based on a set of conditions
• determine whether a plane figure has been translated, dilated, reflected, or rotated given a diagram and vice versa;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas **Measurement:** Use scale factors to determine the magnitude of a size change
• solve problems involving complementary, supplementary, congruent, vertical, or adjacent angles given angle measures expressed algebraically;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• determine the trigonometric ratio for a right triangle needed to solve a real-world problem given a diagram;	**Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Apply basic trigonometric ratios to solve right-triangle problems

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• find a missing side length in a 30-60-90 or 45-45-90 degree triangle without rationalizing the denominator;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• apply properties of quadrilaterals to solve real-world problems given a diagram (opposite sides and angles, consecutive sides and angles, or diagonals);	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• solve real-world problems involving measures of interior or exterior angles of regular polygons;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• identify the appropriate segment of a triangle given a diagram and vice versa (i.e. median, altitude, angle bisector, perpendicular bisector);	
• determine which three-dimensional solid is represented by a given net and vice versa (two-dimensional drawing);	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• determine the area of indicated regions involving circles, squares, rectangles, and/or triangles;	**Measurement:** Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
• justify triangle congruence given a diagram (i.e., ASA, SSS, AAS, SAS, or Hypotenuse/ Leg);	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Draw conclusions based on a set of conditions
• determine if a triangle is a right triangle given the length of all the sides of a triangle;	**Graphical Representations:** Match number line graphs with solution sets of linear inequalities
• investigate and apply the properties of angles, arcs, chords, tangents, and/or secants using technology or manipulatives; find the area of a sector of a circle given a diagram;	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle **Measurement:** Compute the area and circumference of circles after identifying necessary information Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
• use inductive and deductive reasoning to make conjectures, draw conclusions, and solve problems;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• recognize and articulate relationships among families of geometric figures (e.g., quadrilaterals, prisms);	

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• use coordinates to communicate the location of a three-dimensional figure that has been rotated or reflected;	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
• write and defend indirect and direct proofs;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• use logical reasoning to solve problems in the real world;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• use manipulatives to explore the geometric mean of similar triangles;	
• use appropriate tools or technology to develop geometric and spatial concepts;	
• construct three-dimensional objects using physical materials and manipulatives;	
• compare and construct quadrilateral properties using a variety of models (e.g., Venn diagrams, family trees, manipulative mobiles).	**Properties of Plane Figures:** Draw conclusions based on a set of conditions

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
Students will apply appropriate units of measurement; develop effective estimation and computation strategies for solving real world problems involving length, area, and volume; and choose appropriate techniques and tools to measure quantities in order to meet specifications for precision, accuracy, and tolerance.	
Learning Expectations	
The student will:	
4.1. choose appropriate techniques and tools to measure quantities in order to meet specifications for tolerance;	
4.2. perform operations on algebraic expression and informally justify the procedures chosen;	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations
4.3. use concepts of length, area, and volume to estimate and solve real-world problems;	
4.4. apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Compute the area of composite geometric figures when planning or visualization is required
4.5. use estimation to make predictions and determine reasonableness of results;	
4.6. demonstrate an understanding of rates and other derived and indirect measurements (e.g. velocity, miles per hr, revolutions per minute, cost per unit);	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
4.7. apply geometric properties in constructions using a variety of tools (e.g. paper folding, geometric software, reflections tools).	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
Student Performance Indicators	
The student is able to:	
• determine the perimeter or area of a triangle or rectangle when the dimensions are given as first degree binomials in one variable;	**Measurement:** Compute the area of triangles and rectangles when one or more additional simple steps are required
• determine the measure of an angle using a protractor;	
• solve real world problems involving perimeter or area of three or four sided plane figures;	**Measurement:** Compute the area and perimeter of triangles and rectangles in simple problems Compute the area of triangles and rectangles when one or more additional simple steps are required
• determine the volume or surface area of a rectangular solid or cylinder in a real-world situation;	**Measurement:** Use geometric formulas when all necessary information is given

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
• construct bisectors of angles and line segments, perpendicular lines, congruent line segments and angles, and perpendicular bisectors using a variety of methods (e.g., patty paper, technology);	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• determine whether a reading falls within an acceptable tolerance range;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• choose appropriate techniques and tools to measure quantities in order to meet specification for precision, accuracy, and tolerance;	
• locate the irrational numbers $\sqrt{2}$ and $\sqrt{3}$ on a number line by using the Pythagorean relationship and a straightedge and compass, manipulatives, or technology;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• solve problems involving surface area of pyramids, cones, and spheres.	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

TABLE 2M

Tennessee Integrated Mathematics II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
Students will investigate, explore, and apply geometric representations to calculate theoretical probability; and will use data from geometric figures to investigate relationships.	
Learning Expectations	
The student will:	
5.1. demonstrate an understanding of different sampling methods and when each is appropriate;	
5.2. use simulations to demonstrate probability experiments;	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event
5.3. use a variety of techniques to determine equations of best fit for quadratic data sets;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving
5.4. analyze the validity of statistical conclusions;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
5.5. determine the probability of an event;	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Compute straightforward probabilities for common situations
5.6. determine the probability of mutually exclusive events.	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
Student Performance Indicators	
The student is able to:	
• make a prediction from a geometric representation of a real-world data set;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• determine the probability of an event represented as a subset of the area of a two-dimensional geometric figure;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• collect and analyze data to make conjectures about geometric relationships.	**Properties of Plane Figures:** Draw conclusions based on a set of conditions

TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the laws of exponents, including integral and rational exponents;	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents
1.2. demonstrate an understanding of the elements, subsets, and properties of the complex number system;	
1.3. select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with real numbers, and evaluate the reasonableness of results;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.4. perform operations on algebraic expression and justify the procedures chosen;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Add and subtract simple algebraic expressions Multiply two binomials* Add, subtract, and multiply polynomials* Manipulate expressions and equations
1.5. perform operations on complex numbers of the form a + bi.	
Student Performance Indicators	
The student is able to:	
• order a given set of real numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• identify the reciprocal of a real number; probe the relationships among various subsets of the real-number system;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

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TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
• explore various representations of absolute value on a number line;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• multiply two polynomials with each factor having no more than two terms;	**Expressions, Equations, & Inequalities:** Multiply two binomials
• perform basic operations using complex numbers (i.e., addition, subtraction, and multiplication);	
• identify the exponential form of a logarithmic expression and vice versa;	
• simplify expressions with rational and negative exponents;	**Numbers: Concepts & Properties:** Find and use the least common multiple Apply rules of exponents
• add, subtract, and multiply algebraic expressions;	**Expressions, Equations, & Inequalities:** Add and subtract simple algebraic expressions Multiply two binomials* Add, subtract, and multiply polynomials
• compare and contrast the GCF and the LCM of a set of algebraic expressions;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple
• add, subtract, and perform scalar multiplication on matrices using appropriate technology;	
• use the inverse nature of powers and roots;	
• perform basic operations on rational algebraic expressions;	
• determine the conjugate of a complex number;	
• use delta notation to represent the rate of change in a real-world situation	
• justify the procedures chosen when performing operations on algebraic expressions and equations;	
• use factorial notation for coefficients in a binomial expansion;	
• determine the multiplicative inverse of a complex number;	
• formulate the representation of a series using sigma notation.	

TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and functions using appropriate materials and representations in real-world problem solving, and will demonstrate an understanding of the behavior of a variety of functions and their graphs.	
Learning Expectations	
The student will:	
2.1. perform operations on functions, including composition, and determine the effects of the composition on the domain and range;	
2.2. demonstrate an understanding of the inverse of a function, and determine if the inverse is a function;	
2.3. identify and describe the characteristics of families of functions;	
2.4. articulate the results of varying parameters of a parent function;	
2.5. solve polynomial equations and inequalities using appropriate technology;	**Expressions, Equations, & Inequalities:** Solve quadratic equations
2.6. solve absolute value equations and inequalities;	**Expressions, Equations, & Inequalities:** Solve absolute value equations
2.7. graph polynomial, exponential, and logarithmic and rational functions;	
2.8. solve exponential, logarithmic, and rational equations using appropriate methods and technology;	
2.9. solve real-world problems modeled by polynomial, exponential, logarithmic, and periodic functions;	**Expressions, Equations, & Inequalities:** Solve quadratic equations
2.10. solve problems involving linear programming;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
2.11. demonstrate an understanding of recursive and explicit definitions of functions and sequences;	
2.12. recognize the difference between continuous and discrete situations;	
2.13. apply sigma notation with arithmetic and geometric series;	
2.14. represent a sequence using a list, graph, symbols, and words;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs
2.15. determine an equation of a conic section from its graph.	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings

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TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Student Performance Indicators	
The student is able to:	
• translate a verbal sentence into an algebraic equation and vice versa;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations
• select the algebraic equation that generalizes the pattern represented by data in a given table;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings
• solve multi-step (more than two steps) linear equations (one set of parentheses on each side of the equations and/or variables on both sides);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• select the graph that represents a given linear function expressed in slope-intercept form;	**Graphical Representations:** Exhibit knowledge of slope
• select the graph that models a given real-world situation (i.e., linear and non-linear);	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• explain what the changes in slope of a non-linear graph represent in a real-world situation;	
• analyze mathematical patterns related to algebra and geometry in real-world problem solving;	
• identify the graphical representation of the solution to a one-variable inequality on a number line;	**Graphical Representations:** Match number line graphs with solution sets of linear inequalities
• select functional notation to generalize a given numeric pattern;	
• solve one-variable linear equations with rational expressions;	
• select the graph of a two-variable inequality;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• determine the domain of polynomial, rational, square root, exponential and logarithmic functions;	
• determine the range of a wide variety of functions given a graph;	
• solve a system of linear equations with 2 variables (e.g. substitution, elimination, Cramer's Rule, and graphing);	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations

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TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• apply properties of logarithms to simplify a logarithmic expression;	
• identify matrices that model given real-world situations;	
• use a variety of methods to solve linear systems in two and three variables (e.g., elimination, substitution, Cramer's Rule, matrices, and graphing);	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
• explain the restrictions on the variable in a radical equation;	
• choose an appropriate method to find the roots of a quadratic equation (e.g., completing the square, quadratic formula, factoring, or graphing calculator);	**Expressions, Equations, & Inequalities:** Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Solve quadratic equations
• solve quadratic inequalities;	
• determine the inverse of a logarithmic function given its graph;	
• evaluate the graph of a function to determine if it is periodic;	
• sketch a system of linear inequalities and determine the maximum or minimum value of the related function;	
• justify the procedures chosen when performing operations on algebraic expressions and equations;	
• find the maximum or minimum value given the graph of the feasible region of the real world linear programming application;	
• determine all the roots of a higher order polynomial (i.e., Descartes' Rule of Signs, Rational Root Theorem, and Synthetic Division).	

TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
[no statement at this level]	
Learning Expectations	
The student will:	
3.1. apply and justify properties of quadrilaterals and circles;	
3.2. solve real world problems involving volume of geometric solids;	
3.3. demonstrate an understanding of the Platonic Solids;	
3.4. demonstrate an understanding of uniqueness through indirect proofs;	
3.5. apply transformational matrices to transform geometric figures in a rectangular coordinate system.	
Student Performance Indicators	
The student is able to:	
• apply the given Pythagorean Theorem to real-world problems;	**Properties of Plane Figures:** Use the Pythagorean theorem
• predict the graphical transformation that occurs when coefficients and/or constants of given function are changed (no trigonometric or logarithmic functions);	
• apply proportion and the concepts of similar triangles to solve real world problems;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• estimate the irrational solution of a real-world problem using the Pythagorean Theorem;	**Properties of Plane Figures:** Use the Pythagorean theorem
• describe the transformation that has changed a "parent function" to the given related function (e.g., right shift of 3 units, reflection in the x-axis;	
• apply the distance formula to obtain the equation of a circle in order to solve real-world problems;	**Graphical Representations:** Use the distance formula
• use deductive reasoning to draw conclusions;	
• use matrices to find the area of a triangle on a coordinate plane;	
• investigate and explore the conic sections.	

TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
[no statement at this level]	
Learning Expectations	
The student will:	
4.1. use concepts of length, area, and volume to estimate and solve real-world problems;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
4.2. apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
4.3. use estimation to make predictions and determine reasonableness of results;	
4.4. demonstrate an understanding of rates and other derived and indirect measurements (e.g. velocity, miles per hr, rpm, cost per unit).	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
Student Performance Indicators	
The student is able to:	
• select the appropriate unit of measure given the real world situation;	
• select the area representation for a given product of two binomials;	
• apply the given formula to find area and circumference of circles, area and perimeter of polygons, and volume of regular solids;	**Measurement:** Use geometric formulas when all necessary information is given
• use appropriate measurements in collecting data for a real world situation;	
• solve real world problems given logarithmic and exponential formulas (e.g. pH scale, Richter scale.).	

TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
Students will collect, organize, represent, and interpret data; make and evaluate inferences and predictions; present and evaluate arguments based on data analysis; and model situations to determine theoretical and experimental probabilities.	
Learning Expectations	
The student will:	
5.1. describe and apply the normal distribution and its properties;	
5.2. use z-scores to compare normally distributed data sets;	
5.3. use a variety of techniques to determine equations of best fit for nonlinear data sets;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
5.4. calculate and interpret z-scores;	
5.5. apply the properties of conditional probability;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
5.6. determine binomial probabilities using appropriate methods;	
5.7. make inferences about a data set using appropriate measures of central tendency and dispersion, including variance and standard deviation;	
5.8. calculate expected value to make judgments about real-life situations.	
Student Performance Indicators	
The student is able to:	
• make a prediction from the graph of a real-world data set;	
• determine the measures of central tendency for a given set of real-world data;	
• choose the matching linear graph when given a set of ordered pairs representing real-world data;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Match linear graphs with their equations
• analyze student-collected data to make predications or generalizations;	
• categorize the correlation of a scatterplot using real-world data (i.e., positive, negative, strong, or weak);	
• determine the number of possible outcomes for a given experiment (i.e., the multiplication counting principle, permutations, or combinations);	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques Apply counting techniques
• determine the theoretical probability of a simple event for a given situation;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations

= Measured by the PLAN Mathematics Test

TABLE 2N

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**PLAN Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
• use simulations to help predict the probability of a given situation;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• determine the theoretical probability of a compound event (i.e., dependent or independent, union and intersection);	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• determine the theoretical probability of mutually exclusive events for a given situation;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• analyze theoretical or experimental probability to determine the likelihood of an event;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• analyze data using linear and quadratic functions using the appropriate technology;	
• analyze the validity of statistical conclusions and the use, misuse, and abuse of data;	
• identify the mean and the standard deviation given the graph of a normal distribution;	
• find the equation for the line of best fit given a scatterplot depicting real-world data;	
• use the measure of central tendency which best represents the given real-world data set given a distribution curve.	

= Measured by the PLAN Mathematics Test

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations verbally, physically, symbolically, and graphically.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the laws of exponents, including integral and rational exponents;	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents
1.2. demonstrate an understanding of the elements, subsets, and properties of the complex number system;	**Numbers: Concepts & Properties:** Exhibit some knowledge of the complex numbers
1.3. select and apply an appropriate method (i.e., mental arithmetic, paper and pencil, or technology) for computing with real numbers, and evaluate the reasonableness of results;	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
1.4. perform operations on algebraic expression and justify the procedures chosen;	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Add and subtract simple algebraic expressions Multiply two binomials* Add, subtract, and multiply polynomials* Manipulate expressions and equations
1.5. perform operations on complex numbers of the form a + bi.	**Numbers: Concepts & Properties:** Apply properties of complex numbers
Student Performance Indicators	
The student is able to:	
• order a given set of real numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• identify the reciprocal of a real number; probe the relationships among various subsets of the real-number system;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• explore various representations of absolute value on a number line;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
	Graphical Representations: Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
• multiply two polynomials with each factor having no more than two terms;	**Expressions, Equations, & Inequalities:** Multiply two binomials
• perform basic operations using complex numbers (i.e., addition, subtraction, and multiplication);	**Numbers: Concepts & Properties:** Multiply two complex numbers Apply properties of complex numbers
• identify the exponential form of a logarithmic expression and vice versa;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• simplify expressions with rational and negative exponents;	**Numbers: Concepts & Properties:** Find and use the least common multiple Apply rules of exponents
• add, subtract, and multiply algebraic expressions;	**Expressions, Equations, & Inequalities:** Add and subtract simple algebraic expressions Multiply two binomials* Add, subtract, and multiply polynomials
• compare and contrast the GCF and the LCM of a set of algebraic expressions;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Find and use the least common multiple
• add, subtract, and perform scalar multiplication on matrices using appropriate technology;	
• use the inverse nature of powers and roots;	
• perform basic operations on rational algebraic expressions;	
• determine the conjugate of a complex number;	**Numbers: Concepts & Properties:** Apply properties of complex numbers
• use delta notation to represent the rate of change in a real-world situation	
• justify the procedures chosen when performing operations on algebraic expressions and equations;	
• use factorial notation for coefficients in a binomial expansion;	
• determine the multiplicative inverse of a complex number;	**Numbers: Concepts & Properties:** Apply properties of complex numbers
• formulate the representation of a series using sigma notation.	

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and functions using appropriate materials and representations in real-world problem solving, and will demonstrate an understanding of the behavior of a variety of functions and their graphs.	
Learning Expectations	
The student will:	
2.1. perform operations on functions, including composition, and determine the effects of the composition on the domain and range;	**Functions:** Evaluate quadratic functions, expressed in function notation, at integer values Evaluate polynomial functions, expressed in function notation, at integer values Evaluate composite functions at integer values
2.2. demonstrate an understanding of the inverse of a function, and determine if the inverse is a function;	
2.3. identify and describe the characteristics of families of functions;	
2.4. articulate the results of varying parameters of a parent function;	
2.5. solve polynomial equations and inequalities using appropriate technology;	**Expressions, Equations, & Inequalities:** Solve quadratic equations
2.6. solve absolute value equations and inequalities;	**Expressions, Equations, & Inequalities:** Solve absolute value equations Solve simple absolute value inequalities
2.7. graph polynomial, exponential, and logarithmic and rational functions;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
2.8. solve exponential, logarithmic, and rational equations using appropriate methods and technology;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
2.9. solve real-world problems modeled by polynomial, exponential, logarithmic, and periodic functions;	**Expressions, Equations, & Inequalities:** Solve quadratic equations **Functions:** Use trigonometric concepts and basic identities to solve problems
2.10. solve problems involving linear programming;	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
2.11. demonstrate an understanding of recursive and explicit definitions of functions and sequences;	
2.12. recognize the difference between continuous and discrete situations;	
2.13. apply sigma notation with arithmetic and geometric series;	

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
2.14. represent a sequence using a list, graph, symbols, and words;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs
2.15. determine an equation of a conic section from its graph.	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings Write equations and inequalities that require planning, manipulating, and/or solving **Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
Student Performance Indicators	
The student is able to:	
• translate a verbal sentence into an algebraic equation and vice versa;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations
• select the algebraic equation that generalizes the pattern represented by data in a given table;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings Write equations and inequalities that require planning, manipulating, and/or solving
• solve multi-step (more than two steps) linear equations (one set of parentheses on each side of the equations and/or variables on both sides);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• select the graph that represents a given linear function expressed in slope-intercept form;	**Graphical Representations:** Exhibit knowledge of slope
• select the graph that models a given real-world situation (i.e., linear and non-linear);	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• explain what the changes in slope of a non-linear graph represent in a real-world situation;	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane

= Measured by the ACT Mathematics Test

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• analyze mathematical patterns related to algebra and geometry in real-world problem solving;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
• identify the graphical representation of the solution to a one-variable inequality on a number line;	**Graphical Representations:** Match number line graphs with solution sets of linear inequalities
• select functional notation to generalize a given numeric pattern;	
• solve one-variable linear equations with rational expressions;	
• select the graph of a two-variable inequality;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• determine the domain of polynomial, rational, square root, exponential and logarithmic functions;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• determine the range of a wide variety of functions given a graph;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• solve a system of linear equations with 2 variables (e.g. substitution, elimination, Cramer's Rule, and graphing);	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
• apply properties of logarithms to simplify a logarithmic expression;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• identify matrices that model given real-world situations;	
• use a variety of methods to solve linear systems in two and three variables (e.g., elimination, substitution, Cramer's Rule, matrices, and graphing);	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
• explain the restrictions on the variable in a radical equation;	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers
• choose an appropriate method to find the roots of a quadratic equation (e.g., completing the square, quadratic formula, factoring, or graphing calculator);	**Expressions, Equations, & Inequalities:** Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Solve quadratic equations
• solve quadratic inequalities;	
• determine the inverse of a logarithmic function given its graph;	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
• evaluate the graph of a function to determine if it is periodic;	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane **Functions:** Match graphs of basic trigonometric functions with their equations

= Measured by the ACT Mathematics Test

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• sketch a system of linear inequalities and determine the maximum or minimum value of the related function;	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
• justify the procedures chosen when performing operations on algebraic expressions and equations;	
• find the maximum or minimum value given the graph of the feasible region of the real world linear programming application;	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
• determine all the roots of a higher order polynomial (i.e., Descartes' Rule of Signs, Rational Root Theorem, and Synthetic Division).	

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
[no statement at this level]	
Learning Expectations	
The student will:	
3.1. apply and justify properties of quadrilaterals and circles;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
3.2. solve real world problems involving volume of geometric solids;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
3.3. demonstrate an understanding of the Platonic Solids;	
3.4. demonstrate an understanding of uniqueness through indirect proofs;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
3.5. apply transformational matrices to transform geometric figures in a rectangular coordinate system.	
Student Performance Indicators	
The student is able to:	
• apply the given Pythagorean Theorem to real-world problems;	**Properties of Plane Figures:** Use the Pythagorean theorem
• predict the graphical transformation that occurs when coefficients and/or constants of given function are changed (no trigonometric or logarithmic functions);	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• apply proportion and the concepts of similar triangles to solve real world problems;	**Basic Operations & Applications:** Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings) **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
• estimate the irrational solution of a real-world problem using the Pythagorean Theorem;	**Properties of Plane Figures:** Use the Pythagorean theorem
• describe the transformation that has changed a "parent function" to the given related function (e.g., right shift of 3 units, reflection in the x-axis;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Analyze and draw conclusions based on information from graphs in the coordinate plane
• apply the distance formula to obtain the equation of a circle in order to solve real-world problems;	**Graphical Representations:** Use the distance formula **Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
• use deductive reasoning to draw conclusions;	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• use matrices to find the area of a triangle on a coordinate plane;	
• investigate and explore the conic sections.	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
[no statement at this level]	
Learning Expectations	
The student will:	
4.1. use concepts of length, area, and volume to estimate and solve real-world problems;	**Measurement:** Estimate or calculate the length of a line segment based on other lengths given on a geometric figure Compute the area of rectangles when whole number dimensions are given Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information
4.2. apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas **Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Compute the area of composite geometric figures when planning or visualization is required
4.3. use estimation to make predictions and determine reasonableness of results;	
4.4. demonstrate an understanding of rates and other derived and indirect measurements (e.g. velocity, miles per hr, rpm, cost per unit).	**Basic Operations & Applications:** Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
Student Performance Indicators	
The student is able to:	
• select the appropriate unit of measure given the real world situation;	
• select the area representation for a given product of two binomials;	
• apply the given formula to find area and circumference of circles, area and perimeter of polygons, and volume of regular solids;	**Measurement:** Use geometric formulas when all necessary information is given
• use appropriate measurements in collecting data for a real world situation;	
• solve real world problems given logarithmic and exponential formulas (e.g. pH scale, Richter scale.).	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
Students will collect, organize, represent, and interpret data; make and evaluate inferences and predictions; present and evaluate arguments based on data analysis; and model situations to determine theoretical and experimental probabilities.	
Learning Expectations	
The student will:	
5.1. describe and apply the normal distribution and its properties;	
5.2. use z-scores to compare normally distributed data sets;	
5.3. use a variety of techniques to determine equations of best fit for nonlinear data sets;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving
5.4. calculate and interpret z-scores;	
5.5. apply the properties of conditional probability;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
5.6. determine binomial probabilities using appropriate methods;	
5.7. make inferences about a data set using appropriate measures of central tendency and dispersion, including variance and standard deviation;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
5.8. calculate expected value to make judgments about real-life situations.	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
Student Performance Indicators	
The student is able to:	
• make a prediction from the graph of a real-world data set;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• determine the measures of central tendency for a given set of real-world data;	**Probability, Statistics, & Data Analysis:** Distinguish between mean, median, and mode for a list of numbers
• choose the matching linear graph when given a set of ordered pairs representing real-world data;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Match linear graphs with their equations
• analyze student-collected data to make predications or generalizations;	

TABLE 2P

Tennessee Integrated Mathematics III Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
• categorize the correlation of a scatterplot using real-world data (i.e., positive, negative, strong, or weak);	
• determine the number of possible outcomes for a given experiment (i.e., the multiplication counting principle, permutations, or combinations);	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques Apply counting techniques
• determine the theoretical probability of a simple event for a given situation;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• use simulations to help predict the probability of a given situation;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• determine the theoretical probability of a compound event (i.e., dependent or independent, union and intersection);	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• determine the theoretical probability of mutually exclusive events for a given situation;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• analyze theoretical or experimental probability to determine the likelihood of an event;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• analyze data using linear and quadratic functions using the appropriate technology;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• analyze the validity of statistical conclusions and the use, misuse, and abuse of data;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• identify the mean and the standard deviation given the graph of a normal distribution;	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
• find the equation for the line of best fit given a scatterplot depicting real-world data;	
• use the measure of central tendency which best represents the given real-world data set given a distribution curve.	

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
Students will recognize, represent, model, and apply real numbers and operations and will demonstrate an understanding of properties and operations of the complex number system.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of the subsets, elements, properties, and operations of the complex number system;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Exhibit some knowledge of the complex numbers
1.2. connect physical, graphical, verbal, and symbolic representations of real numbers;	**Graphical Representations:** Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant
1.3. articulate, model, and apply the concept of inverse (e.g. opposites, reciprocals, and powers and roots);	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply number properties involving positive/negative numbers
1.4. describe, model, and apply inverse operations;	
1.5. connect physical, graphical, verbal, and symbolic representations of absolute value;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Solve problems integrating multiple algebraic and/or geometric concepts
1.6. use a variety of notations appropriately (e.g. logarithmic, factorial, sigma, delta, radical);	
1.7. perform operations on algebraic expressions and informally justify the procedures chosen.	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Multiply two binomials Add, subtract, and multiply polynomials Manipulate expressions and equations

= Measured by the ACT Mathematics Test

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Number and Operations	
State Performance Indicators	
The student is able to:	
• order a given set of real numbers;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
• identify the reciprocal of a real number;	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• multiply two polynomials with each factor having no more than two terms;	**Expressions, Equations, & Inequalities:** Multiply two binomials Add, subtract, and multiply polynomials
• perform basic operations using complex numbers (i.e., addition, subtraction, and multiplication);	**Numbers: Concepts & Properties:** Multiply two complex numbers Apply properties of complex numbers
• select a graph that represents an absolute value equation on a coordinate plane;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Analyze and draw conclusions based on information from graphs in the coordinate plane
• identify the exponential form of a logarithmic expression and vice versa;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• simplify expressions with rational and negative exponents;	**Numbers: Concepts & Properties:** Apply rules of exponents
• add, subtract, and multiply algebraic expressions;	**Expressions, Equations, & Inequalities:** Add, subtract, and multiply polynomials
• determine the conjugate of a complex number.	**Numbers: Concepts & Properties:** Apply properties of complex number

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
Students will describe, extend, analyze, and create a wide variety of patterns and functions using appropriate materials and representations in real-world problem solving, and will demonstrate an understanding of the behavior of a variety of functions and their graphs.	
Learning Expectations	
The student will:	
2.1. analyze mathematical patterns related to algebra and geometry in real-world problem solving;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs **Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers
2.2. use algebraic thinking to generalize a pattern by expressing the pattern in functional notation;	**Expressions, Equations, & Inequalities:** Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving **Functions:** Write an expression for the composite of two simple functions
2.3. solve linear systems using a variety of techniques, including matrices;	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Find solutions to systems of linear equations
2.4. communicate the meaning of variables in algebraic expressions, equations, and inequalities;	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Perform straightforward word-to-symbol translations
2.5. manipulate the algebraic functions with constants and analyze graphs to describe the behavior of functions;	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations **Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
2.6. apply the concept of rate of change;	
2.7. identify and represent a variety of functions (e.g. linear, quadratic, cubic);	
2.8. identify, describe, and articulate the characteristics and the parameters of a parent function;	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
2.9. interpret results of algebraic procedures;	
2.10. apply the concept of variable in simplifying algebraic expressions, solving equations, and solving inequalities;	

= Measured by the ACT Mathematics Test

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
2.11. interpret graphs that depict real-world phenomena;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
2.12. model real-world phenomena using functions and graphs;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
2.13. describe the domain and range of functions and articulate restrictions imposed either by the operations or by the real-life situations which the functions represent;	
2.14. use linear programming to solve real-world problems.	
State Performance Indicators	
The student is able to:	
• translate a verbal sentence into an algebraic equation and vice versa;	**Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations
• select the algebraic equation that generalizes the pattern represented by data in a given table;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings Write equations and inequalities that require planning, manipulating, and/or solving
• solve multi-step (more than two steps) linear equations (one set of parentheses on each side of the equations and/or variables on both sides);	**Expressions, Equations, & Inequalities:** Solve routine first-degree equations Solve real-world problems using first-degree equations
• select the graph that represents a given linear function expressed in slope-intercept form;	**Graphical Representations:** Match linear graphs with their equations
• select the graph that models a given real-world situation (i.e., linear and non-linear);	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
• identify the graphical representation of the solution to a one-variable inequality on a number line;	**Graphical Representations:** Identify the graph of a linear inequality on the number line Match number line graphs with solution sets of linear inequalities

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebra	
• select functional notation to generalize a given numeric pattern;	
• solve one-variable linear equations with rational expressions;	
• select the graph of a two-variable inequality;	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
• determine the domain of polynomial, rational, square root, exponential and logarithmic functions;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• determine the range of a wide variety of functions given a graph;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• solve a system of linear equations with 2 variables (e.g. substitution, elimination, Cramer's Rule, and graphing);	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
• apply properties of logarithms to simplify a logarithmic expression;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• identify matrices that model given real-world situations;	
• determine the inverse of a logarithmic function given its graph.	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers Exhibit knowledge of logarithms and geometric sequences

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships.	
Learning Expectations	
The student will:	
3.1. apply geometric properties, formulas, and relationships to solve real-world problems;	**Measurement:** Use geometric formulas when all necessary information is given **Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
3.2. justify conclusions using deductive reasoning;	
3.3. use inductive reasoning to make conjectures;	
3.4. communicate position using spatial sense with two- and three-dimensional coordinate systems;	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts Analyze and draw conclusions based on information from graphs in the coordinate plane
3.5. perform a given transformation and predict the results of the transformation.	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts Analyze and draw conclusions based on information from graphs in the coordinate plane
State Performance Indicators	
The student is able to:	
• apply the given Pythagorean Theorem to real-world problems;	**Properties of Plane Figures:** Use the Pythagorean theorem
• predict the graphical transformation that occurs when coefficients and/or constants of given function are changed (no trigonometric or logarithmic functions);	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• apply proportion and the concepts of similar triangles to solve real world problems;	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles **Basic Operations & Applications:** Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Geometry	
Students will investigate, model, and apply geometric properties and relationships.	
• describe the transformation that has changed a "parent function" to the given related function (e.g., right shift of 3 units, reflection in the x-axis).	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Analyze and draw conclusions based on information from graphs in the coordinate plane

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 4.0. Measurement	
The student will understand and be able to apply the units, systems and processes of measurement.	
Learning Expectations	
The student will:	
4.1. apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas **Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Compute the area of composite geometric figures when planning or visualization is required
4.2. apply appropriate techniques, tools, and formulas to determine measurements.	**Measurement:** Use geometric formulas when all necessary information is given
State Performance Indicators	
The student is able to:	
• select the area representation for a given product of two binomials;	
• apply the given formula to find area and circumference of circles, area and perimeter of polygons, and volume of regular solids;	**Measurement:** Use geometric formulas when all necessary information is given
• solve real world problems given logarithmic and exponential formulas (e.g., pH scale, Richter scale).	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
The student will collect, organize, represent, and interpret data; make and evaluate inferences and predictions; present and evaluate arguments based on data analysis; and model situations to determine theoretical and experimental probabilities.	
Learning Expectations	
The student will:	
5.1. understand concept of randomness in sampling;	
5.2. apply appropriate technology in data collection and analysis;	
5.3. apply counting principles of permutations and combinations using appropriate technology;	**Probability, Statistics, & Data Analysis:** Apply counting techniques
5.4. apply theoretical and experimental probability to analyze the likelihood of an event;	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Compute straightforward probabilities for common situations
5.5. collect, represent, and describe linear and nonlinear data sets developed from real world;	
5.6. make predictions from a data set using curve fitting with appropriate technology;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
5.7. make inferences about a data set using appropriate measures of central tendency and dispersion;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
5.8. describe and apply the normal distribution and its properties;	
5.9. identify mutually exclusive and non-mutually exclusive events;	
5.10. analyze the probability of dependent events and of independent events;	**Probability, Statistics, & Data Analysis:** Compute a probability when the event and/or sample space are not given or obvious
5.11. use simulations to estimate probability;	
5.12. choose, construct, and analyze appropriate graphical representations for a data set;	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs
5.13. analyze the validity of statistical conclusions and the use, misuse, and abuse of data.	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs

TABLE 2Q

Tennessee Algebra II Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 5.0. Data Analysis & Probability	
State Performance Indicators	
The student is able to:	
• make a prediction from the graph of a real-world data set;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• determine the measures of central tendency for a given set of real-world data;	**Probability, Statistics, & Data Analysis:** Distinguish between mean, median, and mode for a list of numbers
• choose the matching linear graph when given a set of ordered pairs representing real-world data;	**Graphical Representations:** Match linear graphs with their equations **Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
• categorize the correlation of a scatterplot using real-world data (i.e., positive, negative, strong, or weak);	
• determine the number of possible outcomes for a given experiment (i.e. the multiplication counting principle, permutations, or combinations);	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques Apply counting techniques
• determine the theoretical probability of a simple event for a given situation;	
• determine the theoretical probability of a compound event (i.e., dependent or independent, union and intersection);	
• find the equation for the line of best fit given a scatterplot depicting real-world data.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane

TABLE 2R

Tennessee Advanced Algebra with Trigonometry Standards, Expectations, and State Indicators	**ACT Mathematics College Readiness Standards**
Content Standard: 1.0. Algebra	
Students will extend algebraic concepts to model and solve problems in real-world situations by using a variety of functions, equations, and inequalities	
Learning Expectations	
The student will:	
1.1. represent situations that involve variable quantities with expressions, equations, inequalities, and matrices;	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving
1.2. use appropriate methods and technologies to represent and characterize the solutions for a variety of equations, inequalities, and systems of equations and systems of inequalities;	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Identify solutions to simple quadratic equations Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign Find solutions to systems of linear equations
1.3. demonstrate understanding of sequences and series.	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers Exhibit knowledge of logarithms and geometric sequences
Student Performance Indicators	
The student is able to:	
• represent (graphically, algebraically, verbally, and numerically) and analyze a variety of functions (polynomial, rational, exponential, and logarithmic) and their characteristics;	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving **Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• graph a variety of functions using transformations;	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts

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TABLE 2R

Tennessee Advanced Algebra with Trigonometry Standards, Expectations, and State Indicators	**ACT Mathematics College Readiness Standards**
Content Standard: 1.0. Algebra	
• solve a variety of equations using appropriate methods;	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations Solve quadratic equations Find solutions to systems of linear equations
• solve linear, quadratic, and polynomial inequalities using appropriate methods;	**Expressions, Equations, & Inequalities:** Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign
• solve real-world problems modeled by rational, polynomial, exponential, and logarithmic functions;	
• use data analysis techniques to model real-world phenomena using functions;	
• demonstrate an understanding of operations on matrices;	
• solve real-world problems involving networks, finite graphs, and geometric transformations;	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
• recognize the difference between continuous and discrete situations;	
• demonstrate an understanding of recursive and explicit definitions of functions and sequences;	
• use sigma notation to represent arithmetic and geometric series;	
• represent a sequence using a list, graph, symbols, and words;	
• solve problems using permutations and combinations;	
• apply the Binomial Theorem to expansion of binomials;	
• use the discriminants of quadratic equations to characterize the nature of the solutions to the equations and the x-intercepts of the graphs of the equations;	
• write equations for conic sections and identify characteristics of the related graphs;	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings Write equations and inequalities that require planning, manipulating, and/or solving **Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• recognize direct- and inverse-variation situations and solve real-world problems involving variation;	

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TABLE 2R

Tennessee Advanced Algebra with Trigonometry Standards, Expectations, and State Indicators	**ACT Mathematics College Readiness Standards**
Content Standard: 1.0. Algebra	
• graphs equations of the forms $y = kx$, $y = kx^2$, $y = k/x$ and $y = k/x^2$.	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$

TABLE 2R

Tennessee Advanced Algebra with Trigonometry Standards, Expectations, and State Indicators	**ACT Mathematics College Readiness Standards**
Content Standard: 2.0. Trigonometry	
Students will demonstrate an understanding of trigonometric functions and apply them to problem situations and real-world phenomena.	
Learning Expectations	
The student will:	
2.1. apply trigonometry concepts and applications to problem situations;	**Functions:** Apply basic trigonometric ratios to solve right-triangle problems Use trigonometric concepts and basic identities to solve problems
2.2. connect trigonometric and circular functions;	**Functions:** Exhibit knowledge of unit circle trigonometry
2.3. interpret trigonometric functions represented graphically.	**Functions:** Match graphs of basic trigonometric functions with their equations
Student Performance Indicators	
The student is able to:	
• define the trigonometric functions using the unit circle;	**Functions:** Exhibit knowledge of unit circle trigonometry
• determine values of the trigonometric functions for special angles using the unit circle and the symmetry of the circle;	**Functions:** Exhibit knowledge of unit circle trigonometry
• graph the trigonometric functions;	**Functions:** Match graphs of basic trigonometric functions with their equations
• understand amplitude, period, phase shift, and vertical shift and apply to graphing trigonometric functions;	**Functions:** Match graphs of basic trigonometric functions with their equations
• use trigonometric functions with appropriate technology to model periodic phenomena;	
• verify trigonometric identities graphically and by substitution;	**Functions:** Use trigonometric concepts and basic identities to solve problems
• solve trigonometric equations graphically;	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
• use degrees and radians interchangeably to represent angle measure in problems and explain the advantages/disadvantages of a particular choice;	
• solve real-world problems applying the trigonometric ratios, the Law of Sines, and the Law of Cosines;	**Functions:** Use trigonometric concepts and basic identities to solve problems

TABLE 2R

Tennessee Advanced Algebra with Trigonometry Standards, Expectations, and State Indicators	**ACT Mathematics College Readiness Standards**
Content Standard: 2.0. Trigonometry	
• apply the trigonometric formulas for finding the areas of triangles and circular sectors and segments;	**Measurement:** Compute the area of composite geometric figures when planning or visualization is required **Functions:** Use trigonometric concepts and basic identities to solve problems
• derive the Pythagorean Identities.	

TABLE 2S

Tennessee Discrete Math with Statistics & Probability Standards, Expectations, and State Indicators	**ACT Mathematics College Readiness Standards**
Content Standard: 1.0. Discrete Mathematics	
Students will investigate meaningful problems individually or in cooperative groups, while using appropriate technology, to apply discrete structures to represent and solve problems.	
Learning Expectations	
The student will:	
1.1. use discrete structures to represent problem situations;	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers
1.2. apply inductive and deductive reasoning to discrete problem situations;	
1.3. apply discrete ideas and structures to solve a variety of problems.	
Student Performance Indicators	
The student is able to:	
• apply discrete ideas to solve real-world problems (i.e., election theory, group ranking, and estate planning);	
• demonstrate an understanding of the elements, subsets, properties, operations of sets;	
• use valid forms of deductive reasoning and logic to make and evaluate arguments;	
• represent and solve problems using discrete structures such as finite graphs, matrices, and sequences (e.g., Leslie Model, Leontief Model, Markov Chain, and cryptographic techniques);	
• use vertex-edge graphs to solve network problems such as finding circuits, critical paths, minimum spanning trees, and adjacency matrices;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• analyze and use discrete ideas such as induction, iteration, and recurrence relations to solve problems from such fields as Chaos Theory, Map Problems, and fractals;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• create tessellations using reflection, rotation, and translation.	

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TABLE 2S

Tennessee Discrete Math with Statistics & Probability Standards, Expectations, and State Indicators	**ACT Mathematics College Readiness Standards**
Content Standard: 2.0. Probability	
Students will expand basic concepts of probability and apply those concepts to represent and solve problems.	
Learning Expectations	
The student will:	
1.1. demonstrate an understanding of probability distributions;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
1.2. apply experimental and theoretical probability in problem solving.	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
Student Performance Indicators	
The student is able to:	
• apply number theory topics such as the Fundamental Theorem of Arithmetic, lowest common denominator, greatest common factor, etc. to solve problems using modular arithmetic;	**Numbers: Concepts & Properties:** Apply number properties involving prime factorization Apply number properties involving even/odd numbers and factors/multiples
• create and interpret discrete probability distributions;	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
• use experimental or theoretical probability, as appropriate, to represent and solve problems involving uncertainty;	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
• derive and use formulas to calculate combinations and permutations;	**Probability, Statistics, & Data Analysis:** Apply counting techniques
• understand and apply the concept of a random variable to generate and interpret probability distributions including binomial, uniform, normal, and Chi Square; apply game theory to problem solving.	

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TABLE 2S

Tennessee Discrete Math with Statistics & Probability Standards, Expectations, and State Indicators	**ACT Mathematics College Readiness Standards**
Content Standard: 3.0. Statistics	
Students will select and use appropriate representations and statistical methods to analyze data collected from real-world situations.	
Learning Expectations	
The student will:	
3.1. formulate questions and design appropriate studies;	
3.2. select and use appropriate representations to summarize data;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
3.3. select and use appropriate statistics to analyze data.	**Probability, Statistics, & Data Analysis:** Distinguish between mean, median, and mode for a list of numbers
Student Performance Indicators	
The student is able to:	
• design a statistical experiment to study a problem, conduct the experiment, and communicate and interpret the outcomes;	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
• understand and apply measures of central tendency, variability, and correlation to summarize data and draw inferences from real-world situations;	**Probability, Statistics, & Data Analysis:** Distinguish between mean, median, and mode for a list of numbers
• understand sampling and recognize its role in statistical claims;	
• conduct and interpret tests for significance using appropriate statistics;	
• use curve fitting to make predictions from data;	**Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving
• construct and draw inferences from charts, tables, and graphs that summarize data from real-world situations.	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs

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TABLE 2T

Tennessee PreCalculus Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 1.0. Models for Real-World Phenomena	
Students will model and analyze real-world phenomena using techniques from algebra and data analysis.	
Learning Expectations	
The student will:	
1.1. select and use appropriate algebraic functions to model real-world situations;	**Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving **Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
1.2. select and use appropriate techniques from data analysis to model real-world phenomena.	**Expressions, Equations, & Inequalities:** Write expressions that require planning and/or manipulating to accurately model a situation
Student Performance Indicators	
The student is able to:	
• model real-world phenomena using techniques of data analysis;	**Expressions, Equations, & Inequalities:** Write expressions that require planning and/or manipulating to accurately model a situation
• recognize and apply mathematical models of linear, quadratic, exponential, logarithmic, and trigonometric functions;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Graphical Representations:** Match linear graphs with their equations Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ **Functions:** Match graphs of basic trigonometric functions with their equations
• use scatterplot residuals, and/or correlation coefficients to determine whether a model is appropriate;	
• apply equations and graphs of conic sections to model real-world phenomena;	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• use models when appropriate to draw conclusions or make predictions.	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane

TABLE 2T

Tennessee PreCalculus Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebraic Functions	
Students will extend the concepts of function from earlier courses to a wider variety of functions and their graphs and real-world applications.	
Learning Expectations	
The student will:	
2.1. represent a variety of functions graphically;	**Graphical Representations:** Match linear graphs with their equations Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
2.2. use a variety of methods to analyze and interpret functions;	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane
2.3. determine the slope and equations of lines tangent to curves;	
2.4. apply functions in problem situations.	
Student Performance Indicators	
The student is able to:	
• sketch the graphs of the basic functions (linear, quadratic, cubic, square root, absolute value, reciprocal, trigonometric, exponential, logarithmic, and greatest integer);	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Graphical Representations:** Match linear graphs with their equations Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• graph transformations and combinations of transformations for all basic functions;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• analyze functions, such as by decomposing into simpler functions;	**Functions:** Write an expression for the composite of two simple functions
• determine if a function is even, odd, or neither;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• use an appropriate technology to solve inequalities;	
• demonstrate an understanding of the concept of the limit of a function;	
• apply the limit of a function to find the slope of a line tangent to a curve;	
• write equations of tangents and normals to conic sections;	

TABLE 2T

Tennessee PreCalculus Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 2.0. Algebraic Functions	
Students will extend the concepts of function from earlier courses to a wider variety of functions and their graphs and real-world applications.	
• apply limits to develop the concept of continuity and identify intervals of increase and decrease;	
• locate critical points on the graphs of polynomial functions and determine if each critical point is a minimum, a maximum, or a point of inflection;	
• determine an equation of a rational function from a written description;	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings
• define and use the logarithmic function as the inverse of the exponential function;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• sketch the graphs of exponential and logarithmic functions;	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
• solve exponential and logarithmic equations modeling real-world problems (e.g. growth and decay).	**Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving

TABLE 2T

Tennessee PreCalculus Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Trigonometric Functions	
[no statement at this level]	
Learning Expectations	
The student will:	
3.1. apply trigonometry concepts and applications to model and solve problems;	**Functions:** Use trigonometric concepts and basic identities to solve problems Match graphs of basic trigonometric functions with their equations
3.2. use trigonometric concepts to represent, apply, and operate with complex numbers;	**Numbers: Concepts & Properties:** Apply properties of complex numbers
3.3. solve trigonometric equations and inequalities algebraically or graphically;	**Functions:** Use trigonometric concepts and basic identities to solve problems Match graphs of basic trigonometric functions with their equations
3.4. interpret transformations of trigonometric functions.	**Functions:** Match graphs of basic trigonometric functions with their equations
Student Performance Indicators	
The student is able to:	
• define six circular functions;	**Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
• sketch graphs of the six trigonometric functions involving period change, amplitude change, phase shift, and/or vertical shift;	**Functions:** Match graphs of basic trigonometric functions with their equations
• use trigonometric functions to model periodic phenomena;	**Functions:** Match graphs of basic trigonometric functions with their equations
• use graphs to develop and verify trigonometric identities;	**Functions:** Use trigonometric concepts and basic identities to solve problems Match graphs of basic trigonometric functions with their equations
• find values of inverse trigonometric functions, applying appropriate domain and range restrictions;	**Functions:** Use trigonometric concepts and basic identities to solve problems
• solve trigonometric equations and inequalities either algebraically or using graphing technology.	**Functions:** Use trigonometric concepts and basic identities to solve problems Match graphs of basic trigonometric functions with their equations
• derive the Law of Sines and the Law of Cosines and apply them to solve problems involving triangles and vectors;	**Functions:** Use trigonometric concepts and basic identities to solve problems

TABLE 2T

Tennessee PreCalculus Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 3.0. Trigonometric Functions	
[no statement at this level]	
• derive and apply the formulas for the area of a triangle and the sector of a circle;	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas Use relationships among angles, arcs, and distances in a circle
• understand the relationship between measurements in radians and degrees;	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle
• apply radian measures in problems related to linear and angular velocity;	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure **Functions:** Exhibit knowledge of unit circle trigonometry
• understand and apply vectors to solve real world problems;	**Functions:** Use trigonometric concepts and basic identities to solve problems
• represent complex numbers in both rectangular and polar form;	**Numbers: Concepts & Properties:** Apply properties of complex numbers
• apply the trigonometric form of complex number in calculations;	
• prove and apply DeMoivre's Theorem to find roots and powers of complex numbers.	

TABLE 2T

Tennessee PreCalculus Standards, Expectations, and State Indicators	**ACT Mathematics** **College Readiness Standards**
Content Standard: 4.0. Sequences and Series	
Students will develop the concept of limit by examining infinite sequences and series.	
Learning Expectations	
The student will:	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
4.1. represent sequences and series;	
4.2. determine, when possible, the sums of infinite series.	
Student Performance Indicators	
The student is able to:	
• demonstrate an understanding of sequences by representing them recursively and explicitly;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• use sigma notation to represent a series;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• determine whether a given series converges or diverges;	
• find the sum of an infinite series that converges;	
• find the sum of an infinite geometric series;	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
• use the Binomial Theorem to expand binomials.	

SUPPLEMENT

TABLES 3A–3V

SCIENCE

TABLE 3A

Tennessee Grade 7 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
LIFE SCIENCE	
Content Standard: 1.0. Cell Structure and Function	
The student will investigate the structure and function of plant and animal cells.	
Learning Expectations	
1.1. Recognize the differences among cells, tissues, organs, and systems.	
1.2. Differentiate between the structures and functions of plant and animal cells.	
1.3. Recognize that cell division occurs in sequential stages.	
1.4. Know that materials move into and out of cells.	
State Performance Indicators	
The student is able to:	
7.1.spi.1. recognize basic structures that most cells share (i.e., nucleus, cytoplasm, cell membrane, cell wall, ribosome, mitochondria, chloroplast, vacuole, lysosome).	
7.1.spi.2. identify major cell organelles and their functions.	
7.1.spi.3. distinguish between plant and animal cells.	
7.1.spi.4. sequence a series of diagrams depicting the movement of chromosomes during mitosis.	
7.1.spi.5. determine the relationships among cells, tissues, organs, and systems given a diagram and identify the function of organ systems.	
7.1.spi.6. predict the movement of substances through osmosis or diffusion across the cell membrane, given solutions of different concentrations.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3A

Tennessee Grade 7 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
LIFE SCIENCE	
Content Standard: 3.0. Food Production and Energy for Life	
The student will study the basic parts of plants, investigate how plants produce food, and discover that plants and animals use food to sustain life.	
Learning Expectations	
3.2. Distinguish between photosynthesis and respiration.	
3.3. Describe the movement of oxygen and carbon dioxide between living things and the environment.	
State Performance Indicators	
The student is able to:	
7.3.spi.1. determine what plants need to make food.	
7.3.spi.2. identify photosynthesis as the food making process in plants.	
7.3.spi.3. select the structures that animals use to obtain oxygen.	
7.3.tpi.4. classify animals according to their means of obtaining oxygen.	
7.3.spi.5. select the illustration that depicts the movement of oxygen and carbon dioxide between living things and their environment.	
7.3.spi.6. identify the reactants and products of photosynthesis and respiration.	
7.3.spi.7. associate the processes of photosynthesis and respiration with appropriate cellular organelles.	
7.3.spi.8. interpret a diagram depicting the oxygen-carbon dioxide cycle.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3A

Tennessee Grade 7 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
LIFE SCIENCE	
Content Standard: 4.0. Heredity and Reproduction	
The student will understand the basic principles of inheritance.	
Learning Expectations	
4.1. Recognize the difference between sexual and asexual reproduction.	
State Performance Indicators	
The student is able to:	
7.4.spi.1. match a flower part with its reproductive function.	
7.4.spi.2. distinguish between sexual and asexual methods of reproduction.	
7.4.spi.3. recognize advantages and disadvantages of sexual and asexual reproduction.	
7.4.spi.4. recognize a variety of pollination methods and associated floral adaptations.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3A

Tennessee Grade 7 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
EARTH AND SPACE SCIENCE	
Content Standard: 8.0. Atmospheric Cycles	
The student will investigate the relationships among atmospheric conditions, weather, and climate.	
Learning Expectations	
8.1. Interpret the relationship between weather and the water cycle.	
8.2. Investigate the relationship between the collection of weather data and its interpretation.	
8.3. Explore how changes in oceanic and atmospheric conditions affect climate.	
8.4. Explore careers related to meteorology.	
State Performance Indicators	
The student is able to:	
7.8.spi.1. determine how temperature affects evaporation and condensation in the atmosphere.	
7.8.spi.2. identify the detailed features of the water cycle given a diagram (i.e. evaporation, condensation, precipitation, run-off, transpiration.)	
7.8.spi.3. analyze data and make predictions about weather given a scenario.	
7.8.spi.4. interpret weather data using a weather map.	

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TABLE 3A

Tennessee Grade 7 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
PHYSICAL SCIENCE	
Content Standard: 12.0. Structure and Properties of Matter	
The student will investigate the characteristic properties of matter.	
Learning Expectations	
12.1. Distinguish among elements, compounds, and mixtures.	
12.2. Identify and measure the simple properties of common substances.	
12.3. Understand that the periodic table is used as a tool for grouping elements.	
State Performance Indicators	
The student is able to:	
7.12.spi.1. determine the measurable properties of matter and appropriate metric units (i.e. weight, mass, volume, density, size (length, width, height), temperature.)	
7.12.spi.2. distinguish between elements, compounds, and mixtures (i.e., Na, Cl, NaCl, C, O_2, CO_2, H_2, H_20).	
7.12.spi.3. classify substances as elements or compounds from their symbols or formulas.	
7.12.spi.4. compare the motion and arrangement of molecules in solids, liquids, and gases.	

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TABLE 3B

Tennessee Grade 8 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
LIFE SCIENCE	
Content Standard: 2.0. Interactions Between Living Things and Their Environment	
The student will investigate how living things interact with one another and with non-living elements of their environment.	
Learning Expectations	
2.3. Identify the major biomes of the world.	
State Performance Indicators	
The student is able to:	
8.2.spi.1. distinguish among commensalism, parasitism, and mutualism.	
8.2.spi.2. identify the earth's major biomes.	
8.2.spi.3. choose the appropriate biome for an organism, given a description.	
8.2.spi.4. identify biotic and abiotic factors in a biome.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3B

Tennessee Grade 8 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
LIFE SCIENCE	
Content Standard: 4.0. Heredity and Reproduction	
The student will understand the basic principles of inheritance.	
Learning Expectations	
4.2. examine differences between dominant and recessive traits.	
4.3. investigate the relationship among DNA, genes, chromosomes, and the genetic code of life.	
4.4. explore careers related to biotechnology.	
State Performance Indicators	
The student is able to:	
8.4.spi.1. differentiate between complete and incomplete metamorphosis.	
8.4.spi.2. distinguish between sexual and asexual methods of reproduction.	
8.4.spi.3. differentiate between dominant and recessive traits.	
8.4.spi.4. predict the genotypes of offspring in a monohybrid cross using a Punnett Square.	
8.4.spi.5. select models or illustrations that are representations of DNA.	
8.4.spi.6. associate a change in a DNA molecule with a mutation.	
8.4.spi.7. identify types of genetic engineering (i.e. gene splicing and cloning) and evaluate the impact of genetic engineering on society.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3B

Tennessee Grade 8 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
LIFE SCIENCE	
Content Standard: 5.0. Diversity and Adaptation Among Living Things	
The student will understand that living things have characteristics that enable them to survive in their environment.	
Learning Expectations	
5.2. Identify characteristics used by scientists to classify organisms into different categories.	
State Performance Indicators	
The student is able to:	
8.5.spi.1. identify similarities and differences among organisms.	
8.5.spi.2. classify plants and animals into groups according to their features.	
8.5.spi.3. infer the relatedness of different organisms.	
8.5.spi.4. use a simple classification key to identify an unknown organism.	
8.5.spi.5. determine the genus and species of an organism using a dichotomous key.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3B

Tennessee Grade 8 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
EARTH AND SPACE SCIENCE	
Content Standard: 9.0. Earth Features	
The student will understand that the earth has many geological features that are constantly changing.	
Learning Expectations	
9.1. Understand the characteristics of the earth's layers and the locations of major plates.	
9.2. Describe the forces and processes that shape the earth.	
State Performance Indicators	
The student is able to:	
8.9.spi.1. label a cross section of the earth.	
8.9.spi.2. identify the major plates of the world.	
8.9.spi.3. recognize the relationship between continental drift and plate tectonics.	
8.9.spi.4. deduce plate movements as the major cause of geological events.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3B

Tennessee Grade 8 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
EARTH AND SPACE SCIENCE	
Content Standard: 10.0. Earth Resources	
The student will investigate the properties, uses, and conservation of the earth's resources.	
Learning Expectations	
10.1. Investigate the characteristics of minerals and their uses.	
10.2. Describe the rock cycle.	
10.3. Investigate how human activities affect the earth's land, oceans, and atmosphere.	
10.4. Examine various types of energy resources and their importance to man.	
10.5. Analyze approaches to conserving energy and natural resources.	
State Performance Indicators	
The student is able to:	
8.10.spi.1. identify factors that cause rocks to break down.	
8.10.spi.2. distinguish between renewable and nonrenewable resources.	
8.10.spi.3. identify various energy sources.	
8.10.spi.4. distinguish among sedimentary, igneous, and metamorphic rocks and interpret a simple rock cycle diagram.	
8.10.spi.5. infer that human activities may be helpful or harmful to the environment.	
8.10.spi.6. identify rocks and minerals given a table of physical properties.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3B

Tennessee Grade 8 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
PHYSICAL SCIENCE	
Content Standard: 11.0. Forces and Motion	
The student will investigate the effects of force on the movement of objects.	
Learning Expectations	
11.1. Distinguish between speed and velocity.	
11.2. Demonstrate an understanding of Newton's three laws of motion.	
11.3. Identify factors that influence gravitational force between objects.	
11.4. Identify simple machines and their uses.	
State Performance Indicators	
The student is able to:	
8.11.spi.1. recognize that forces cause changes in speed and/or the direction of motion.	
8.11.spi.2. identify simple machines.	
8.11.spi.3. recognize the relationship between mass, force and acceleration.	
8.11.spi.4. identify the relationship between the mass of objects, the distance between them and the amount of gravitational attraction	
8.11.spi.5. choose the most appropriate simple machine to use for a specific task.	
8.11.spi.6. identify Newton's three laws of motion and relate the first two laws to the concepts of inertia and momentum.	
8.11.spi.7. solve problems pertaining to distance, speed, velocity, and time, given illustrations, diagrams, graphs, or scenarios.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3B

Tennessee Grade 8 Science Standards, Expectations, and State Indicators	**EXPLORE Science** **College Readiness Standards**
PHYSICAL SCIENCE	
Content Standard: 13.0. Interactions of Matter	
The student will investigate the interactions of matter.	
Learning Expectations	
13.1. Understand the differences between acids and bases and how indicators are used.	
13.2. Differentiate between physical and chemical changes.	
13.3. Understand what a chemical equation represents.	
State Performance Indicators	
The student is able to:	
8.13.spi.1. distinguish between physical and chemical changes.	
8.13.spi.2. identify a substance as an acid or a base, given its pH.	
8.13.spi.3. recognize that the mass of the reactants is the same as the mass of the products, given simple chemical equations	
8.13.spi.4. determine how temperature and concentration might affect the rate of a chemical reaction.	
8.13.spi.5. classify a reaction as exothermic or endothermic.	

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_____ = Content sampled by EXPLORE Science Test

TABLE 3C

Tennessee Earth Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Earth System	
The student will investigate the origin, composition, and structure of the universe.	
Learning Expectations	
The student will:	
1.1. explore the theories of the origin of the universe and its vastness.	
1.2. examine the components of the solar system.	
1.3. examine the sun, earth, moon relationships and their gravitational effects.	
1.4. investigate the exploration of space.	
Performance Indicators	
The student is able to:	
• identify the components of the universe: galaxies, solar systems, stars, planets, meteors, comets, and asteroids.	
• understand the seasons and the phases of the moon.	
• draw the position of the sun, earth, and moon during eclipses and lunar phases.	
• predict tidal conditions based on the position of the earth and moon.	
• investigate the history of space exploration.	
• discuss the theories of the origin of the universe: Big Bang and Oscillating/Pulsating.	
• construct a model of our solar system with emphasis on ratio and proportions of both distance and size of planets.	
• explain the evolution of a star through all stages of its potential development.	
• classify galaxies according to their shapes.	
• explore the role of astronomical events in Earth history (e.g., asteroid/meteor impacts, solar flares, and comets).	
• investigate the relationship between the length of the day and the inclination and relative position of the sun to the earth (seasons).	
• interpret a tide chart using an almanac or the Internet.	
• describe the relationship between mass and gravity.	
• construct a historical timeline of man's changing perceptions and knowledge regarding astronomy.	
• explore recent developments in space exploration.	
• explore the benefits of space technology in our everyday lives.	
• compare and contrast earth to other planets in our solar system.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3C

Tennessee Earth Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Earth System	
• research Tennessee's contribution to earth and space science.	
• research a career related to Earth systems such as: astronomer, astronaut, planetary geologist, aerospace engineer, and astrophysicist.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3C

Tennessee Earth Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 2.0 Energy in the Earth System	
The student will explore issues associated with energy use in the Earth system.	
Learning Expectations	
The student will:	
2.1. investigate energy sources.	
2.2. explore energy transfer pathways.	
2.3. evaluate alternative energy sources.	
Performance Indicators	
The student is able to:	
• differentiate among the forms of energy (light, heart, mechanical, and chemical).	
• illustrate the three types of energy transfer (radiation, conduction, and convection) and give examples.	
• describe energy resources (e.g., fossil fuels, solar, geothermal, nuclear, wind, and hydroelectric).	
• distinguish between renewable and nonrenewable resources and their conservation.	
• investigate the sun as the major source of the Earth's energy.	
• explore the three primary sources of internal energy: gravitational energy from the earth's original formation, friction, and radioactive decay.	
• reflect upon a teacher demonstration of energy conservation (e.g., driving a nail into a board or mixing vinegar and baking soda).	
• diagram and evaluate pathways of energy transfer to demonstrate the law of conservation of energy.	
• relate the transfer of energy through the geologic cycles: mantle convection, wind, and ocean currents.	
• describe the impact of energy transfer on human activity (hurricanes, crops growing—photosynthesis, volcanic eruptions, tsunamis).	
• compare and contrast alternative energy sources and their environmental impact.	
• research careers that relate to energy in the earth system such as nuclear engineer, chemical engineer, environmental engineer, geochemical scientist, materials engineer, geologists, meteorologist, and hydrologist.	
• debate issues related to energy sources, resources, and local impact.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3C

Tennessee Earth Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 3.0. Cycles in the Earth System	
The student will investigate the principal features of the cycles in the Earth system.	
Learning Expectations	
The student will:	
3.1. explain the components of the tectonic cycle.	
3.2. investigate the rock cycle.	
3.3. analyze the hydrologic cycle.	
3.4. interpret and assimilate data related to the atmospheric cycle.	
3.5. differentiate between the geo-chemical (Earth system) cycles.	
3.6. evaluate the role of living organisms within the Earth system cycles.	
3.7. investigate maps.	
Performance Indicators	
The student is able to:	
• explore continental drift/plate tectonics theory using models.	
• distinguish between minerals and rocks.	
• distinguish among sedimentary, igneous, and metamorphic rocks.	
• diagram the rock cycle including the processes.	
• label the parts of the hydrologic cycle, given a diagram.	
• collect and interpret basic weather data from meteorological instruments (thermometer, rain gauge, dry/wet thermometer, and barometer).	
• demonstrate physical and chemical weathering.	
• recognize the basic geochemical cycles: oxygen/carbon dioxide cycle, nitrogen cycle, and carbon cycle.	
• distinguish between diverging and converging plate boundaries using a labeled diagram of mantle convection currents.	
• explain and map the relationship between plate tectonics to mountain building, volcanoes, and earthquakes.	
• identify mineral samples using simple property tests (hardness, luster, streak, cleavage/fracture and perhaps specific gravity, acid, shape, and taste).	
• identify rock samples as sedimentary, igneous, or metamorphic.	
• identify uses of rocks and minerals.	
• describe the role of water (i.e. weathering, groundwater, river systems, glaciers, and oceans) in the evolution of landform processes.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3C

Tennessee Earth Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 3.0. Cycles in the Earth System	
• analyze weather data and make simple predictions using weather maps.	
• understand the interrelationships among the geochemical cycles: a fixed amount of each stable element cycles through the earth systems (the law of conservation of mass).	
• recognize the interrelationships of geologic processes and human activity (e.g., floods, earthquakes, volcanoes, acid rain, and global warming).	
• write an essay on how geology affects your everyday life.	
• read and interpret topographic maps.	
• construct the geological cycle for a physiographic region or geologic time period in Tennessee.	
• investigate careers that relate to geology, such as mineralogist, geologist, meteorologist, volcanologist, gemologist, seismologist, paleontologist, and others.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3C

Tennessee Earth Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Geologic History	
The student will explore the geologic history of the Earth.	
Learning Expectations	
The student will:	
4.1. interpret and evaluate the nature of geologic time.	
4.2. investigate the evolution of Earth.	
4.3. interpret and evaluate the evidence for biological evolution in the fossil record.	
4.4. demonstrate the effect of the environment on the formation and extinction of species.	
Performance Indicators	
The student is able to:	
• explain the law of uniformitarianism.	
• recognize that fossils are found in sedimentary rock.	
• construct mock fossils.	
• compare and contrast fossils to modern organisms.	
• recognize the difference between absolute and relative time (i.e. using a family tree.)	
• recognize that fossils contained in sedimentary rock provide clues to life forms, changes in those life forms, and environmental changes.	
• examine the fossil record to determine the adaptations of organisms.	
• cite and explain the evidence for plate tectonics (fossil record, mountain ranges, rock strata, paleomagnetism, paleoclimates, and configuration of the continents.)	
• compare and contrast the mechanisms for determining the advance of geologic history: relative and absolute dating.	
• construct and interpret a geologic timetable for the evolution of Earth and the history of life.	
• differentiate the relative age of various fossils in sedimentary rock, given a diagram of rock strata.	
• interpret the sequence of rock strata using superposition, cross cutting relationships, inclusions, the fossil record, and absolute data techniques.	
• create a diorama that depicts the ancient environment or habitat in which a given fossil existed.	
• predict how environmental changes affect the development of new species or extinction of an existing species, given a written scenario.	
• describe what a geologic time traveler might see in the future of Tennessee.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3D

Tennessee Ecology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Ecological Principles	
The student will investigate factors that influence and are influenced by the natural environment.	
Learning Expectations	
The student will:	
1.1. understand the structure and function of ecosystems.	
1.2. explore the major biomes of the earth and the biodiversity associated with these biomes.	
1.3. analyze and interpret population dynamics.	
1.4. relate earth processes to ecosystem dynamics.	
1.5. understand interdependence in ecosystems.	
1.6. explore factors affecting the vulnerability of a species to extinction.	
State Performance Indicators	
The student is able to:	
• illustrate that energy for life is provided by the sun that is captured by plants through photosynthesis.	
• draw a food web, given organisms and their role in the environment.	
• trace the flow of energy and the cycling of matter between living systems and the physical environment.	
• explore the biodiversity in various biomes.	
• explain how variations within a species affects the likelihood of survival.	
• discuss ways that populations can change over time.	
• describe the effect of natural disasters on ecosystems.	
• explain the chemical components of biological processes such as photosynthesis, respiration, nitrogen fixation, or decomposition.	
• trace energy flow in an ecosystem.	
• illustrate that the abundance and distribution of living organisms are limited by available energy and certain forms of matter.	
• investigate a specific biome and make a class presentation.	
• read and interpret population graphs and list the factors that might result in the trend represented in the graphs.	
• analyze the relationship of habitat change to plant and animal population density.	
• describe succession in ecosystems.	
• investigate the effect of varying one factor in a mini-ecosystem.	
• investigate how an experimental population changes over time.	
• create a model or a cross-sectional drawing that shows surface-and groundwater flows in a local water site.	

= Measured by the ACT Science Test
_____ = Content sampled by the ACT Science Test

TABLE 3D

Tennessee Ecology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Ecological Principles	
• construct food webs for organisms in an ecoregion in Tennessee.	

= Measured by the ACT Science Test
_____ = Content sampled by the ACT Science Test

TABLE 3D

Tennessee Ecology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 2.0 Human Population Dynamics	
The student will understand the nature of human population dynamics.	
Learning Expectations	
The student will:	
2.1. examine factors affecting human population dynamics.	
2.2. consider the consequences of human population growth.	
2.3. investigate approaches that address overpopulation.	
State Performance Indicators	
The student is able to:	
• recognize that the world population has changed significantly.	
• characterize countries as well developed or poorly developed, and identify countries that are approaching population stability.	
• give examples of the major causes of the population explosion.	
• list economical and ecological consequences of population growth.	
• describe what is meant by demographic transition.	
• analyze the sustainability of current trends in world population growth and natural resource consumption using the concept of carrying capacity.	
• compare population profiles for different countries.	
• describe the economic impact of population growth.	
• discuss how health care and education can affect the birth rate.	
• discuss how a shift from a largely rural society to a predominantly urban one influences perceptions of the environment.	
• recognize diverse cultural views about the relationship between humans and their environment.	
• summarize actions individuals can take toward producing a stable world population.	
• analyze demographic data for relationships.	

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_____ = Content sampled by the ACT Science Test

TABLE 3D

Tennessee Ecology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 3.0. Natural Resources	
The student will survey non-energy natural resources and their conservation.	
Learning Expectations	
The student will:	
3.1. explore the types, uses, and history of non-energy renewable and nonrenewable resources.	
3.2. investigate methods of conservation of common non-energy resources.	
3.3. determine the impact of waste production and management on the environment.	
State Performance Indicators	
The student is able to:	
• list examples of renewable and nonrenewable resources.	
• describe major historic eras of human history.	
• identify ways that society conserves and wastes resources.	
• recognize that there are limits to the use of natural resources.	
• evaluate the use and future status of the major renewable and nonrenewable nonenergy resources.	
• predict the effect of shortages of major non-energy resources.	
• evaluate conservation methods for natural resources	
• compare and contrast the impact of waste management methods on resource reserves.	
• analyze an industry or government that attempts to reduce waste production.	
• investigate an environmental problem that was caused by industry or government.	
• develop a plan for the conservation of a specific natural resource.	

= Measured by the ACT Science Test
_____ = Content sampled by the ACT Science Test

TABLE 3D

Tennessee Ecology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Energy	
The student will analyze energy use and its environmental consequences.	
Learning Expectations	
The student will:	
4.1. explore both conventional and alternative energy sources.	
4.2. understand the types of energy related pollution.	
4.3. compare various methods of energy conservation.	
State Performance Indicators	
The student is able to:	
• list examples of renewable and nonrenewable energy sources.	
• compare and contrast energy sources in terms of their impact on the environment.	
• discuss the pros and cons of utilizing alternative energy sources.	
• list steps that individuals and corporations can take to conserve energy.	
• describe how flowing water and wind can be used to generate electricity.	
• evaluate the consequences of continued reliance on fossil fuels.	
• formulate a plan for converting to renewable energy sources while conserving current energy sources.	
• describe how solar energy can be used as a home energy supply.	
• describe how geothermal energy can be utilized by mankind.	
• evaluate nuclear power as a means of energy production.	
• compare different means of generating electricity in terms of efficiency and production of unwanted heat energy.	
• design a house that would be virtually independent of fossil fuels for electricity and heating.	

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_____ = Content sampled by the ACT Science Test

TABLE 3D

Tennessee Ecology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 5.0. Human Interaction with the Environment	
The student will trace the interaction of humans with their environment.	
Learning Expectations	
The student will:	
5.1. understand causes, environmental effects, and methods for controlling pollution.	
5.2. investigate the environmental impact on human health.	
5.3. explore the relative sustainability of various practices in the areas of watershed management, agriculture, solid waste management, wastewater management, and development.	
State Performance Indicators	
The student is able to:	
• investigate environmental careers that relate to pollution, environmental health, and/or sustainability, such as environmental engineer, environmental toxicologist, water quality manager, environmental toxicologist, epidemiologist, environmental analyst, endocrinologist, city planner, extension agent, farmer, land developer, and public health inspector.	
• investigate the effects of acid rain on the environment.	
• compare and contrast pollution problems in different places in TN or in the US, given data.	
• conduct and interpret the results of various water quality tests.	
• apply the concept of trade-off to the analysis of issues related to prevention, control, and remediation of pollution, given a scenario.	
• enumerate potential health effects of exposure to various environmental hazards.	
• identify appropriate risk-reduction actions, given an exposure-risk scenario.	
• compare the costs and benefits of Integrated Pest Management (IPM).	
• compare and contrast past and present agricultural practices, including current Best Management Practices, in terms of their environmental impact.	
• evaluate the impact of various human activities on watersheds and suggest possible mitigation measures to protect these areas.	
• explain the chemistry associated with various pollution problems.	
• describe how the concentration of harmful substances can increase at successive levels in a food chain.	
• research the history of agriculture, including changes in technologies, values and attitudes, legislation, and local and global interactions.	

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_____ = Content sampled by the ACT Science Test

TABLE 3D

Tennessee Ecology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 5.0. Human Interaction with the Environment	
The student will trace the interaction of humans with their environment.	
• conduct a study of a local watershed.	

= Measured by the ACT Science Test
_____ = Content sampled by the ACT Science Test

TABLE 3D

Tennessee Ecology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 6.0. Personal and Civic Responsibility	
The student will conduct activities that illustrate environmental responsibility and stewardship.	
Learning Expectations	
The student will:	
6.1. evaluate and articulate his/her own personal views concerning the environment.	
6.2. recognize his/her rights and responsibilities as a citizen in maintaining a healthy environment.	
State Performance Indicators	
The student is able to:	
• analyze the effects of his/her personal actions on the environment.	
• identify ways that he or she can contribute to environmental quality in his or her community.	
• support a position on a critical environmental issue.	
• describe the potential impact of citizen participation on issues related to the environment and their community.	
• conduct an environmental activity that provides a solution to an environmental problem.	
• develop an action plan for addressing an environmental issue and to participate thoughtfully and effectively in environmental decision-making.	

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_____ = Content sampled by the ACT Science Test

TABLE 3E

Tennessee Environmental Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Ecological Principles	
The student will investigate factors that influence and are influenced by the natural environment.	
Learning Expectations	
The student will:	
1.1. understand the structure and function of ecosystems.	
1.2. explore the major biomes of the earth and the biodiversity associated with these biomes.	
1.3. analyze and interpret population dynamics.	
1.4. relate earth processes to ecosystem dynamics.	
1.5. understand interdependence in ecosystems.	
1.6. explore factors affecting the vulnerability of a species to extinction.	
State Performance Indicators	
The student is able to:	
• categorize organisms as producers, consumers, or decomposers, given a description of their environment.	
• identify commensalism, parasitism, and mutualism, given a scenario with examples.	
• construct and interpret graphs associated with an organism's needs within a habitat.	
• recognize that energy for life is provided by the sun and is captured by plants through photosynthesis.	
• label the parts of a the hydrological cycle.	
• draw a food web, given organisms and their role in the environment.	
• select animals or plants indigenous to an environment by examining pictures or scenarios.	
• determine the biome in which an animal or plant lives, given a description.	
• trace the flow of energy and the cycling of matter between living systems and the physical environment.	
• explore the biodiversity of various biomes.	
• explain how variations within a species affects the likelihood of survival.	
• discuss ways that populations can change over time.	
• trace energy flow in ecosystems.	
• illustrate that the abundance and distribution of living organisms are limited by available energy and certain forms of matter.	
• research a specific biome and make a class presentation.	
• read and interpret a population graph.	
• describe succession in ecosystems.	
• relate climate to biome type.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3E

Tennessee Environmental Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Ecological Principles	
• identify possible causes of extinction.	
• observe examples of interdependence in a mini-ecosystem.	
• analyze the relationship of habitat changes to plant and animal population density.	
• construct food webs for organisms in an ecoregion of Tennessee.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3E

Tennessee Environmental Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 2.0 Human Population Dynamics	
The student will understand the nature of human population dynamics.	
Learning Expectations	
The student will:	
2.1. examine factors affecting human population dynamics.	
2.2. consider the consequences of human population growth.	
2.3. investigate approaches that address overpopulation.	
State Performance Indicators	
The student is able to:	
• compare ancient populations to present populations.	
• analyze the role of agriculture in relation to human population growth.	
• identify the major causes of the population explosion.	
• describe the economic impact of population growth.	
• discuss how health care and education affect population growth rates.	
• list the ecological consequences of continued population growth.	
• discuss the pros and cons of lowering reproductive rates as a possible solution to the population problem.	
• compare population profiles for different countries.	
• recognize diverse cultural views about the relationship between humans and their environment.	
• summarize actions individuals can take toward producing stable world population.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3E

Tennessee Environmental Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 3.0. Natural Resources	
The student will survey non-energy natural resources and their conservation.	
Learning Expectations	
The student will:	
3.1. explore the types, uses, and history of non-energy renewable and nonrenewable resources.	
3.2. investigate methods of conservation of common non-energy resources.	
3.3. determine the impact of waste production and management on the environment.	
State Performance Indicators	
The student is able to:	
• list examples of renewable and nonrenewable resources.	
• describe major eras of human history.	
• evaluate the benefits and drawbacks of man's use of mineral resources.	
• list ways that society conserves and wastes resources.	
• distinguish between layers of soil using characteristics such as composition, texture, and plant and animal influences.	
• interpret the effectiveness of various conservation strategies on air, water, and soil.	
• research how technological advances have impacted the environment, such as fertilizers, freon, and acid rain.	
• recognize that there are limits to the use of natural resources.	
• evaluate the use and status of the major renewable and nonrenewable non-energy resources.	
• predict the effect of shortages of major mineral resources.	
• evaluate conservation methods for natural resources.	
• compare and contrast the impact of waste management methods on resource reserves.	
• develop a plan for the conservation of a specific natural resource.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3E

Tennessee Environmental Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Energy	
The student will analyze energy use and its environmental consequences.	
Learning Expectations	
The student will:	
4.1. explore both conventional and alternative energy sources.	
4.2. understand the types of energy related pollution.	
4.3. compare various methods of energy conservation.	
State Performance Indicators	
The student is able to:	
• list examples of renewable and nonrenewable energy sources.	
• list examples of various energy resources and describe their origins.	
• interpret the difference amount and kind of energy resources used in an area from provided graphs.	
• research and report on the importance of energy conservation.	
• discuss fossil fuel exploration, reserves, and production.	
• research careers that relate to energy, heat, or electricity.	
• compare and contrast energy sources in terms of their impact on the environment.	
• discuss the pros and cons of utilizing alternative energy sources.	
• list steps that individuals and corporations can take to conserve energy.	
• demonstrate how solar energy can be used as a home energy supply.	
• describe how geothermal energy can be utilized by mankind.	
• evaluate nuclear power as a means of energy production.	
• describe how flowing water and wind can be used to generate electricity.	
• evaluate the consequences of continued reliance on fossil fuels.	
• compare the energy efficiency of major appliances.	

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TABLE 3E

Tennessee Environmental Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 5.0. Human Interaction with the Environment	
The student will trace the interaction of humans with their environment.	
Learning Expectations	
The student will:	
5.1. understand the causes, environmental effects, and methods for controlling pollution.	
5.2. investigate the environmental impact on human health.	
5.3. explore the relative sustainability of various practices in the areas of watershed management, agriculture, solid waste management, wastewater management, and development.	
State Performance Indicators	
The student is able to:	
• investigate environmental careers that relate to pollution, environmental health, and/or sustainability, such as environmental engineer, environmental toxicologist, water quality manager, environmental toxicologist, epidemiologist, environmental analyst, endocrinologist, city planner, extension agent, farmer, land developer, and public health inspector.	
• compare and contrast pollution problems in different places in TN or in the US, given data.	
• identify sources of contaminated runoff, given a map with land uses indicated.	
• research the causes and potential environmental effects of specific air and water pollution problems, given access to governmental websites and other resources.	
• identify potential health effects of exposure to various environmental hazards, including radon, UV radiation, ground-level ozone, and cigarette smoke.	
• suggest risk-reduction actions for potentially hazardous substances.	
• compare and contrast various practices in terms of their relative sustainability and economic, societal and environmental impact.	
• evaluate and identify conservation measures in the home and create a personal conservation plan.	
• identify the effects of ozone depletion and Global Warming.	
• interpret data on ground level ozone, acid rain, and stratospheric ozone, given color-coded maps.	
• construct an appropriate Integrated Pest Management plan, given a pest problem scenario.	
• compare and contrast different agricultural practices in terms of their environmental impact.	

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TABLE 3E

Tennessee Environmental Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 6.0. Personal and Civic Responsibility	
The student will understand his/her personal and civic responsibility concerning issues related to the environment.	
Learning Expectations	
The student will:	
6.1. evaluate and articulate his/her own personal views concerning the environment.	
6.2. recognize his/her rights and responsibilities as a citizen in maintaining a healthy environment.	
State Performance Indicators	
The student is able to:	
• analyze the effects of his/her personal actions on the environment.	
• identify ways that he/she can contribute to environmental quality in their community.	
• articulate a position on a critical environmental issue.	
• describe the potential impact of citizen participation on issues related to the environment and their community.	
• develop an action plan for addressing an environmental issue and participate thoughtfully and effectively in environmental decision-making.	

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TABLE 3F

Tennessee Geology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Maps	
The student will develop map interpretation skills for topographic and geologic features.	
Learning Expectations	
The student will:	
1.1. read and interpret topographic maps.	
1.2. investigate rock types, time periods, and faults from geologic maps.	
1.3. investigate technologies used to map various features.	
1.4. apply maps to solve land-use problems and for planning.	
State Performance Indicators	
The student is able to:	
• identify longitude and latitude lines.	
• investigate the concept of scale as it applies to maps.	
• identify basic map symbols and legends.	
• define common rock types.	
• define elevation.	
• determine latitude and longitude of specific map points.	
• determine scaled map distances.	
• determine elevations of specific points from a topographic map.	
• recognize basic topographic map symbols from a legend/key.	
• construct a 3-D representation of a topographical map or construct contour lines from a 3-D model.	
• construct a profile from a topographic map.	
• identify landforms and direction of stream flow using a topographic map.	
• interpret basic rock types, time periods, and faults from geologic maps.	
• determine and measure compass readings from selected sites.	
• identify practical applications for map interpretation skills.	
• investigate methods of remote sensing for measuring and monitoring the earth's crust.	
• use a GPS instrument to identify latitude, longitude, and elevation of a location.	
• create a topographic map of a landform from collected data.	
• successfully navigate an orienteering course.	

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TABLE 3F

Tennessee Geology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 2.0 Matter and Minerals	
The student will explore matter and how it relates to the formation of minerals.	
Learning Expectations	
The student will:	
2.1. investigate the atom as the basic building block of all matter.	
2.2. apply the periodic table as a learning tool.	
2.3. investigate the structure, geometry, and shape of crystals.	
2.4. distinguish between physical and chemical properties of minerals.	
2.5. investigate the location, abundance, and use of minerals.	
State Performance Indicators	
The student is able to:	
• classify a substance as being made of atoms or molecules given its chemical symbol or formula.	
• select groups of elements as being reactive or nonreactive metals, nonmetal, or gases, given the periodic table.	
• recognize that water is the major solvent that releases minerals from the earth.	
• evaluate the benefits and drawbacks of man's use of mineral resources given a scenario.	
• identify characteristics of all minerals (e.g., naturally occurring, inorganic, solid, definite structure, and composition).	
• recognize or create a representative model of an atom, using the periodic table.	
• build models of the six major crystal systems.	
• recognize that the crystal form of minerals depends upon atomic size, method of bonding, and the environment.	
• identify mineral samples using simple property tests (hardness, luster, streak, cleavage/fracture, specific gravity, and other special properties) and a mineral table.	
• explore the role of gems as minerals and their value to man.	
• create a presentation on minerals including a description (specific gravity, crystalline system, chemical formula, physical properties, etc,) an illustration, mining techniques, occurrences, and uses.	
• classify minerals (silicates, native elements, carbonates, and sulfates), using chemical formulas.	
• create a brochure on the mineral resources of Tennessee.	

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TABLE 3F

Tennessee Geology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 2.0 Matter and Minerals	
• investigate technological advances related to minerals including their excavation and use (mining and removal techniques).	

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TABLE 3F

Tennessee Geology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 3.0. Rocks and the Rock Cycle	
The student will investigate the three rock classes and the rock cycle.	
Learning Expectations	
The student will:	
3.1. identify and differentiate among the three rock classes.	
3.2. examine the processes responsible for forming the three rock classes.	
3.3. examine characteristics within each rock class.	
3.4. analyze and interpret the rock cycle.	
State Performance Indicators	
The student is able to:	
• distinguish among sedimentary, igneous, and metamorphic rocks.	
• diagram the rock cycle including the processes involved in the formation of each rock class.	
• recognize that rocks are composed of minerals.	
• identify rock uses.	
• distinguish between intrusive (plutonic) and extrusive (volcanic) igneous rocks.	
• identify common igneous rocks (e.g., granite, rhyolite, basalt, gabbro, obsidian, pumice) using physical properties and a table.	
• identify plutonic bodies (e.g., sill, dike, batholith, and laccolith).	
• understand sedimentary processes.	
• distinguish between clastic vs. non-clastic and detrital vs. chemical.	
• identify sedimentary rock features such as stratification, fossils, graded bedding, ripple marks, and mud cracks.	
• identify basic sedimentary rocks (e.g., sandstone, shale, limestone, coquina, coal, conglomerate) using physical properties and a table.	
• differentiate between foliated and non-foliated metamorphic rocks.	
• compare and contrast regional and contact metamorphism.	
• identify common metamorphic rocks (e.g., gneiss, marble, schist, slate, quartzite) using physical properties and a table.	
• interpret and explain Bowen's reaction series.	
• explain gradational metamorphism with index minerals and metamorphic rock types using a table.	

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TABLE 3F

Tennessee Geology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Geologic History	
The student will explore the geologic history of the Earth and evidence of life through time.	
Learning Expectations	
The student will:	
4.1. interpret and evaluate the nature of geologic time.	
4.2. investigate the evolution of Earth.	
4.3. investigate the history of life.	
4.4. interpret and evaluate the fossil record for evidence of biological evolution.	
4.5. demonstrate the effect of the environment in the formation and extinction of species through geologic time using fossils.	
State Performance Indicators	
The student is able to:	
• recognize how scientists estimate the age of the Earth.	
• explain the law of uniformitarianism.	
• recognize that fossils are found in sedimentary rock.	
• construct mock fossils.	
• compare and contrast fossil forms of life to modern organisms.	
• recognize the difference between absolute and relative time (i.e., using a family tree).	
• recognize that fossils contained in sedimentary rock provide evidence for life forms, changes in those life forms, and environmental changes.	
• examine the fossil record to determine the environmental adaptations of organisms.	
• cite and explain the evidence for plate tectonics (e.g., fossil record, mountain ranges, rock strata, paleomagnetism, paleoclimates, and configuration of the continents.).	
• compare and contrast the mechanisms for determining the advance of geologic history: relative and absolute dating.	
• construct and interpret a geologic timetable for the evolution of Earth and the history of life.	
• differentiate the relative age of various fossils in sedimentary rock, given a diagram of rock strata.	
• interpret the sequence of rock strata using superposition, cross cutting relationships, inclusions, the fossil record, and absolute data techniques.	
• create a diorama that depicts the ancient environment or habitat in which a particular fossil existed.	
• predict how environmental changes will affect the development of a new species or extinction of an existing species, given a written scenario.	

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TABLE 3F

Tennessee Geology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Geologic History	
• describe what a geologic time traveler might see in the future of Tennessee.	

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_____ = Content sampled by the ACT Science Test

TABLE 3F

Tennessee Geology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 5.0. Plate Tectonics	
The student will relate the theory of plate tectonics to the evidence for continental drift and seafloor spreading.	
Learning Expectations	
The student will:	
5.1. recognize different types of plate boundaries (e.g., divergent, convergent, and transform including continental vs. oceanic).	
5.2. interpret evidence for plate tectonics using paleomagnetism, fossil record, continental boundaries, and hot spots.	
5.3. recognize that convection currents are the driving mechanisms for plate tectonics.	
5.4. describe the processes associated with volcanoes, earthquakes, and mountain building.	
State Performance Indicators	
The student is able to:	
• identify plate boundaries on diagrams.	
• match boundaries of continents by shape as evidence of plate tectonics.	
• identify the layers of the earth's structure.	
• identify geologic features associated with divergent, convergent, and transform (continental and oceanic) plate boundaries.	
• identify the evidence for plate tectonics using paleomagnetism, fossil record, continental boundaries, and hot spots.	
• describe how convection currents drive plate tectonics.	
• associate volcanoes and earthquake activity with plate boundaries using a map.	
• distinguish among reverse, normal, and strike-slip faults.	
• distinguish between anticline and syncline.	
• label illustrations of movement of convection cells within mantle and their relationship to convergent and divergent plate boundaries.	
• correlate plate movement by plotting movement of hot spots through time.	
• predict the location and arrangement of the continents at a specified future time.	
• describe the location of the Hawaiian islands at a specified future time.	

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TABLE 3F

Tennessee Geology Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 6.0. Landforms	
The student will investigate landforms created by many different surficial processes and their relationships to various sources of energy in the Earth System.	
Learning Expectations	
The student will:	
6.1. investigate the hydrosphere and its effect on various relationships to landforms.	
6.2. associate surface processes such as wind, glaciers, gravity, oceans, rivers, and mankind with resulting landforms.	
6.3. understand the role of groundwater.	
State Performance Indicators	
The student is able to:	
• recognize that the earth's geologic features change.	
• illustrate the hydrologic cycle and distinguish among condensation, evaporation, precipitation, transpiration, groundwater, runoff, bodies of water, etc.	
• recognize groundwater as a major source of fresh water.	
• describe the landforms associated with deserts, glaciers, shorelines, and rivers.	
• describe the nature of groundwater and define the elements of groundwater features.	
• discuss stream discharge using the Tennessee River or local stream system as an example.	
• describe the fluvial processes of erosion, transportation, and deposition.	
• illustrate various drainage basin models and identify different types of drainage patterns.	
• relate the characteristics of a river's age with respect to its velocity, channel shape, depth, and discharge.	
• explain the processes by which a stream erodes and transports its load (suspension, saltation, and bedload).	
• identify meanders, point bars, cut bank, and cutoffs using a map (e.g., lower Mississippi River).	
• define a floodplain and describe the behavior of a stream channel and natural levee formation during a flood.	
• describe the formation of river deltas.	
• investigate careers associated with water systems.	
• investigate the influence of landforms on man's cultural, social and economic development.	

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TABLE 3G

Tennessee Life Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Cells	
The student will investigate the structures and functions of the cell membrane, cellular organelles, and component biomolecules related to the major cell processes.	
Learning Expectations	
The student will:	
1.1. compare and contrast the chemistry of biomolecules and investigate their roles in cell structure and metabolism.	
1.2. explore and compare the organelles of different cell types.	
1.3. probe the composition of the cell membrane and it significance to homeostasis.	
1.4. analyze the various cell processes.	
Performance Indicators	
The student is able to:	
• identify major cellular organelles, given a diagram.	
• distinguish between plant and animal cells, given diagrams or scenarios.	
• predict the movement of water molecules across the cell membrane, given solutions of different concentrations.	
• compare and contrast the cell cycle in plant and animal cells, given a diagram.	
• relate the structure of the cell membrane to the role of maintaining homeostasis.	
• define selective permeability, homeostasis, and plasmolysis.	
• distinguish between proteins, carbohydrates, and lipids.	
• distinguish between active and passive transport, given different molecules and concentrations.	
• distinguish among various types of nucleic acids.	

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TABLE 3G

Tennessee Life Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 2.0. Ecological Interactions	
The student will investigate the relationship and interaction between living organisms and their environment.	
Learning Expectations	
The student will:	
2.1. distinguish between abiotic and biotic factors in the environment.	
2.2. compare populations, communities, and ecosystems.	
2.3. analyze the flow of nutrients and energy in an environment.	
2.4. distinguish among producers, consumers, and decomposers in food chains, food webs, and ecological pyramids.	
2.5. distinguish between autotrophs and heterotrophs by comparing plant and animal structures.	
2.6. contrast different types of symbiotic relationships.	
2.7. explore how human activities can affect the balance of an ecosystem.	
Performance Indicators	
The student is able to:	
• distinguish between abiotic and biotic factors in an environment.	
• distinguish among populations, communities, and ecosystems, given examples.	
• examine nutrient and energy relationships in an energy pyramid.	
• classify organisms as producers, consumers, and decomposers, given their behavior and environment.	
• infer how human activities can affect the balance of an ecosystem.	
• differentiate among symbiotic relationships, given descriptions of commensalism, parasitism, and mutualism.	
• interpret population growth curves.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3G

Tennessee Life Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 3.0. Energy Production and Use	
The student will compare and contrast the processes involved in the transfer of energy during photosynthesis and respiration.	
Learning Expectations	
The student will:	
3.1. identify the reactants and products of photosynthesis and respiration.	
3.2. compare and contrast the processes of photosynthesis and respiration.	
3.3. analyze the carbon, oxygen, and water cycles.	
3.4. distinguish between aerobic and anaerobic respiration.	
Performance Indicators	
The student is able to:	
• identify the cell organelles in which photosynthesis and respiration occur, given diagrams or descriptions.	
• identify the reactants and products of photosynthesis and respiration, given equations.	
• interpret carbon, oxygen, and water cycles, given diagrams.	
• distinguish between aerobic and anaerobic respiration, given descriptions.	
• analyze the relationship between photosynthesis and respiration, given diagrams and descriptions.	

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TABLE 3G

Tennessee Life Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Reproduction and Inheritance	
The student will investigate how patterns of inheritance are linked to reproduction and infer that hereditary information contained in DNA is transmitted from parent to offspring.	
Learning Expectations	
The student will:	
4.1. distinguish between sexual and asexual reproduction.	
4.2. organize the stages of cell division sequentially for mitosis and meiosis.	
4.3. distinguish between dominant and recessive traits.	
4.4. distinguish between purebred and hybrid traits.	
4.5. explore various modes of inheritance (i.e., co-dominance, incomplete dominance, multiple alleles, sex-linked, and polygenic traits) using the principles of Mendelian inheritance.	
4.6. relate genetic mutations with changes in DNA.	
4.7. distinguish between mitosis and meiosis.	
Performance Indicators	
The student is able to:	
• distinguish between asexual and sexual reproduction, given examples.	
• distinguish between mitosis and meiosis.	
• recognize the inheritance of traits using a Punnett Square.	
• identify the dominant trait resulting from a monohybrid cross, using the genotypes of the parents.	
• determine the phenotype given a particular gene combination.	
• determine the genotypic and phenotypic ratio of a monohybrid cross.	
• determine the dominant and recessive trait given the phenotypic ratios from a monohybrid cross.	
• determine the number of chromosomes following mitosis and meiosis, given the number of chromosomes in the original cell.	
• recognize and distinguish among sex-linked, co-dominant, incomplete dominant, polygenic, and multiple allele traits.	
• determine the nature of the mutation that may have occurred when comparing complementary DNA strands.	

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TABLE 3G

Tennessee Life Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 5.0. Classification and Environmental Diversity	
The student will investigate the diversity of organisms by analyzing taxonomic systems, exploring diverse environments, and comparing life cycles.	
Learning Expectations	
The student will:	
5.1. establish criteria for designing a classification system.	
5.2. compare systems of classification.	
5.3. infer the types of organisms native to specific major biomes.	
5.4. distinguish among the life cycles of plants and animals.	
Performance Indicators	
The student is able to:	
• infer the need for a biological classification system.	
• compare Aristotle's classification system to the Linnean system of classification.	
• explain how binomial nomenclature is used to name living things.	
• identify, in correct sequence, the seven major classification groups.	
• identify the characteristics of each kingdom in the 6-kingdom classification system.	
• infer the relatedness of different organisms using the Linnean system of classification, given pictures of a variety of different plants or animals and a classification key.	
• distinguish between the six major land biomes and the two major water biomes, given descriptions.	
• classify organisms, given a dichotomous key containing characteristics of the organisms.	
• infer animals or plants indigenous to an environment, given pictures or diagrams of organisms and a description of the environment.	
• determine whether an organism undergoes complete or incomplete metamorphosis, given pictures or diagrams of the organism in its stages of development.	
• infer the body symmetry of an organism, given a diagram or picture of the organism.	

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TABLE 3G

Tennessee Life Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 6.0. Biological Evolution	
The student will investigate physical, environmental, and chemical evidence that indicates that life on earth has changed over time.	
Learning Expectations	
The student will:	
6.1. investigate the process of fossil formation.	
6.2. interpret various forms of evidence for biological evolution.	
6.3. distinguish between the concepts of relative and absolute dating.	
6.4. relate environmental change to natural selection, mutation, and adaptation that may lead to the emergence of a new species or the extinction of an existing species.	
6.5. use current knowledge of DNA and comparative anatomy as evidence for biological change.	
Performance Indicators	
The student is able to:	
• arrange various fossils on a diagram of sedimentary rock strata, using a collection of fossil pictures.	
• determine the process of fossil formation, given a set of fossil pictures or fossil samples.	
• compare and contrast relative and absolute dating techniques.	
• predict how environmental change can contribute to the emergence of a new species, change in a population size, or extinction of an existing species.	
• infer how natural selection explains why species with a common ancestor have adapted differently.	
• use a geologic time scale to associate the impact of global environmental changes with the dominant species of each geologic period.	
• compare homologous and analogous structures to determine the relatedness of species, using pictures.	
• explain the relatedness of species using DNA strands.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3H

Tennessee Physical Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Force and Motion	
The student will explore the concepts of force and motion.	
Learning Expectations	
The student will:	
1.1. investigate the relationship among speed, velocity, and acceleration.	
1.2. analyze and apply Newton's three laws of motion.	
1.3. relate gravitational force to mass.	
1.4. demonstrate the relationship among work, power, and machines.	
1.5. examine the law of conservation of momentum in everyday situations.	
State Performance Indicators	
The student is able to:	
• distinguish between speed and velocity, given a scenario.	
• relate inertia, force, or action-reaction forces to Newton's three laws of motion, given an illustration, diagram, or *scenario*.	
• distinguish between mass and weight using SI units, given examples.	
• identify simple machines, given illustrations of *machines in action.*	
• interpret a distance-time graph for velocity or a velocity-time graph for acceleration, given the appropriate graph.	
• solve application problems related to velocity, acceleration, force, work, and power using appropriate units of measurement, given the *equations.*	
• distinguish among the concepts inherent in Newton's three laws of motion, given a scenario.	
• choose the illustration or scenario that relates the effect of gravitational force on falling bodies or satellites.	
• recognize the simple machines found in a compound machine, given an illustration of a machine in action.	
• solve application problems related to mechanical advantage and the efficiency of simple machines, given appropriate equations.	
• choose the correct representation of the law of conservation of momentum, given an illustration.	

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TABLE 3H

Tennessee Physical Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 2.0 Structure and Properties of Matter	
The student will examine the structure, properties, and classes of matter.	
Learning Expectations	
The student will:	
2.1. classify a material as a pure substance or a mixture.	
2.2. explore matter in terms of specific properties.	
State Performance Indicators	
The student is able to:	
• distinguish among the phases of matter in terms of volume, shape, and particle arrangement, given illustrations.	
• identify a material as a pure substance or a mixture, given a description of the material.	
• distinguish among elements, compounds, solutions, colloids, and suspensions, given examples.	
• identify common elements, given symbols or names.	
• distinguish between metals and nonmetals, given examples.	
• identify the three major subatomic particles (*protons, neutrons*, and *electrons*) based on their location, charge, and relative mass, given descriptions.	
• identify chemical formulas for common compounds (i.e., H_2O, NaCl, CO_2, HCl, Fe_2O_3, $C_6H_{12}O_6$, NaOH).	
• solve application problems related to density, mass, and volume, given the equation.	
• predict the behavior of an object in a fluid, given their relative densities.	
• identify the atomic number, atomic mass, number of protons, number of neutrons, and number of electrons in an atom of a given element, using the periodic table.	
• analyze the relationships among pressure, temperature, and volume of gases, and pressure to velocity of fluids, given scenarios.	

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TABLE 3H

Tennessee Physical Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 3.0. Interactions of Matter	
The student will investigate the interactions of matter.	
Learning Expectations	
The student will:	
3.1. investigate chemical and physical changes.	
3.2. compare and contrast ionic and covalent bonding.	
3.3. analyze chemical equations.	
3.4. compare and contrast acids and bases.	
3.5. explore the law of conservation of mass.	
State Performance Indicators	
The student is able to:	
• determine whether a change in matter is physical or chemical, given a scenario.	
• identify the reactants and/or products in a chemical reaction, given a chemical equation.	
• identify a substance as acidic, basic, or neutral, given its pH.	
• identify a chemical bond as ionic or covalent, given the elements in a compound.	
• identify a chemical reaction as synthesis, decomposition, single-replacement, or double-replacement, given an equation.	
• select the correct coefficient(s) to balance a chemical equation, given a list of coefficients.	
• apply the law of conservation of mass in a chemical reaction by selecting the balanced equation.	
• distinguish between endothermic and exothermic reactions, given a description of the temperature change in a reaction.	
• identify the effect of acid rain on the environment, given a scenario.	
• select the product(s) given the reactant(s) of a chemical reaction.	

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TABLE 3H

Tennessee Physical Science Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Energy	
The student will compare and contrast various forms of energy.	
Learning Expectations	
The student will:	
4.1. investigate the properties and behaviors of waves.	
4.2. explore and explain the nature of sound and light energy.	
4.3. examine the applications and effects of heat energy.	
4.4. probe the fundamental principles and applications of electricity.	
4.5. distinguish between nuclear fission and nuclear fusion.	
4.6. investigate the law of conservation of energy.	
State Performance Indicators	
The student is able to:	
• classify a wave as transverse or longitudinal, given a description or an illustration.	
• identify wavelength, frequency and amplitude, given a description or an illustration.	
• identify the boiling and/or freezing point of water, given the Celsius, Fahrenheit, or Kelvin temperature scales.	
• classify sound as a longitudinal, mechanical wave and light as a transverse, electromagnetic wave, given an illustration or description.	
• identify a wave's behavior as reflection, refraction, diffraction, or interference, given an example.	
• classify the transfer of heat energy as conduction, convection, or radiation, given an example.	
• select a scenario that represents the law of conservation of energy, given an illustration.	
• solve application problems related to voltage, resistance, and current in a simple circuit, given the equation.	
• distinguish between nuclear fission and nuclear fusion, given a scenario.	
• solve problems regarding heat, mass, specific heat capacity, and temperature change, given the equation.	

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TABLE 3J

Tennessee Biology I Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 1.0. Cells	
The student will investigate the structures and functions of cell membranes, organelles, and component biomolecules as related to major cell processes.	
Learning Expectations	
The student will:	
1.1. compare and contrast the chemistry of biomolecules and investigate their roles in cell structure and metabolism.	
1.2. explore and compare the organelles of different cell types.	
1.3. probe the composition of the cell membrane and its significance in maintaining homeostasis.	
1.4. analyze cell processes.	
State Performance Indicators	
The student is able to:	
• identify major cell organelles and their functions, given a diagram, description, and/or scenario.	
• distinguish between plant and animals cells, given diagrams or scenarios.	
• predict the movement of water molecules across a semi-permeable membrane, given a diagram showing solutions of different concentrations.	
• sequence a series of diagrams depicting the movement of chromosomes during the cell cycle.	
• compare and contrast the cell cycle in plant and animal cells, given a diagram or description.	
• distinguish among proteins, carbohydrates, lipids, and nucleic acids, given structural formulas.	
• identify a positive test for carbohydrates and lipids when given an experimental procedure, data, and results.	
• distinguish between active and passive transport, given examples.	
• evaluate the role of meiosis in maintaining genetic variability and continuity, given a scenario.	
• determine the number of chromosomes following mitosis or meiosis, given the number of chromosomes in the original cell.	
• recognize the importance and the mechanisms of homeostasis to the viability of organisms, given a scenario.	
• identify the biomolecules responsible for communication, response, regulation, or reproduction in the cell.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3J

Tennessee Biology I Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 2.0 Interactions	
The student will investigate the interactions of organisms within their environment through different nutritional relationships, population dynamics, and patterns of behavior.	
Learning Expectations	
The student will:	
2.1. compare and contrast the different types of symbiotic relationships.	
2.2. distinguish between abiotic and biotic factors in an environment.	
2.3. analyze the flow of energy in an ecosystem using energy pyramids.	
2.4. analyze innate and learned behaviors and relate these to the survival of organisms.	
2.5. investigate the roles of producers, consumers, and decomposers in an ecosystem.	
2.6. examine the impact of human activity on ecosystems.	
State Performance Indicators	
The student is able to:	
• identify commensalism, parasitism, and mutualism, given a scenario with examples.	
• classify an organism as a producer, consumer, or decomposer, given its behavior.	
• identify abiotic and biotic factors, given a description or an illustration of an ecosystem.	
• make inferences about how environmental factors affect population growth, given a scenario.	
• examine the energy flow through the trophic levels of an ecosystem, given a diagram and/or scenario.	
• determine the effects of human activities on ecosystems, given a scenario.	
• analyze and interpret population growth curves, given graphs.	
• distinguish between a learned and innate behavior, given a description of that behavior.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3J

Tennessee Biology I Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 3.0. Photosynthesis and Respiration	
The student will compare and contrast the biochemical processes involved in the transfer of energy during photosynthesis and respiration and analyze the major biogeochemical cycles in the biosphere.	
Learning Expectations	
The student will:	
3.1. compare and contrast the light dependent and light independent reactions of photosynthesis.	
3.2. investigate the relationship between the processes of photosynthesis and respiration.	
3.3. analyze the carbon, oxygen, nitrogen, and water cycles in the biosphere.	
3.4. explore the efficiency of aerobic and anaerobic respiration.	
State Performance Indicators	
The student is able to:	
• identify the reactants and products of photosynthesis and/or respiration, given equations.	
• identify the cell organelle in which photosynthesis or respiration occurs, given a diagram.	
• interpret a diagram of the carbon-oxygen cycle.	
• distinguish between aerobic and anaerobic respiration in terms of the presence or absence of oxygen and ATP produced.	
• investigate the interdependence of photosynthesis and respiration in living organisms, given a diagram or scenario.	
• relate how energy is transferred from cellular energy to cellular work.	

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TABLE 3J

Tennessee Biology I Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Genetics and Biotechnology	
The student will investigate genetics and heredity, different methods of reproduction, patterns of inheritance, and genetic disorders; as well as explore and evaluate DNA technologies from both scientific and ethical perspectives.	
Learning Expectations	
The student will:	
4.1. investigate the structure of DNA and RNA.	
4.2. relate the structure of DNA and RNA to the processes of replication and protein synthesis.	
4.3. compare and contrast asexual and sexual reproductive strategies used by organisms.	
4.4. apply the principles of Mendelian inheritance to make predictions about offspring.	
4.5. examine modes of inheritance involving sex linkage, co-dominance, incomplete dominance, multiple alleles, and polygenic traits.	
4.6. investigate the causes and effects of mutations.	
4.7. identify the causes and effects of genetic disorders in plants and animals.	
4.8. investigate the scientific and ethical ramifications of genetic engineering, recombinant DNA, selective breeding, hybridization, cell and tissue culturing, transgenic animals, and DNA fingerprinting.	
State Performance Indicators	
The student is able to:	
• distinguish between asexual and sexual methods of reproduction, using a scenario.	
• identify dominant and recessive traits, given the results of a monohybrid cross in a scenario.	
• determine the genotype and phenotype of a monohybrid cross, given a Punnett square.	
• relate changes in the DNA instructions that cause mutations, given diagrams.	
• recognize the major functions of DNA as replication or transcription, given diagrams and/or descriptions.	
• identify the sex chromosomes in humans and recognize inheritance patterns that are sex-linked (X-linked), using a pedigree or scenario.	
• analyze modes of inheritance including co-dominance, incomplete dominance, and multiple alleles using genetic problems or Punnett squares.	
• analyze DNA fingerprinting using an illustration of DNA.	
• determine the probability of having a child with an autosomal disorder, such as cystic fibrosis or Tay-Sachs , given a scenario or genetic problem.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3J

Tennessee Biology I Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 4.0. Genetics and Biotechnology	
• differentiate the process of replication, transcription, and translation, given descriptions and/or diagrams.	
• analyze a dihybrid cross to determine the probability of a particular trait, given a completed Punnett square.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3J

Tennessee Biology I Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 5.0. Diversity	
The student will investigate the diversity among organisms by analyzing classification systems, exploring diverse environments, and comparing life cycles.	
Learning Expectations	
The student will:	
5.1. establish criteria for designing a classification system and compare historically relevant systems of classification.	
5.2. infer the types of organisms native to specific environments included in the major biomes present on earth.	
5.3. compare plant and animal structures and life cycles to recognize relationships among organisms.	
State Performance Indicators	
The student is able to:	
• infer animals or plants indigenous to an environment, given pictures or diagrams of the organisms and a description of the environment.	
• infer the biome in which an animal or plant lives, given a description of the organism and pictures of various biomes.	
• infer the relatedness of different organisms using the Linnean system of classification, given pictures and/or descriptions of a variety of different plants or animals and a classification key.	
• determine the genus and species of an organism, given a dichotomous key containing descriptions of the characteristics at each classification level.	
• determine whether an insect undergoes complete or incomplete metamorphosis, given pictures, diagrams, or descriptions.	
• infer the body symmetry of an organism, given a diagram, picture, and/or description.	
• infer the function of a system or organ, given structural descriptions of an earthworm, crayfish, frog, or human.	
• compare and contrast the life cycles of various organisms to include alternation of generations, given diagrams or pictures.	

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TABLE 3J

Tennessee Biology I Standards, Expectations, and State Indicators	**PLAN and ACT Science** **College Readiness Standards**
Content Standard: 6.0. Biological Change	
The student will investigate the process of natural selection and examine the evidence for biological evolution.	
Learning Expectations	
The student will:	
6.1. interpret and evaluate the evidence for biological evolution in the fossil record.	
6.2. investigate how mutation, natural selection, and adaptation impact the emergence of new species.	
6.3. recognize the contributions of scientists, including Darwin, that led to the concept of evolution.	
6.4. apply current knowledge of DNA and comparative anatomy to provide evidence for biological evolution.	
State Performance Indicators	
The student is able to:	
• differentiate between the relative age of fossils in sedimentary rock, given a diagram, scenario, or description of rock strata.	
• predict how environmental changes affect the formation of a new species or the extinction of an existing species, given a scenario.	
• apply knowledge of divergent evolution, as in Darwin's finches, to determine why species with a common ancestor have adapted differently, given a diagram or description.	
• compare homologous structures in species to determine the relatedness of certain species, given diagrams or pictures.	
• differentiate between natural selection and selective breeding, given a scenario.	
• recognize the relatedness of species using illustrations of anatomical structures, protein sequences, and/or DNA bands.	

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TABLE 3K

Tennessee Biology II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Comparative Anatomy/ Zoology	
The student will observe, model, and/or manipulate a variety of organisms representing the major groups of invertebrate and vertebrate animals, to gain an understanding of increasing complexity.	
Learning Expectations	
The student will:	
1.1. compare and contrast animals, from simplest organisms to most complex, with regard to anatomical differences, embryological development, and evolutionary history.	
1.2. investigate how animals accomplish functions like ingestion and digestion, transportation of materials, respiration, excretion, movement, reproduction and development.	
1.3. demonstrate an understanding of systems of increasing complexity, as well as the relationship between structure and function in all organisms.	
State Performance Indicators	
The student is able to:	
• observe, model, manipulate, and/or dissect specimens representative of major groups of animals. (These may include, but are not limited to earthworms, clams, crayfish, grasshoppers, starfish, fish, and frogs.)	
• distinguish among organisms that reproduce asexually and sexually.	
• identify organisms with intracellular digestion, two-way, and one-way digestive systems, and name vertebrate organisms that are herbivores, carnivores, and omnivores.	
• relate methods of respiration to the anatomy and the habitat of an animal.	
• identify the bones and major muscles of the musculoskeletal system, and investigate the physiology of muscle movement.	
• compare the circulatory systems of representative organisms, components of blood, and the differences among vertebrate hearts.	
• investigate the increasing complexity of methods of excretion utilized by animals.	
• investigate careers in wildlife and marine biology, zoo curator, and wildlife management.	
• relate the growth and development of organisms to genetic, hormonal, and environmental controls.	
• examine the ways that the endocrine system, nervous systems, and sense organs assist in monitoring an organism's environment.	
• compare human models to similar structures in animals.	

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TABLE 3K

Tennessee Biology II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 2.0 : Embryology	
The student will investigate the processes of gamete production, fertilization, and development.	
Learning Expectations	
The student will:	
2.1. compare and contrast the anatomy and production of eggs and sperm.	
2.2. investigate the process of zygote formation.	
2.3. distinguish between internal and external fertilization.	
2.4. describe and distinguish among cleavage, gastrulation, and differentiation.	
2.5. compare the embryological development of organisms including, but not limited to frog, chicken, and human.	
State Performance Indicators	
The student is able to:	
• relate the process of meiosis to the formation of haploid from diploid cells.	
• label diagrams representing the formation of egg and sperm.	
• examine and describe the behavior of egg and sperm during fertilization.	
• research the formation of body systems from origin tissues: the endoderm, mesoderm, and ectoderm.	
• research careers in animal husbandry, veterinary medicine, genetics, and zoology.	
• describe blastula formation in a variety of egg types, including frogs, chickens, and humans.	
• sequence a series of diagrams depicting gastrulation of a frog, chicken, and human embryo.	
• contrast normal and abnormal differentiation of cells in amphibians, chickens, and mammals.	
• describe the process of cloning and debate its ethical and social implications.	

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TABLE 3K

Tennessee Biology II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Genetics	
The student will examine the structure and function of DNA.	
Learning Expectations	
The student will:	
3.1. examine modes of inheritance involving linked genes and epistasis.	
3.2. investigate the effects of the environment on DNA.	
3.3. investigate chromosome mapping, crossing over, and the formation of new gene combinations.	
3.4. examine the process of regulating gene expression.	
3.5. explore the genomic organization and inheritance of DNA in prokaryotes, eukaryotes, cellular organelles, and humans.	
3.6. investigate the applications of recombinant DNA technology, including cloning.	
3.7. investigate population genetics and the Hardy-Weinberg Law.	
3.8. explore the processes of transcription and translation.	
State Performance Indicators	
The student is able to:	
• relate the process of speciation and the ability of a population to undergo evolutionary divergence to allele frequencies using the Hardy-Weinberg Law.	
• explain how proteins are the end product of gene expression, using models.	
• interpret data from a model of crossing-over and explain how crossing-over increases genetic diversity.	
• analyze modes of inheritance including gene linkage and epistasis, using karyotypes, genetic problems, pedigrees, or Punnett squares.	
• distinguish among nuclear DNA and the DNA of bacteria, organelles, and bacteriophages.	
• research methods of genetic engineering, including recombinant DNA and cloning.	
• research the relationship of genetics to cancer.	
• explain the relationship between environmental conditions and changes in the DNA sequences.	
• investigate careers in genetic engineering, genetic counseling, and genetic research.	
• research DNA mutations related to environmental influences.	
• investigate the editing of mRNA and its translation into a protein.	

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_____ = Content sampled by the ACT Science Test

TABLE 3K

Tennessee Biology II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 4.0. Immunology	
The student will investigate the reaction of, causes for, and results of the immune response.	
Learning Expectations	
The student will:	
4.1. examine the stages of an immune response.	
4.2. analyze an immune response at the cellular and molecular level.	
4.3. explore immune disorders.	
4.4. compare the different types of immune responses evoked by antigens.	
4.5. explore the worldwide impact of vaccination programs.	
State Performance Indicators	
The student is able to:	
• describe the role of lymphocytes in an immune response.	
• compare autoimmune diseases to other diseases.	
• investigate the sociological effects of AIDS and other autoimmune diseases.	
• compare and contrast specific immunity and acquired immunity.	
• investigate the effect of environmental and genetic factors on immune responses.	
• debate the use of other species for studying immune responses in humans.	
• research the process for the FDA approval of experimental drugs.	
• research careers in immunology, epidemiology, chemistry, virology, serology, and statistics.	
• investigate the major antibodies found in human serum.	
• research how vaccines are produced and the considerations made when manufacturing the influenza vaccine each year.	
• investigate the sharp increase in the number and kinds of allergies.	

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_____ = Content sampled by the ACT Science Test

TABLE 3K

Tennessee Biology II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 5.0. Microbiology	
The student will investigate diversity, impact, and uses of microorganisms as well as diseases caused by microorganisms.	
Learning Expectations	
The student will:	
5.1. examine the diversity of microbial life forms and explore the conditions under which microbes thrive.	
5.2. compare and contrast pathogenic and parasitic microbes as regards their identity, interactions, the diseases they cause, and methods used to control their growth.	
5.3. investigate the role of microbes in genetic engineering and examine ways microbes are used in society.	
5.4. identify the various relationships shared among humans, plants, and microbes.	
State Performance Indicators	
The student is able to:	
• distinguish among bacterial types according to shape and by using different stains.	
• distinguish among bacterial, fungal, and microscopic parasites according to their growth and nutrition.	
• describe symbiosis, mutualism, parasitism, and commensalism in relation to the major classes of microbes.	
• describe the beneficial uses of microbes.	
• explain exponential growth of bacterial populations and evaluate long term methods used to control growth.	
• demonstrate the process of using recombinant DNA production with the bacterium *E. coli.*	
• describe an environment for the major classes of microbes: bacteria, viruses, fungi, parasites, and protists that will maximize growth and reproduction capabilities.	
• research careers that involve microbiology, such as mycology, the brewing industry, microbes in water purification systems, and parisitology.	
• describe the procedure for a Gram stain, and use it to distinguish among bacteria.	
• participate in a classroom debate on the use of biological weapons.	
• research graphs, charts, and data of an epidemic and debate the position that this same scenario could or could not happen again today.	
• use microscopes to analyze a soil sample for bacteria, fungi, and various roundworms found in a healthy sample.	

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_____ = Content sampled by the ACT Science Test

TABLE 3K

Tennessee Biology II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 5.0. Microbiology	
• investigate epidemiology of emerging infectious diseases.	

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_____ = Content sampled by the ACT Science Test

TABLE 3K

Tennessee Biology II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 6.0. Botany	
The student will investigate simple and complex plant forms and understand the importance of plant life to survival on earth.	
Learning Expectations	
The student will:	
6.1. examine the anatomy and physiology of non-vascular and vascular plants to demonstrate the biological evolution of plants on the earth.	
6.2. investigate the anatomical and physiological differences among plants that explain how plants grow, reproduce, survive, and coexist with animals in their particular habitats.	
6.3. demonstrate the wide variety of plants that are both harmful and useful to animals, especially humans.	
State Performance Indicators	
The student is able to:	
• observe and explain the life cycles of mosses and ferns.	
• identify, describe, or label the major organs of vascular plants to be the roots, stems, leaves, and seed-producing structures.	
• observe, draw, and label the major structures contained within the flowers and seeds of angiosperms, and explain the processes of pollination and germination.	
• observe differences in plants to identify those that are non-vascular or vascular, spore-bearing or seed producing, gymnosperms or angiosperms, and monocots or dicots.	
• distinguish the types of plants adapted to life in a variety of habitats, and explain the specializations necessary for survival in those habitats.	
• compare and contrast spores and seeds, and relate them to the structures of plants where they are produced.	
• compare and contrast gymnosperms and angiosperms.	
• research careers in agriculture, horticulture, landscaping, agronomy, food science, and nutrition.	
• explain the transpiration, tension-cohesion (adhesion-cohesion), and pressure flow models to describe transport of materials in vascular plants.	
• describe how hormonal and environmental factors affect the growth and development of plants, and predict what occurs when these factors are changed.	
• describe and list plants, or parts of plants, that are helpful and harmful to animals, and especially humans, paying particular attention to sources of food, shelter, clothing, and medicines.	

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_____ = Content sampled by the ACT Science Test

TABLE 3K

Tennessee Biology II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 6.0. Botany	
• research local plant populations, using a dichotomous key to identify the various species.	

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_____ = Content sampled by the ACT Science Test

TABLE 3L

Tennessee Chemistry I Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Atomic Structure	
The student will investigate atomic structure and how this determines the physical and chemical properties of matter.	
Learning Expectations	
The student will:	
1.1. compare and contrast various models of the atom as they emerged historically, from the Greeks to the modern electron-cloud model.	
1.2. investigate the basic organization of the modern periodic table, including atomic number and atomic properties.	
1.3. describe models of the atom in terms of orbital, electron configuration, orbital notation, quantum numbers, and electron-dot structures.	
1.4. investigate the composition of the nucleus so as to explain isotopes and nuclear reactions.	
1.5. relate the spectral lines of an atom's emission spectrum to the transition of electrons between different energy levels within an atom.	
State Performance Indicators	
The student is able to:	
• categorize an element as a metal, metalloid, nonmetal, or noble gas based on its position in the periodic table.	
• identify an element's atomic number and name or symbol, given the number of protons or electrons in a neutral atom using a periodic table.	
• identify protons, neutrons and electrons with regard to their relative mass, relative charge, and location in an atom.	
• identify the major characteristics of various models of the atom: Democritus, Thomson, Rutherford, Bohr, and the modern quantum mechanical model.	
• determine the number of protons, neutrons, and electrons in an atom or ion, given the symbol of the atom or ion and a periodic table.	
• compare *s* and *p* orbitals in an energy level in terms of general shape, energy and/or numbers of electrons possible.	
• determine the Lewis electron-dot structure or number of valence electrons for an atom of any main group element (1, 2, 13–18), given its atomic number or its position in the periodic table.	
• describe the trends present in the periodic table with respect to atomic size, ionization energy, electron affinity or electronegativity.	

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TABLE 3L

Tennessee Chemistry I Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 2.0 Matter and Energy	
The student will investigate the characteristics of matter and the interaction of matter and energy.	
Learning Expectations	
The student will:	
2.1. investigate the characteristics of matter.	
2.2. explore the interactions of matter and energy.	
State Performance Indicators	
The student is able to:	
• identify a pure substance as element or compound, when given its chemical name or formula.	
• distinguish among elements, compounds, solutions, colloids, and suspensions, given examples.	
• classify changes in matter as physical or chemical, given examples or scenarios.	
• classify properties of matter as physical or chemical when given examples or scenarios.	
• distinguish between heat content and temperature when given a unit, a definition, or an example.	
• distinguish among gases, liquids, and solids in terms of particle spacing and relative movement, given a diagram or scenario.	
• predict the effect of changing one gas variable (volume, temperature, or pressure) on another variable, given a scenario.	
• demonstrate an understanding of the law of conservation of matter, given experimental data.	
• categorize a process as endothermic or exothermic, given an example or scenario.	
• demonstrate an understanding of the law of conservation of energy by equating heat loss and heat gain in an interaction, given the formulas $-q = q$ and $q = mc\Delta t$, and the specific heat.	

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TABLE 3L

Tennessee Chemistry I Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Interactions of Matter	
The student will examine the interactions of matter.	
Learning Expectations	
The student will:	
3.1. investigate chemical bonding.	
3.2. analyze chemical reactions.	
3.3. apply the mathematics of chemical formulas and equations.	
State Performance Indicators	
The student is able to:	
• distinguish between a chemical symbol and a chemical formula, given examples.	
• identify the reactants and products in a chemical reaction, given a balanced chemical equation.	
• explain the differences among the composition, decomposition, double replacement, and single replacement types of chemical reactions, given a balanced equation.	
• determine the number of atoms, formula units, or molecules of a particular substance, given a balanced equation.	
• distinguish between ionic and covalent compounds, given binary formulas.	
• identify the formula for a compound using a periodic table and a list of common ions, given the name of the compound.	
• identify the name of compounds and common acids (sulfuric acid, nitric acid, hydrochloric acid, acetic acid, and phosphoric acid), using a periodic table and a list of common ions.	
• select a correctly balanced chemical equation, when given examples.	
• recognize a balanced chemical equation using appropriate symbols, given a word equation.	
• convert between any two of the following quantities of a substance: mass number of moles number of particles molar volume (at STP)	
• determine molar ratios expressed in balanced chemical equations.	
• analyze percent composition of the elements in a compound, given the formula.	
• solve mass to mass stoichiometry problems.	
• identify and solve different types of stoichiometry problems.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3L

Tennessee Chemistry I Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 4.0. Solutions and Acids/Bases	
The student will investigate the characteristics of solutions with particular attention to acids and bases.	
Learning Expectations	
The student will:	
4.1. investigate the characteristics of solutions.	
4.2. investigate the characteristics of acids and bases.	
State Performance Indicators	
The student is able to:	
• classify substances as acids or bases, given the formula.	
• identify the solute and solvent in a solid, liquid or gaseous solution, given its composition.	
• classify a solution as saturated, unsaturated, or supersaturated, given the composition of the solution and a solubility graph.	
• calculate the concentration of a solution in terms of molarity or mass percent, given mass of solute, and mass or volume of solution.	
• classify a substance as an acid or a base, given its properties (e.g., color of litmus, color of phenol-phthalein, taste, pH and slippery or non-slippery).	
• predict the products of a neutralization reaction involving inorganic acids and bases, given the reactants.	

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TABLE 3M

Tennessee Chemistry II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Structure of Matter	
The student will extend their Chemistry I investigation of atomic theory, chemical bonding and nuclear chemistry.	
Learning Expectations	
The student will:	
1.1. recognize how electron energy levels relate to atomic spectra, quantum numbers, and atomic orbitals.	
1.2. represent electron arrangements in atoms in a variety of ways.	
1.3. describe periodic relationships including atomic radii, ionization energies, electron affinities, and oxidation states.	
1.4. investigate the subject of ionic, covalent, metallic bonds, and attractive forces between molecules.	
1.5. investigate the relationship of chemical bonding to the state, structure and properties of matter.	
1.6. explore Lewis structures, characteristics of valence bonds (including hybridized orbitals, resonance, and sigma and pi bonds), bond directionality, and ionic or molecular geometry using the VSEPR theory.	
1.7. investigate the characteristics of simple organic molecules including isomerism.	
1.8. explore nuclear chemistry.	
State Performance Indicators	
The student is able to:	
• write the arrangement of electrons in an atom using orbital notation, electron configuration notation, and electron-dot notation.	
• organize atoms from the main-group elements (1, 2, 13–18) based on atomic radii, ionization energies, and electron affinities.	
• predict the charge for ions (groups 1, 2, 13–18) and the oxidation state of any atom in a compound or polyatomic ion.	
• use the Bohr model to represent an electron moving between its ground state and its excited state.	
• correlate lines of Balmer's series of an emission or absorbance spectrum of the hydrogen atom to their respective energy-level transitions.	
• calculate the wavelength, frequency, and energy of a photon of electromagnetic radiation (formula and constants provided).	
• compare the shape, energy, or number of electrons possible in s, p, d, and f orbitals.	
• determine quantum numbers for elements given the electron configuration.	
• explain in a paragraph why some elements do not have the predicted electron configuration (e.g., Cu: [Ar] $4s^1 3d^{10}$ instead of [Ar] $4s^2 3d^9$).	

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TABLE 3M

Tennessee Chemistry II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Structure of Matter	
• illustrate various types of bonding (ionic, covalent and metallic), and draw models to illustrate dipole interactions and dispersion forces.	
• draw Lewis structures for polyatomic ions and simple covalent molecules.	
• explain the formation of hybridized orbitals, resonance, and sigma and pi bonds.	
• predict the geometry about a central atom in a polyatomic ion or molecule using the VSEPR theory.	
• demonstrate, by drawing simple organic molecules (e.g., alkanes, alkenes, alkynes, alcohols), an understanding of structural isomers.	
• correlate Lyman's ultraviolet and Paschen's infrared series of hydrogen's spectrum.	
• display the dipole moments of molecules using molecular geometry and electronegativity of atoms.	
• compare and contrast the structure and function of proteins, carbohydrates, lipids, and nucleic acids.	
• write the nuclear equation involving alpha or beta decay and gamma emission (given the mass number of the parent isotope).	
• determine the half-life of an isotope by examining a graph or by using an appropriate equation.	
• calculate the mass of the parent isotope remaining after a period of time.	
• graph the decay series given the emissions of a radioactive isotope.	
• describe societal implications of nuclear chemistry (dangers, uses, occupations, etc.).	

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TABLE 3M

Tennessee Chemistry II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 2.0 States of Matter	
The student will investigate interactions of matter using the kinetic molecular theory to explain solid, liquid, gas, and solution phenomena.	
Learning Expectations	
The student will:	
2.1. apply the kinetic molecular theory to describe solids, liquids, and gases.	
2.2. investigate topics associated with the gaseous state.	
2.3. discuss phase diagrams of one-component systems.	
2.4. extend their understanding of solutions introduced in Chemistry I.	
State Performance Indicators	
The student is able to:	
• identify the basic contents of the kinetic-molecular theory and relate kinetic energy to temperature.	
• relate the kinetic-molecular theory to solids, liquids, gases, and phase changes.	
• relate Avogadro's hypothesis to gas volumes.	
• understand the mole concept of matter as it relates to mass, volume, or number of particles.	
• solve gas law problems including the ideal gas law equation (given the formulas and constant).	
• recognize critical temperature, critical pressure, and triple point using phase diagrams of one-component systems.	
• interpret changes in temperature and/or pressure using phase diagrams of one-component systems.	
• calculate concentration of solutions (e.g., molarity, molality, and mass percent).	
• determine the concentration of a dilute solution that is prepared from a concentrated solution of known molarity.	
• investigate colligative properties and calculate freezing point depression and boiling point elevation of a solvent when a solute is added to it (given formula and appropriate constants).	
• differentiate among unsaturated, saturated, and supersaturated solutions using solubility graphs.	
• identify factors affecting solubility (e.g., temperature, pressure, concentration and polarity).	
• explain deviations that real gases have from ideal gas characteristics.	
• apply Raoult's law and osmosis to the study of solutions given formulas.	
• investigate Beer's law using a dilution series.	

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TABLE 3M

Tennessee Chemistry II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Reactions	
The student will investigate types of reactions, stoichiometry, equilibrium phenomena, kinetics, and thermodynamics of chemical reactions.	
Learning Expectations	
The student will:	
3.1. investigate various chemical reactions associated with acids and bases, precipitation, and oxidation and reduction.	
3.2. expand the study of stoichiometry.	
3.3. explore the concept of physical and chemical equilibrium.	
3.4. investigate chemical kinetics and the rate of reaction concept.	
3.5. explore the concept of thermodynamics.	
State Performance Indicators	
The student is able to:	
• write a balanced chemical equation and classify as to type, given a word description of a chemical reaction.	
• predict the products, write the net ionic equation, and identify spectator ions in single and/or double replacement reactions (given the activity series table and a solubility table).	
• determine percent composition, empirical, and molecular formula of a compound from data.	
• predict amounts of products given either mole or mass amounts of reactants, compare actual yield to theoretical yield, and solve problems using limiting reagents.	
• examine oxidation-reduction half-reactions given an equation.	
• classify a solution as neutral, acidic, or basic, and calculate its pH given either the hydrogen or hydroxide ion concentration.	
• graph data from a neutralization titration using strong or weak acids/bases.	
• characterize acids and bases using the Arrhenius, Brönsted-Lowry and Lewis definitions, and identify conjugate acid-base pairs.	
• characterize a substance as amphoteric.	
• recognize dynamic processes, incorporating the concept of Le Chatelier's Principle.	
• solve for equilibrium constants given appropriate concentrations, or solve for desired concentrations given necessary information, with emphasis on pK.	
• determine if a precipitate will form given the concentrations of ions in solution (given a table of solubility product constants).	

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TABLE 3M

Tennessee Chemistry II Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Reactions	
• explain rate of reaction, determine the order of a reaction, and calculate the rate constant from experimental data.	
• describe activation energy and predict the effect of a temperature change on the rate of a reaction	
• describe the role of a catalyst in a chemical reaction and its relationship to activation energy.	
• define enthalpy and entropy.	
• calculate calorimetry problems using laboratory data (given the equation).	
• describe the common ion effect, buffers, and hydrolysis given a solution.	
• differentiate electrolytic and voltaic cells by writing the appropriate standard half-cell reactions (given a diagram of each cell).	
• describe both physical and chemical equilibria using the Nernst equation.	
• describe and use Faraday's laws to solve problems (given an equation).	
• identify the rate-determining step given a reaction mechanism.	
• calculate the pH of buffer solutions.	
• calculate the solubility and resulting concentration using the common-ion effect.	
• calculate changes in enthalpy using Hess's law (given a table of heats of formation).	
• calculate changes in entropy (given an entropy table).	
• calculate Gibbs free energy and determine if a reaction is spontaneous (given the equation).	

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TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Mechanics	
The student will investigate the laws and properties of mechanics.	
Learning Expectations	
The student will:	
1.1. investigate fundamental physical quantities of mass and time.	
1.2. analyze and apply Newton's three laws of motion.	
1.3. understand work, energy, and power.	
1.4. investigate kinematics and dynamics.	
State Performance Indicators	
The student is able to:	
• distinguish between mass and weight using base units in the standard international (SI) system.	
• relate time in the (SI) system to the independent experimental variable in most situations.	
• relate inertia, force or action-reaction forces to Newton's three laws of motion and distinguish between the three laws in various scenarios.	
• compare and contrast characteristic properties of scalar and vector quantities.	
• investigate the definitions of force, work, power, kinetic energy, and potential energy.	
• explore velocity and acceleration.	
• analyze vector diagrams (addition, subtraction and scaling) and solve composition and resolution problems for force and momentum.	
• explore characteristics of rectilinear motion and analyze distance-time graphs (velocity), velocity-time graphs (acceleration and distance).	
• investigate the characteristics of centripetal motion and centripetal acceleration.	
• evaluate the dynamics of systems in motion including friction, gravity, impulse and momentum, change in momentum, and conservation of momentum.	
• analyze the characteristics of energy, and conservation of energy including friction, and gravitational potential energy.	
• relate work and power to various simple machines, mechanical advantage of different machines and recognize simple machines utilized in compound machines.	
• describe rotational equilibrium and relate to torque.	
• investigate projectile motion.	
• utilize trigonometry and vector analysis to solve force and momentum problems.	
• apply elementary calculus to solve motion problems.	

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_____ = Content sampled by the PLAN Science Test

TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Mechanics	
• experiment with elastic and inelastic collisions.	

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TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 2.0 Thermodynamics	
The student will examine the properties and laws of thermodynamics.	
Learning Expectations	
The student will:	
2.1. develop an understanding of heat and internal energy.	
2.2. compare Celsius, Kelvin and the Absolute temperature scales.	
2.3. investigate exchanges in internal energy.	
State Performance Indicators	
The student is able to:	
• investigate temperature in relationship to kinetic energy.	
• recognize that absolute zero is the absence of molecular kinetic energy.	
• identify the characteristics of internal energy and temperature/heat (joules/calories).	
• relate the First Law of Thermodynamics as an application of the Law of Conservation of Energy (hot to cold) and heat transfer through conduction, convection and radiation.	
• relate change in heat content (quantity of thermal energy) to kinetic energy and specific heat ($Q = mc\Delta T$).	
• investigate potential energy changes (phase changes) of heat of fusion, heat of vaporization, and heat of sublimation.	
• explore thermal expansion and contraction.	
• apply the second law of thermodynamics to the Carnot engine.	

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TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Waves and Sound	
The student will investigate the properties of waves and sound.	
Learning Expectations	
The student will:	
3.1. explore conditions associated with simple harmonic motion.	
3.2. investigate Hooke's law.	
3.3. understand wave mechanics.	
3.4. examine the Doppler Effect.	
3.5. explore the characteristics and properties of sound.	
State Performance Indicators	
The student is able to:	
• describe and investigate simple harmonic motion.	
• investigate and analyze wavelength, frequency and amplitude of longitudinal and transverse waves.	
• identify a wave interaction as reflection, refraction, diffraction, and interference.	
• compare mechanical and electromagnetic waves.	
• explore Hooke's Law.	
• investigate reflection, refraction, diffraction, and interference of waves.	
• demonstrate and explain the Doppler Effect.	
• experiment with reflection, refraction, diffraction, and interference of waves and sound.	
• compare wave characteristics to natural auditory phenomena.	
• determine the speed of sound experimentally using various materials and temperatures.	
• measure spring constants.	

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TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 4.0. Light and Optics	
The student will examine the properties of light and optics.	
Learning Expectations	
The student will:	
4.1. describe the characteristics of the electromagnetic spectrum.	
4.2. investigate the interaction of light waves.	
4.3. analyze the optics of mirrors.	
4.4. explore the optics of lenses.	
4.5. investigate the phenomenon of color.	
State Performance Indicators	
The student is able to:	
• explore properties of electromagnetic radiation.	
• examine properties of light waves.	
• differentiate among transmission, reflection, refraction, diffraction, and interference of light waves.	
• investigate the optical properties of plane and curved mirrors.	
• solve problems related to Snell's law.	
• explore the formation of color.	
• draw, explain, and solve problems for the optics of mirrors and lenses.	
• investigate optical phenomena (i.e., the Puddle Effect, optical illusions, and polarization).	

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TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 5.0. Electricity and Magnetism	
The students will investigate electricity and magnetism.	
Learning Expectations	
The student will:	
5.1. examine properties of electric forces, electric charges, and electric fields.	
5.2. explore the flow of charge and electric currents.	
5.3. investigate Ohm's law.	
5.4. compare and contrast series and parallel circuits.	
5.5. analyze schematic diagrams.	
5.6. understand magnetic poles, magnetic fields, and investigate electromagnetic induction.	
State Performance Indicators	
The student is able to:	
• analyze a given group of charges for repulsion and attraction.	
• distinguish between charged particles related to repulsion and attraction.	
• create a simple electromagnet.	
• describe the electric field that fills the space around a charged particle or group of charges.	
• draw an electric field, given a scenario of charged particles.	
• solve problems of resistance using Ohm's law.	
• draw and explain series and parallel circuits.	
• identify components of series and parallel circuits and solve problems related to voltage, amperage, and resistance.	
• build series and parallel circuits and demonstrate how they function.	
• demonstrate a generated current by electromagnetic induction.	
• describe how current is generated by electromagnetic induction.	
• design a lab that demonstrates the flow of charged particles and an electric current.	

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TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 6.0. Nuclear Physics	
The student will investigate the laws and properties of nuclear physics.	
Learning Expectations	
The student will:	
6.1. investigate the properties and structure of the atom.	
6.2. compare and contrast the Bohr model and the quantum model of the atom.	
6.3. explore the dynamics of the nucleus: radioactivity, nuclear decay, radiocarbon/uranium dating and half-life.	
6.4. compare and contrast nuclear fission and nuclear fusion.	
6.5. investigate the quantum theory.	
State Performance Indicators	
The student is able to:	
• identify the parts of an atom.	
• describe the properties and location of subatomic particles.	
• describe three forms of radioactivity.	
• distinguish between nuclear fission and nuclear fusion.	
• distinguish between the Bohr model and the quantum model of an atom.	
• explain the changes in atomic number or mass number for each form of radioactivity.	
• write and balance equations for the three forms of radioactive decay.	
• solve half-life problems.	
• explain dating methods using carbon-14 or uranium	
• explain how particles behave like waves.	
• distinguish between coherent and incoherent light.	
• describe how a laser is produced.	
• recognize how the quantum theory explains the photoelectric effect.	
• solve problems related to the photoelectric effect.	

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TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 6.0. Nuclear Physics	
Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Ethical Practices	
The student will demonstrate ethical practices.	
Learning Expectations	
The student will:	
1.1. critically examine data to determine its significance.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram
1.2. repeat trials to enhance the reliability of data.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design
1.3. recognize that in science one solution often leads to new questions.	
1.4. employ ethical practices with research and investigations that involve human or animal subjects and/or hazardous/bio-hazardous materials.	
1.5. follow safety procedures in the classroom, laboratory, and home environments.	
1.6. respect and understand copyright and patent laws.	
State Performance Indicators	
The student is able to:	
• use printed references and correct citations.	**Interpretation of Data:** Understand basic scientific terminology Find basic information in a brief body of text
• honor all copyright laws.	
• choose appropriate sources of information.	
• report accurate observations.	**Scientific Investigation:** Understand precision and accuracy issues
• follow proper safety procedures.	
• date and document data, observations, and reflections in a journal.	

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TABLE 3N

Tennessee Physics Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 6.0. Nuclear Physics	
• complete a research plan that adheres to appropriate regulatory guidelines.	
• reference sources of information.	
• complete necessary documents regarding the involvement of human or animal subjects and/or hazardous/bio-hazardous materials.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Anatomical Orientation	
The student will explore the organizational structures of the body from the molecular to the organism level.	
Learning Expectations	
The student will:	
1.1. distinguish between anatomy and physiology.	
1.2. investigate the structures of the major body systems and relate the functions.	
1.3. investigate the major body cavities and the subdivisions of each cavity.	
1.4. apply correct anatomical terminology when discussing the orientation of body parts and regions.	
State Performance Indicators	
The student is able to:	
• list the hierarchy of structural organization from the molecular level through the organism level.	
• label the sub-cellular components in the cell and identify the function of each component.	
• list the survival needs of living organisms.	
• define anatomy and physiology and describe their subdivisions, using a concept map.	
• classify organ systems of the body as either (1) protection, support, and movement, (2) regulation and integration, (3) transport, or (4) absorption and excretion.	
• illustrate the directional terms that refer to the body using correct anatomical terminology.	
• construct a concept map to illustrate the cavities in the body and the organs contained within each area.	
• relate positive and negative feedback mechanisms to the maintenance of homeostasis within the body.	
• identify careers related to anatomy and physiology in medicine, allied health, and research.	
• identify the major cell and tissue groups.	
• construct a concept map of the major organ systems within the body and list the organs and functions of each system.	
• develop scenarios of positive and negative feedback mechanisms and predict their effect upon homeostasis.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 2.0 Protection, Support, and Movement	
The student will explore the integumentary, skeletal, and muscular systems, and relate the structures of the various parts to the functions they serve.	
Learning Expectations	
The student will:	
2.1. identify the components of the integumentary system and explain the physiological mechanisms that make the functions of this system possible.	
2.2. identify the bones and their parts that make up the skeletal system, and relate the physiological mechanisms that help the skeletal system fulfill its functions.	
2.3. identify the various kinds of muscles, major muscles of the body, and explain the physiology of muscle contraction.	
State Performance Indicators	
The student is able to:	
• relate the structure of the skin to its role in protecting the body and maintenance of homeostasis.	
• distinguish the roles of bones and muscles in protection and movement.	
• identify the major bones of the body, given a diagram of a skeleton.	
• identify the major muscles of the body, given a diagram.	
• identify characteristic cells and structures of the integumentary system and relate these structures to their functions.	
• construct a model of skin layers, labeling the functions of each layer, and identify the functions of the skin.	
• identify and classify the types of bones using diagrams, pictures, models, or actual bones.	
• identify the axial and appendicular skeletons, as well as the bones and joints of each.	
• observe, draw, and/or label the different types of muscle tissues, noting the function and anatomical differences of each type.	
• depict the major steps in the sliding filament theory of muscle contraction, using diagrams.	
• identify the major muscles of the body using diagrams, concept maps, pictures, and/or specimens.	
• identify careers related to medicine, allied health, and/or research that relate to the integumentary and musculoskeletal systems.	
• explain the biochemical and/or molecular processes involved in the growth and repair of integumentary tissues.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 2.0 Protection, Support, and Movement	
• write an essay describing the biochemical basis for the harmful effects of the sun.	
• explain the physiological processes involved in disorders of the skin, such as burns, cuts, diseases, and skin cancer.	
• relate the physiological mechanisms involved in remodeling and repair of bones at the molecular and cellular levels.	
• categorize the skeletal muscles as prime movers, antagonists, synergists, or fixators.	
• identify the origin and insertion of major skeletal muscles, given a diagram.	
• describe the biochemical basis of muscle contractions in oral, written, and/or diagrammatic form.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Integration and Regulation	
The student will investigate, compare, and contrast methods of body control by the nervous and endocrine systems.	
Learning Expectations	
The student will:	
3.1. compare and contrast the anatomy and physiology of the central and peripheral nervous systems.	
3.2. describe the structure, function, and developmental aspects of neurons and their supporting glial cells.	
3.3. investigate the physiology of electrochemical impulses and neural integration.	
3.4. investigate organs utilized by the body for perception of external stimuli and to the maintenance of homeostasis.	
3.5. identify the major organs of the endocrine system and demonstrate the relation of each structure to hormonal regulation of homeostasis.	
State Performance Indicators	
The student is able to:	
• label the major areas of the brain and spinal cord, using diagrams, models, or representative organs.	
• identify endocrine glands, using models, diagrams, or specimens.	
• relate the function of each of the major organs in the nervous system.	
• identify the parts of the spinal cord, neurons, neuroglia, and the neuromuscular junction, using microscopic slides, diagrams, or models.	
• describe a nerve impulse in terms of electrochemical changes.	
• identify the cranial nerves and give the region of their innervations.	
• identify the structures and name the functions of the parts of the sense organs.	
• investigate sensory perceptions using experimentation.	
• research and design a presentation related to neurological and/or endocrine abnormalities.	
• interpret graphs of blood sugar levels as related to pancreatic function.	
• identify careers related to medicine, health, and research.	
• analyze a case study and make a speculative diagnosis and/or prognosis.	
• describe the molecular neurophysiology of membrane potentials as related to electrolyte function and active transport (sodium-potassium pump).	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Integration and Regulation	
• trace the pathway of an electrochemical impulse relating biochemical changes involved in conduction of the impulse.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 4.0. Transportation	
The student will investigate the structure and function of the cardiovascular system with an emphasis on the blood, heart, and the lymphatic system and attention to the immune response.	
Learning Expectations	
The student will:	
4.1. identify the molecular and cellular components of the blood.	
4.2. describe the functions of the blood within the human body.	
4.3. demonstrate an understanding of the anatomy of the heart and the flow of blood through the heart.	
4.4. elucidate the biochemical and physiological nature of the heart's functions.	
4.5. describe the structure of blood vessels and identify the major arteries and veins.	
4.6. describe the physiological basis of circulation and blood pressure.	
4.7. demonstrate the role of the cardiovascular system in maintaining homeostasis.	
4.8. identify the major organs of the lymphatic system.	
4.9. demonstrate an understanding of the immune response.	
State Performance Indicators	
The student is able to:	
• identify the components and physical characteristics of the blood.	
• identify the layers, chambers, and valves of the heart.	
• trace the pathway of blood flow through the heart.	
• describe the immune response in general terms.	
• list the blood types and their genetic role in cross-matching.	
• trace the biochemical pathway of plug formation and blood clotting.	
• identify the structures of the mammalian heart.	
• use a variety of methods to measure blood pressure and pulse.	
• identify the major arteries and veins, and their location in the body.	
• label the basic structures of a blood vessel.	
• explain one biochemical mechanism for maintaining homeostasis within the circulatory or immune system, using drawings and labels.	
• identify the structure and functions of the lymph system.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 4.0. Transportation	
• list the cells involved with immunity, and give a description of their functions.	
• identify careers in medicine, allied health, and research that relate to the circulatory, lymphatic, and/or immune systems.	
• identify the components of blood, using a microscope, and discuss the function of each component.	
• identify the biochemical and physiological events related to contraction of the heart.	
• compare the molecular affinity of hemoglobin to oxygen with that of hemoglobin to carbon monoxide.	
• describe the phenomenon of carbon monoxide poisoning.	
• describe the conduction system of the heart in physiological and structural terms.	
• draw the mechanism for immune response at the cellular level.	
• relate nonspecific cellular and chemical defenses of the body to the factors that trigger their response.	
• identify several causes of homeostatic imbalances of the immune system.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 5.0. Absorption and Excretion	
The student will investigate the structures of the body associated with the absorption and excretion of materials, from the molecular, cellular, organ, and system levels of function.	
Learning Expectations	
The student will:	
5.1. identify the major organs of the digestive system.	
5.2. observe the gross anatomy of each organ within the digestive and urinary systems.	
5.3. describe mechanisms of digestion and absorption within the body.	
5.4. relate how nutrition, metabolism, and body temperature are interrelated.	
5.5. explain the role of the urinary system in body waste management.	
5.6. examine the physiological basis for the elimination of water and salts through the skin and lungs.	
State Performance Indicators	
The student is able to:	
• identify the organs of the digestive system, given a chart, diagram, specimen, or model.	
• give one or more specific function of each region/organ of the digestive system.	
• list the vitamins and minerals required for the proper functioning of the body.	
• describe the role of the urinary system and the differences between the male and female urinary tracts.	
• identify the types of tissue from each organ within the digestive system.	
• correlate the source organ and function of the enzymes and hormones within the digestive system.	
• list the substances absorbed within the stomach, small intestine, and large intestine.	
• describe the function and location of sphincter muscles in the alimentary canal.	
• demonstrate an understanding of the relationship between the structure and function of villi.	
• differentiate among carbohydrate, lipid, and protein metabolism by the body.	
• give examples of anabolic and catabolic biochemical reactions within the human body.	
• identify the parts of a nephron, given a chart or a drawing.	
• describe the process of glomerular filtration and its role in urine formation.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 5.0. Absorption and Excretion	
• identify careers related to medicine, allied health, and research, as they relate to the digestive and excretory systems.	
• identify the molecular structure of the organic molecules needed as nutrients by the body.	
• trace a particular food item through the digestive tract, listing biochemical reactions, enzymes, and resultant substances formed.	
• describe the biochemical processes that allow for the movement of water through kidney filtration, reabsorption, and excretion.	

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TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 6.0. Reproduction, Growth, and Development	
The student will investigate the reproductive system and its association with the growth and development of organisms.	
Learning Expectations	
The student will:	
6.1. identify the structures and related functions of the male and female reproductive systems.	
6.2. demonstrate an understanding of the hormonal regulation of the menstrual cycle.	
6.3. indicate the duration and relate the major events at each stage of gestation.	
6.4. investigate congenital disorders; their physiological, biochemical, hormonal, and chromosomal causes.	
State Performance Indicators	
The student is able to:	
• define, compare, and contrast meiosis and mitosis.	
• differentiate between genotype and phenotype.	
• compare various forms of inheritance within organisms, to include dominant-recessive, incompletely dominant, and co-dominant traits.	
• describe the mechanisms and results of sex-linked inheritance.	
• identify the organs of the male and female reproductive systems, given pictures, diagrams, and/or specimens.	
• describe the role of hormones in producing the secondary sex characteristics of males and females.	
• relate the structures of the male and female reproductive systems with their functions.	
• compare and contrast the processes and products of oogenesis and spermatogenesis.	
• trace the pathway that sperm travel from the site of formation to the outside of the body.	
• identify and predict the major events that occur during the menstrual cycle, given diagrams and/or pictures.	
• identify the stages of development from egg formation, to ovulation, fertilization, implantation, and birth.	
• research and make a presentation relating to common genetic disorders.	
• identify careers related to medicine, allied health, and research as they relate to the reproductive systems of the body.	
• describe the homeostatic feedback controls for the hormones of the menstrual cycle.	
• demonstrate an understanding of the roles of the sympathetic and parasympathetic nervous systems and the endocrine system in controlling human sexuality.	

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_____ = Content sampled by the ACT Science Test

TABLE 3P

Tennessee Anatomy and Physiology Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 6.0. Reproduction, Growth, and Development	
• research and debate either side of an issue related to the biotechnology involved with *in vitro* fertilization and other molecular reproductive procedures.	

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_____ = Content sampled by the ACT Science Test

TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Ethical Practices	
The student will demonstrate ethical practices.	
Learning Expectations	
The student will:	
1.1. critically examine data to determine its significance.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram
1.2. repeat trials to enhance the reliability of data.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design
1.3. recognize that in science one solution often leads to new questions.	
1.4. employ ethical practices with research and investigations that involve human or animal subjects and/or hazardous/bio-hazardous materials.	
1.5. follow safety procedures in the classroom, laboratory, and home environments.	
1.6. respect and understand copyright and patent laws.	
State Performance Indicators	
The student is able to:	
• use printed references and correct citations.	**Interpretation of Data:** Understand basic scientific terminology Find basic information in a brief body of text
• honor all copyright laws.	
• choose appropriate sources of information.	
• report accurate observations.	**Scientific Investigation:** Understand precision and accuracy issues
• follow proper safety procedures.	
• date and document data, observations, and reflections in a journal.	
• complete a research plan that adheres to appropriate regulatory guidelines.	
• reference sources of information.	

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_____ = Content sampled by the ACT Science Test

TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 1.0. Ethical Practices	
• complete necessary documents regarding the involvement of human or animal subjects and/or hazardous/bio-hazardous materials.	

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_____ = Content sampled by the ACT Science Test

TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 2.0 Critical Thinking Skills	
The student will identify and clarify problems using critical thinking skills.	
Learning Expectations	
The student will:	
2.1. use scientific instruments for extending the human senses in observation.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment
2.2. recognize limits to scientific investigations.	
2.3. use technological tools and mathematical models to analyze problems or questions.	**Interpretation of Data:** Identify and/or use a simple (e.g., linear) mathematical relationship between data **Scientific Investigation:** Understand the methods and tools used in a simple experiment
2.4. evaluate safety implications and risks associated with a question.	
2.5. analyze and study classical problems.	
State Performance Indicators	
The student is able to:	
• balance risks and benefits to solving a problem.	
• employ a search engine on the web.	
• work cooperatively with an equal or a mentor.	
• show correct use of scientific instruments.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment
• perform a literature search to define a problem.	
• write narratives to describe observed scientific phenomena.	
• develop and refine a problem statement.	**Scientific Investigation:** Compare or combine data from a simple data presentation with data from a complex data presentation Analyze given information when presented with new, complex information
• develop an awareness of the limitations to scientific investigations.	
• analyze questions using technology and mathematics models.	**Scientific Investigation:** Select two or more pieces of data from a simple data presentation Interpolate between data points in a table or graph Identify and/or use a simple (e.g., linear) mathematical relationship between data Extrapolate from data points in a table or graph
• examine safety precautions during experimental design.	

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_____ = Content sampled by the ACT Science Test

TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 2.0 Critical Thinking Skills	
• reflect on classical problems by documenting in a journal.	
• work collaboratively with peers.	
• employ advanced mathematical and computational models.	**Interpretation of Data:** Identify and/or use a complex (e.g., nonlinear) mathematical relationship between data

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_____ = Content sampled by the ACT Science Test

TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Scientific Inquiry	
The student will design and implement a strategy for solving a scientific problem or a strategy for answering a scientific question.	
Learning Expectations	
The student will:	
3.1. practice appropriate safety procedures.	
3.2. formulate a working hypothesis to guide research.	**Scientific Investigation:** Understand a simple experimental design Determine the hypothesis for an experiment
3.3. develop experimental procedures to test hypothesis.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design
3.4. collect data using a variety of scientific tools.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment
3.5. verify data for accuracy.	**Scientific Investigation:** Understand precision and accuracy issues
State Performance Indicators	
The student is able to:	
• demonstrate appropriate measurement techniques.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment
• differentiate between variables and controls in an experiment.	**Scientific Investigation:** Understand a simple experimental design Identify a control in an experiment
• describe basic laboratory procedures.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design
• exhibit proper safety techniques.	
• design and use appropriate procedures for laboratory and fieldwork.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design
• design experiments with the proper application of controls and variables.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment
• demonstrate appropriate use of scientific tools and instruments.	**Scientific Investigation:** Understand the methods and tools used in a simple experiment

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TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 3.0. Scientific Inquiry	
• record and document data and observations accurately.	
• apply established procedures to novel situations.	**Scientific Investigation:** Predict the results of an additional trial or measurement in an experiment
• modify or design an alternative experimental procedure.	**Scientific Investigation:** Identify an alternate method for testing a hypothesis Predict how modifying the design or methods of an experiment will affect results

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_____ = Content sampled by the ACT Science Test

TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 4.0. Analyzing and Evaluating Data	
The student will develop abilities to analyze and evaluate data.	
Learning Expectations	
The student will:	
4.1. use statistical analysis to analyze and interpret data accurately.	**Interpretation of Data:** Identify and/or use a simple (e.g., linear) mathematical relationship between data Identify and/or use a complex (e.g., nonlinear) mathematical relationship between data **Scientific Investigation:** Understand precision and accuracy issues
4.2. evaluate data based in terms of accuracy and precision.	**Interpretation of Data:** Identify and/or use a simple (e.g., linear) mathematical relationship between data Identify and/or use a complex (e.g., nonlinear) mathematical relationship between data **Scientific Investigation:** Understand precision and accuracy issues
4.3. make conclusions based on data analysis and evaluations.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
State Performance Indicators	
The student is able to:	
• use graphing calculators or computers to process data.	
• collect data with hand-held technology.	
• analyze alternate methods for representing data graphically.	**Interpretation of Data:** Translate information into a table, graph, or diagram
• use spreadsheets, graphing, and database programs.	

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TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 4.0. Analyzing and Evaluating Data	
• examine trends in data in order to answer questions.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
• distinguish between accuracy and precision.	
• develop alternative hypotheses.	**Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
• develop a list of open-ended effects.	

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TABLE 3Q

Tennessee Scientific Research Standards, Expectations, and State Indicators	**ACT Science** **College Readiness Standards**
Content Standard: 5.0. Communicating Scientific Results	
The student will publish, present, and communicate results of a scientific investigation.	
Learning Expectations	
The student will:	
5.1. present scientific reports in a clear, accurate, and appropriate manner to a variety of audiences.	**Interpretation of Data:** Translate information into a table, graph, or diagram **Scientific Investigation:** Understand precision and accuracy issues
5.2. communicate findings in order to extend the research base.	
State Performance Indicators	
The student is able to:	
• demonstrate basic keyboarding skills.	
• apply proper grammatical conventions to written communication.	
• write an expository essay.	
• organize written communication with clarity and cohesiveness.	
• compose and present a well-enunciated oral report.	
• present information effectively using audiovisual aids.	
• design and implement an appropriate presentation format based upon the audience and nature of the research.	
• prepare a technical report.	
• collaborate with other investigators in order to revise experimental design and/or design new experiments.	

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