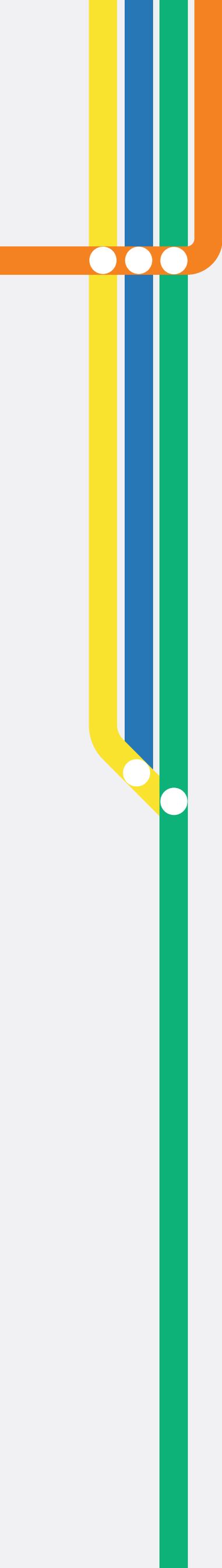




ACT Holistic Framework

# CROSS- CUTTING CAPABILITIES



# FOUR KEYS TO COLLEGE AND CAREER READINESS

Current gauges of college and career readiness tend to focus on academic preparation and achievement, but evidence shows that success in school and the workplace is dependent on multiple aspects in addition to academic ability.

Using ACT research, **the ACT Holistic Framework** provides four domains (core academic skills, cross-cutting capabilities, behavioral skills, and education and career navigation) that most effectively predict and prepare someone's college and career readiness.

Students and employees can use this framework as a map to track themselves along their journey to becoming college and career ready. Teachers and employers can use this framework to identify times for intervention or manage additional support for their students or employees.

# AM I LEVERAGING THIS IN MY INSTITUTION?

## **K-12 EDUCATORS AND ADMINISTRATORS**

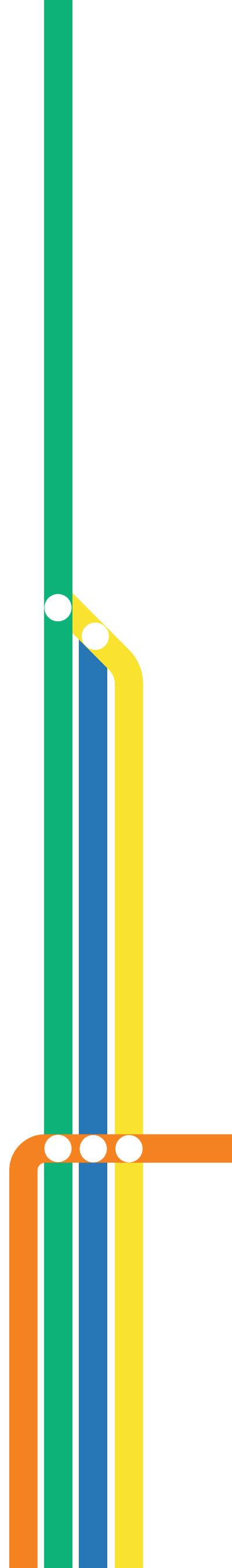
The main core academic skills (English, language arts and math) are important in your curriculum, encouraging learning through tasks that incorporate technology skills, thinking skills, and collaboration skills provides students with an opportunity to develop their cross cutting capabilities as well. The skills learned from these types of tasks are identified by business, industry, and post secondary partners. as the abilities individuals need to succeed in their institutions.

## **HIGHER EDUCATION PROFESSIONALS**

The use of technology and group collaboration in classroom settings correlates to higher grades, support student retention, and effectively prepare them for the workplace. Incorporating tasks that support the development of these skills and offering courses that address these skills directly can lead to a higher quality graduate and workforce employee.

## **WORKFORCE DEVELOPMENT PROFESSIONALS**

The knowledge and skills found in this book expand upon the traditional skills used to predict performance in the workforce. The measurement and evaluation of these skills will facilitate the ability of the workforce to identify candidates with the ability to not just perform, but to excel, in their organization.



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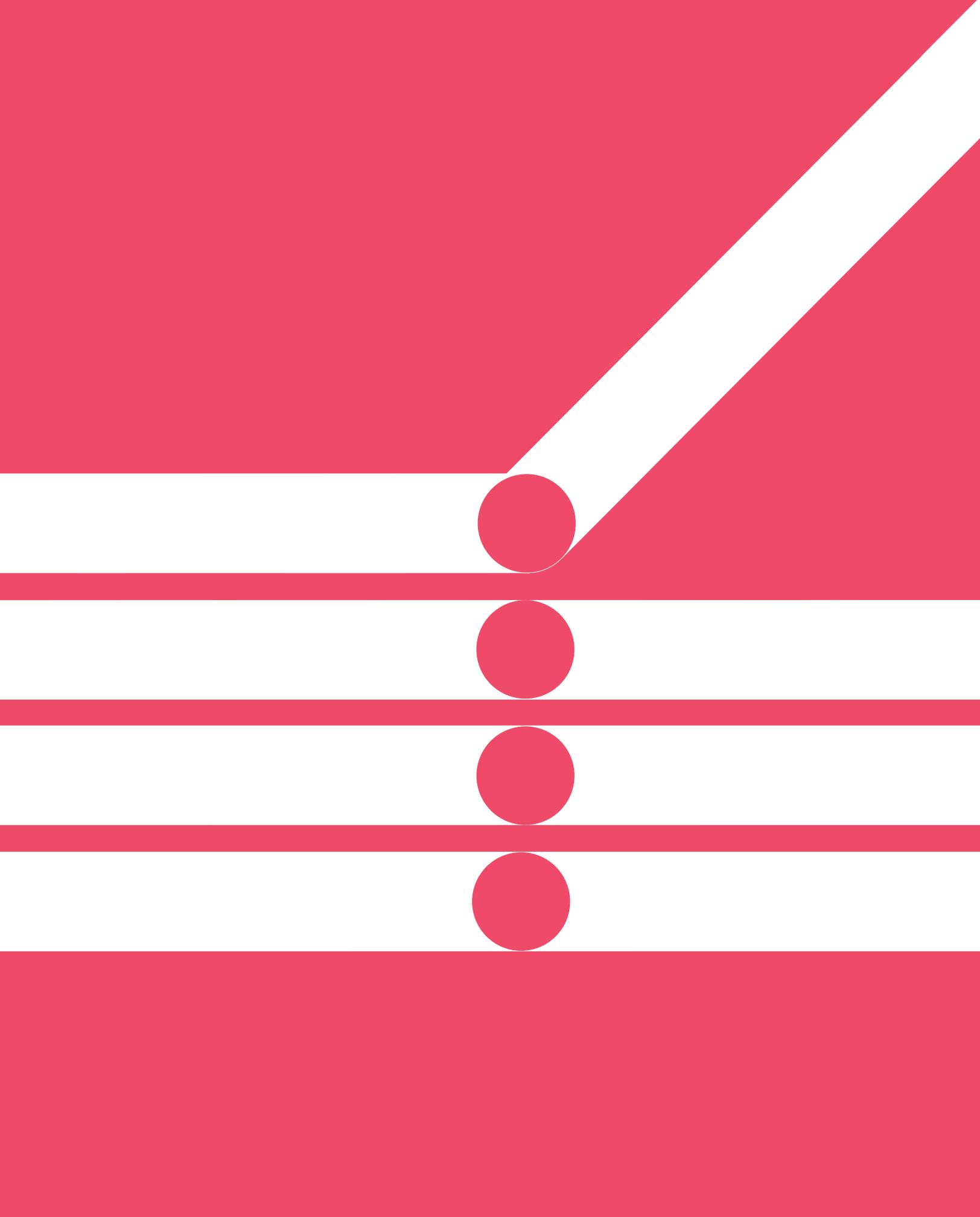
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An abstract graphic featuring a series of horizontal stripes in red and white. A diagonal white stripe cuts across the top right corner. Four solid red circles are arranged vertically in the center of the image, overlapping the stripes.

# **WHAT ARE CROSS-CUTTING CAPABILITIES**

# WHAT ARE CROSS-CUTTING CAPABILITIES

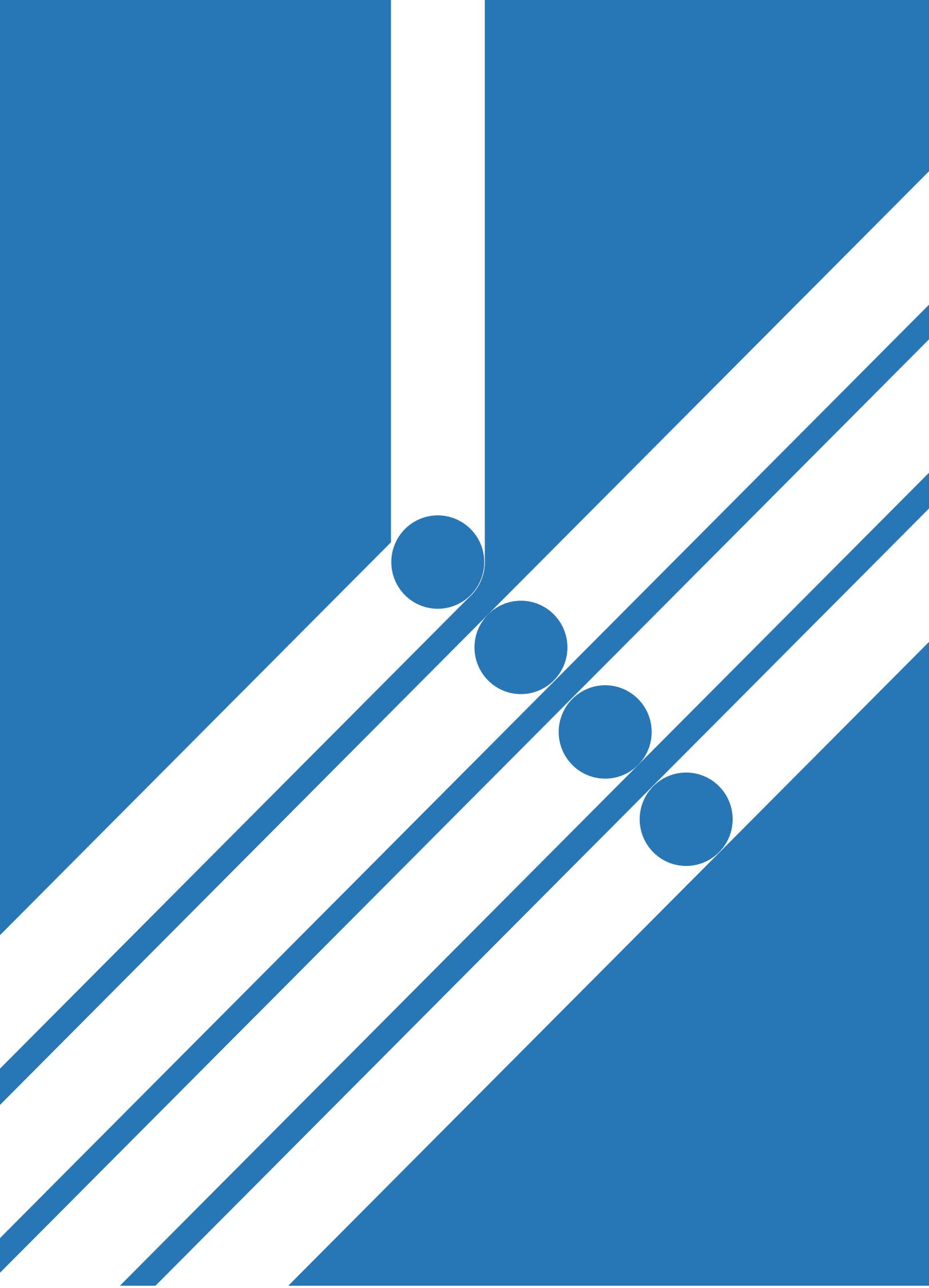
As our global economy transforms into a knowledge society with an enhanced focus on information and innovation, success will depend on the ability of global citizens to work effectively with knowledge and technology. Working effectively with knowledge and technology requires thinking critically and creatively, solving problems collaboratively, using technology effectively, and understanding our capabilities as lifelong learners. These skills are essential for success in the modern classroom and modern society. Given the demonstrated importance of these skills to student success, ACT includes these 21st century skills in the ACT Holistic Framework as Cross-Cutting Capabilities (CCCs). The CCCs include critical thinking, creative thinking and innovation, collaborative problem solving (CPS), information and communication technology (ICT), and self-directed learning (SDL).



Each cross-cutting capability area is broken down into specific collections of knowledge and skills. Understanding an individual's proficiency with this knowledge and skills can provide insights into their strengths, weaknesses, and opportunities for improvement.

1 (Drucker, 1993; Sawyer, 2006; Schwab, 2017)

2(Organisation for Economic Co-operation and Development, 2018; Schleicher, 2020; World Economic Forum, 2016; United Nations Children Fund, 2022)



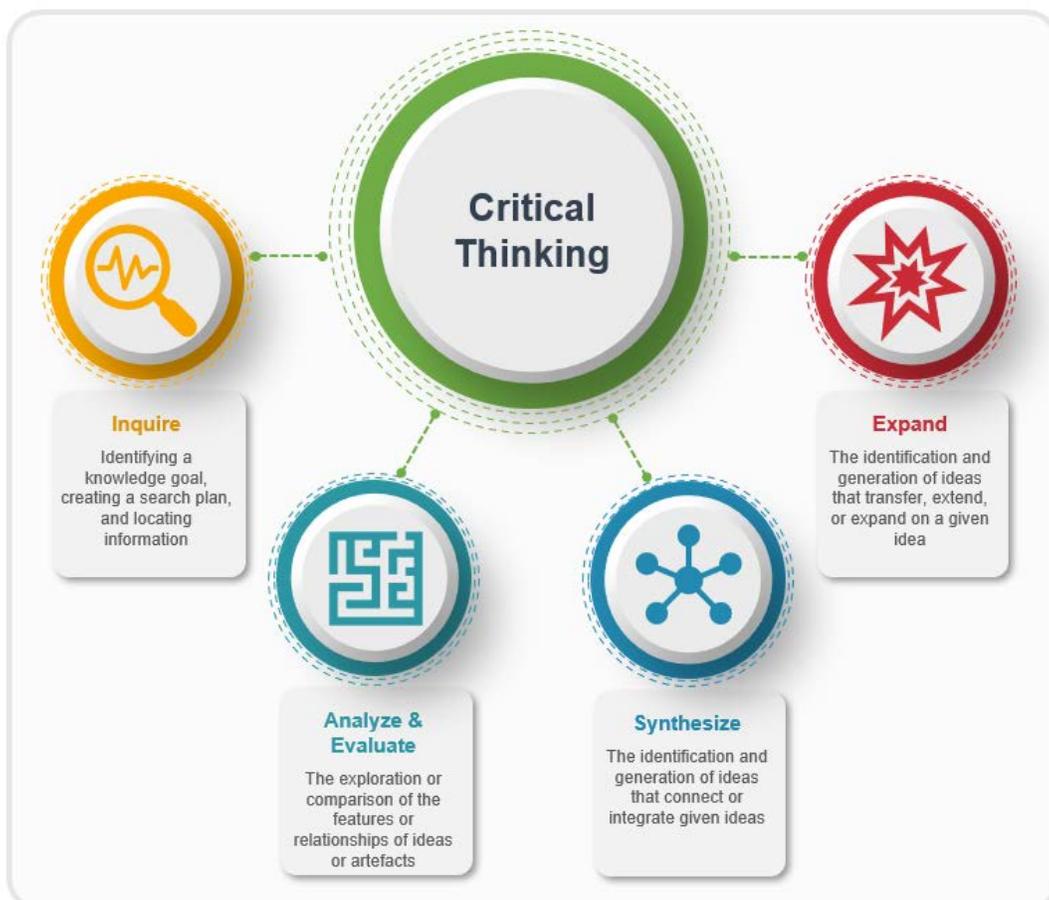
**CRITICAL  
THINKING**

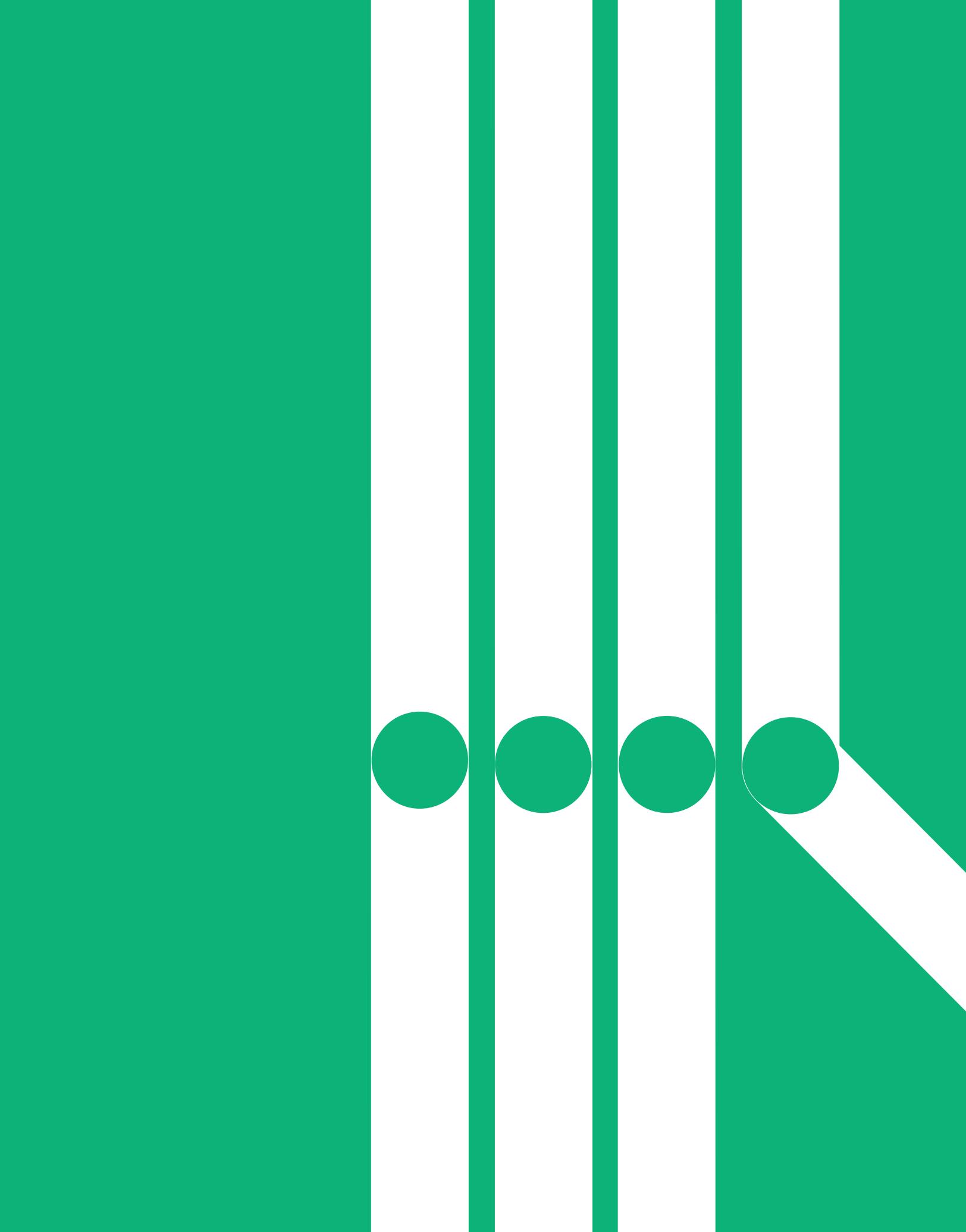
# CRITICAL THINKING

The ACT Holistic Framework's definition of critical thinking focuses on a set of critical thinking skills as they are applied in educational contexts, often implicitly, in common classroom and assessment tasks. ACT's critical thinking skills are decontextualized and transferrable across contexts and content. The Holistic Framework defines critical thinking as the skills and processes that support the critical consideration of ideas and information for the purpose of making a determination, decision, or judgment. These skills often build on each other to support more complex understandings and applications of ideas and information. The ACT critical thinking skills include: inquire, analyze & evaluate, synthesize, and expand.

Critical thinking has long been in high demand by educators and employers. The value of these skills for the workforce has been highlighted by organizations like the World Economic Forum and the Organisation for Economic Co-operation and Development. In addition to workforce importance, post-secondary, high school, middle school, and elementary school educators report critical thinking is a top skill for success in the classroom.

Individuals use critical thinking skills in a range of applied settings. Individuals are asked to locate information from various sources, categorize information, differentiate between ideas, explain their thoughts or work, and contrast information. Individuals are also often asked to summarize information or their understanding, integrate ideas, connect information, extend information by identifying the next steps in a process or a likely outcome, or transfer information to a different context. While definitions of critical thinking vary across the fields of philosophy, psychology, and education, they coalesce in their agreement of critical thinking as including skills that support analysis, making inferences using reasoning, problem solving, as well as making judgements, evaluations or decisions. ACT's definition of critical thinking builds on the educational approach to critical thinking to focus on the demonstration of higher-order thinking skills in a educational and workforce contexts.





**CREATIVE  
THINKING  
& INNOVATION**

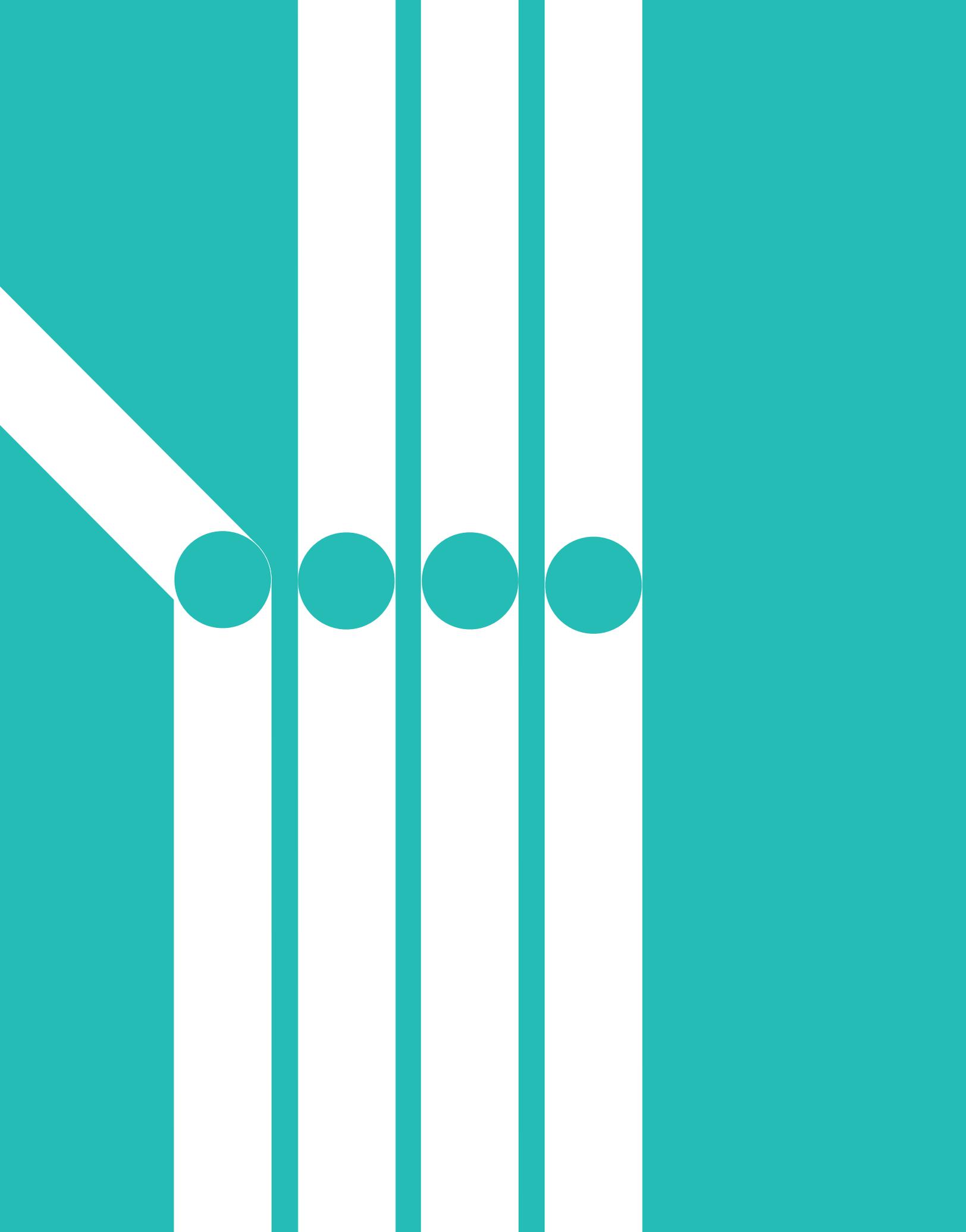
# CREATIVE THINKING AND INNOVATION

The ACT Holistic Framework’s conceptualization of creative thinking focuses on the skills and processes that support the development of a creative thinking and innovation skill set as it is applied in educational and workforce contexts. Beyond identifying effective creative thinkers, we focus on identifying and cultivating the skills that support the processes involved with creative thinking and innovation. To support the development and improvement of students’ creative thinking and innovation skills, we include skills that support the creative thinking process, such as the ability to identify and generate unconventional ideas. Further, we also emphasize the importance of understanding the difference between an unconventional idea and an idea that is unique but implausible, not useful, or inappropriate. The Holistic Framework defines creative thinking and innovation as the skills and processes involved with the generation of ideas that are unconventional, original, or innovative. ACT’s creative thinking & innovation skills include understanding conventions, identifying and generating diverse ideas, identifying and generating unconventional ideas, and evaluating and improving the unconventionality, plausibility, and usefulness of existing ideas. ACT’s creative thinking & innovation skills are conventional thinking, diverse thinking, unconventional thinking, and evaluate & improve.

Creative thinking and innovation skills have the potential to be significant differentiators in academia and the workforce. These skills help students stand out among their peers and help workers contribute to the advancement of their industries. Colleges and universities have recognized the value of this impactful skillset to transform content knowledge into innovative and potentially world-changing solutions. As a result, colleges and universities increasingly highlight these skills as a differentiator for admissions.

Individuals are often asked to use creative thinking and innovation skills in both the classroom and the workplace. Individuals are asked to brainstorm and generate different ideas or unconventional solutions to a problem as well as to evaluate, critique, augment, and improve either their own ideas or the ideas of others. These are all aspects of the creative thinking and innovation process. Creative thinking and innovation focuses on the skills and processes involved with the generation of ideas that are unconventional, original, or unique by expanding beyond known boundaries.





**COLLABRATIVE  
PROBLEM  
SOLVING**

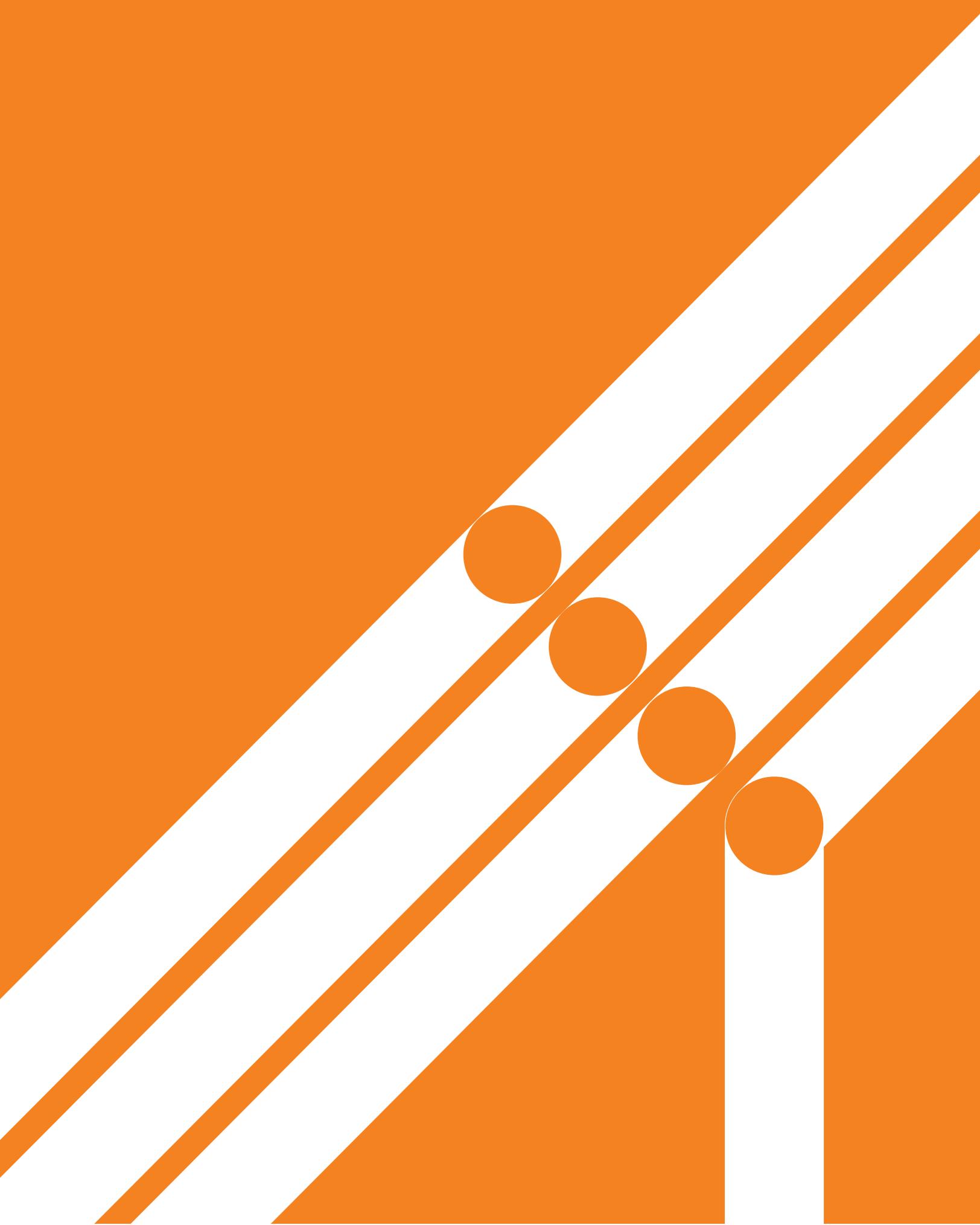
# COLLABORATIVE PROBLEM SOLVING

The ACT Holistic Framework’s definition of collaborative problem-solving focuses on the ways in which collaborative problem-solving skills are applied in educational and workforce contexts. In particular, students and employees frequently use these skills when they are asked to engage in peer-supported learning and group work. The Holistic Framework defines collaborative problem-solving as the social and cognitive skills and strategies required to collaborate with a group to work toward a common goal. The ACT collaborative problem-solving construct differentiates between two skill sets, team effectiveness and task effectiveness. These skill sets, used in concert, support effective and efficient collaborative problem-solving. Team effectiveness addresses interdependence through the distribution of resources or roles. The team effectiveness skills are inclusion; clarity of roles, goals, and tasks; commitment; and communication. Task effectiveness includes individual contributions to achieving group goals. The task effectiveness skills are problem orientation, strategy, execution, and monitoring & evaluation.

Modern society places a high value on innovation and problem solving. The innovation required and the advanced nature of the problems to be solved often require coordination of expertise, rather than simply an individual expert, to solve them. This coordination presents unique challenges. Individuals working in a team dynamic must use their expertise, problem solving skills, collaboration skills, and ability to elicit the expertise of others.

Individuals are often asked to work as a group or team to complete a task or project in which resources, roles, or activities are distributed among the group or team members who are given a common goal. In addition, individuals are often asked to negotiate their path and strategy for achieving this goal and monitor their progress toward that goal. In these tasks, the team’s success requires all team members’ communication, negotiation, and coordination of effort, input, and contributions. These activities encompass both the cognitive and non-cognitive skills involved with collaborative problem solving.





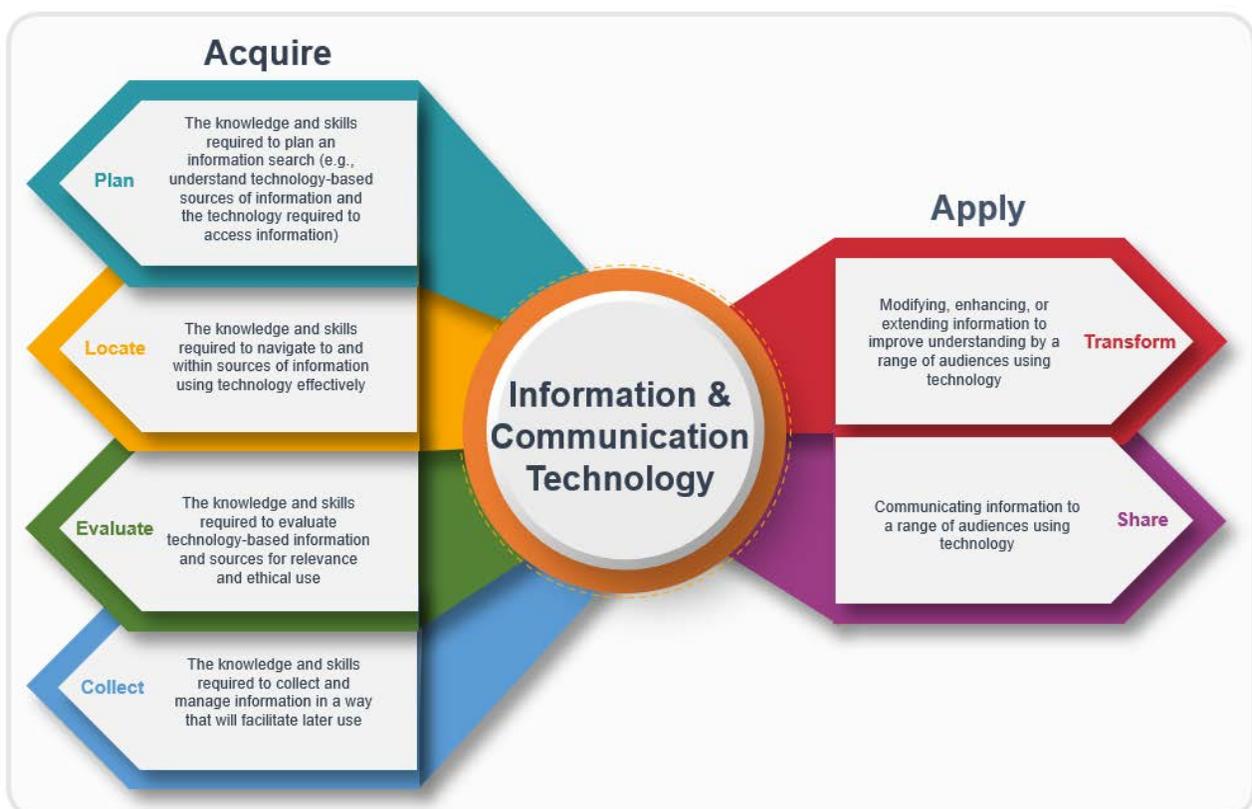
**INFORMATION &  
COMMUNICATION  
TECHNOLOGY**

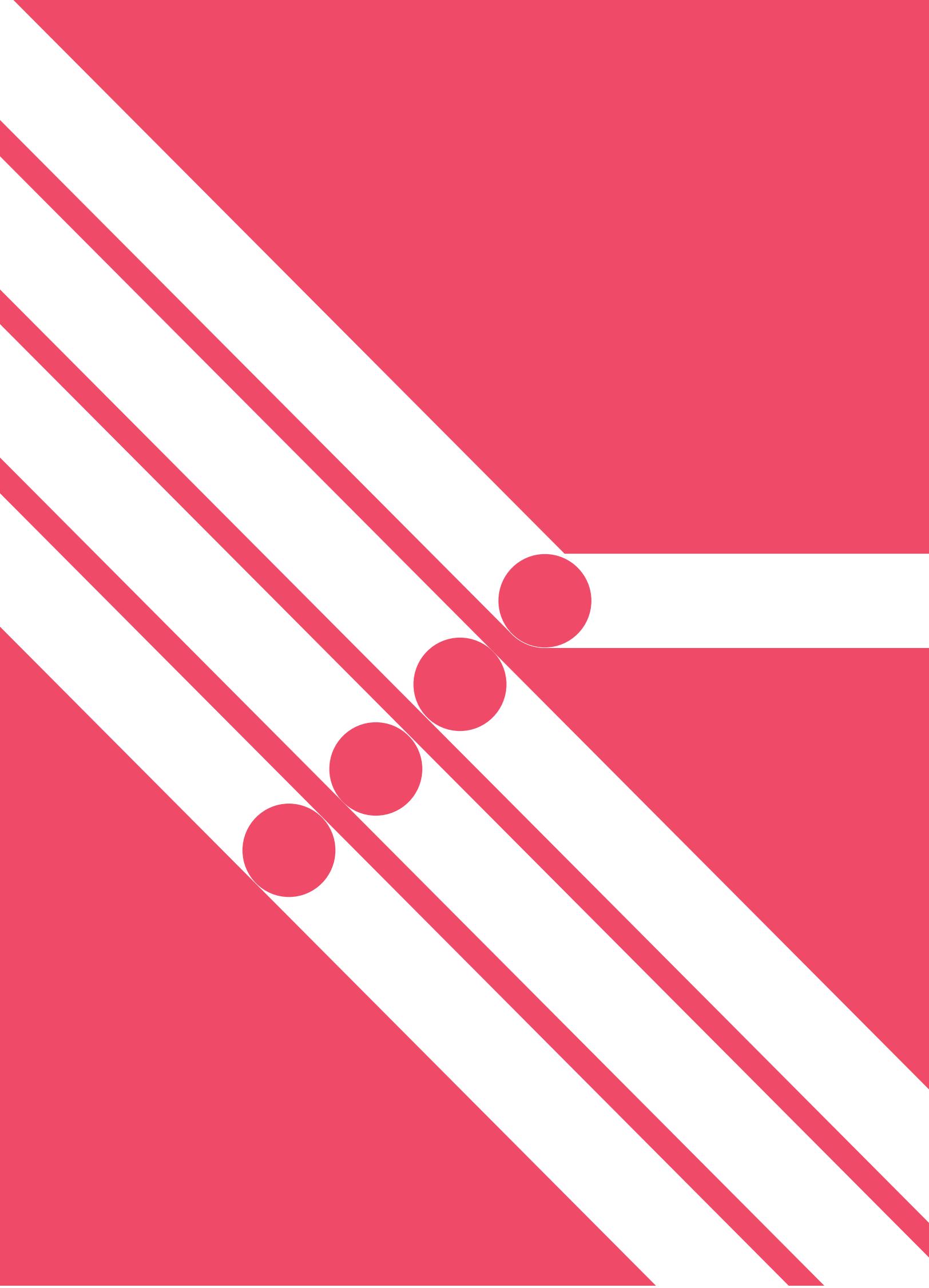
# INFORMATION AND COMMUNICATION TECHNOLOGY

The ACT Holistic Framework's ICT framework focuses on the ICT skills that support the ability to acquire and apply information using technology. The Holistic Framework defines ICT skills as the technology knowledge and skills required to effectively acquire and apply information. The ACT construct differentiates between two ICT skill sets: the skills needed to acquire information (acquire skills) and the skills needed to apply it (apply skills). Acquire skills focus on understanding sources of information, the technological tools required to navigate them, and the ways in which various forms and quantities of information can be collected for later use or reference. Apply skills focus on understanding how technology can be used to effectively transform and share information with a wide range of audiences. Acquire skills include the ability to plan, locate information, evaluate information, and collect information. Apply skills include the ability to transform and share information.

Few skills could be more impactful in the 21st century than the ability to effectively acquire information and apply information using technology. It is increasingly through technology that students are able to effectively learn and apply that learning. It is also through technology that participants in the workforce are able to continue to address the expanding requirements of an international and technology-dependent economy.

ICT skills have become heavily embedded in daily tasks such as accessing work and school related materials, searching for information, and accessing learning tools online. ICT skills have also become essential tools for group collaboration and the production of collaborative work, documentation, and presentations, including the use of multimedia.





**SELF-DIRECTED  
LEARNING**

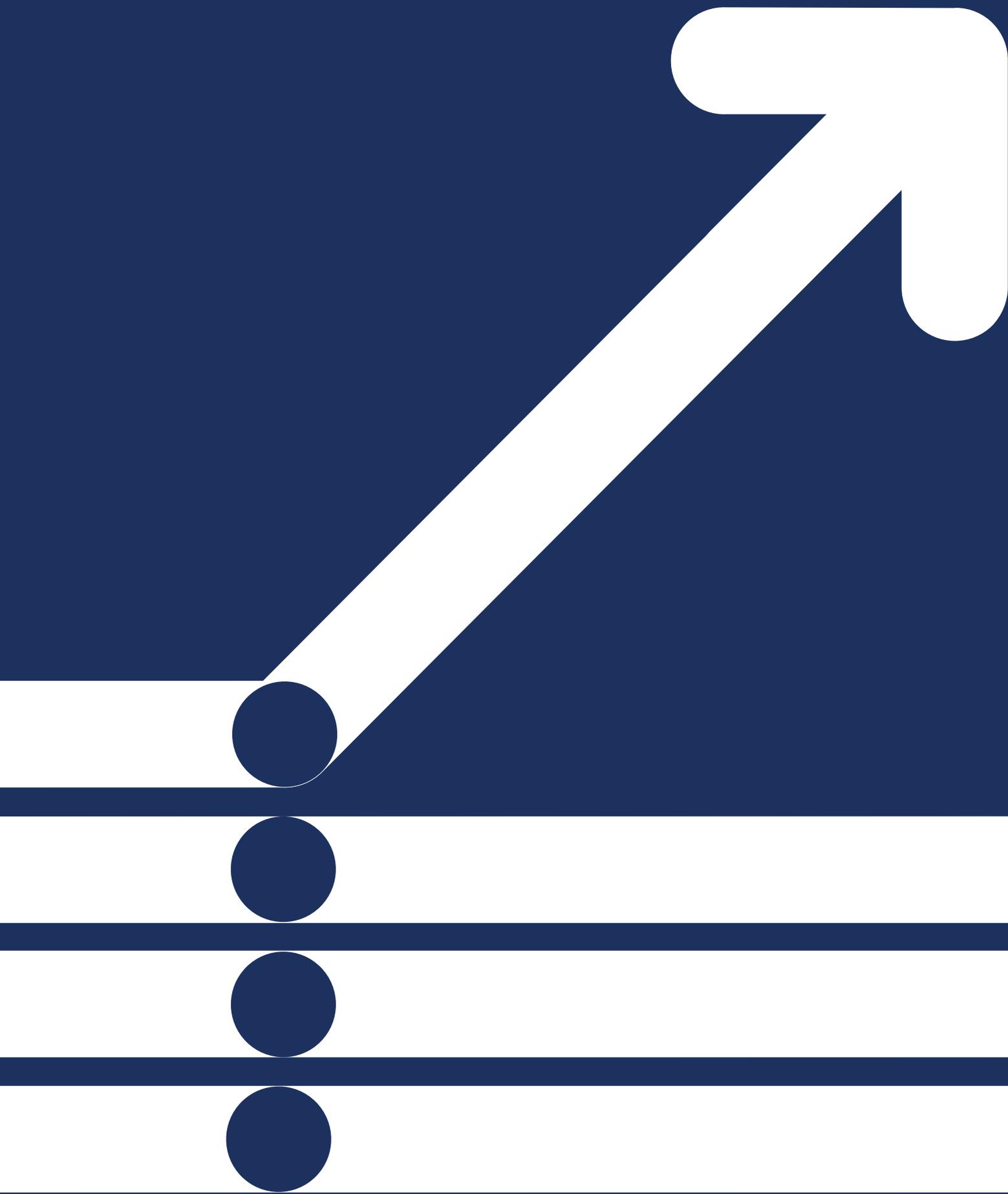
# SELF-DIRECTED LEARNING

The ACT Holistic Framework's definition of self-directed learning focuses on a set of skills used in formal and informal contexts to support independent student learning. The Holistic Framework defines self-directed learning as the active processes through which students monitor their learning, make adjustments, and use strategies to achieve their learning goals. ACT organizes self-directed learning into three phases and eight skills. These phases and skills were selected due to their inclusion in prior frameworks of self-directed learning and their importance to student learning. The three phases are prepare, execute, and evaluate. The eight skills are identify task, set goals, plan, implement, monitor, adjust, reflect, and adapt.

Learning environments have changed dramatically in recent years. Increasingly, learning happens outside of face-to-face settings and takes place in settings with less supervision, often due to advances in technology (e.g., MOOCs, flipped classrooms, hybrid learning). These advances in technology provide unparalleled opportunities for individuals to access information and customize their learning. To take advantage of these opportunities and adapt to these new learning environments, individuals need the skills to learn independently. Even in more traditional educational settings with additional guidance, individuals often still have control over at least some aspects of their learning. Thus, self-directed learning skills are critical to their success.

Individuals use self-directed learning skills any time they prepare for an upcoming test, decide to learn a new concept, or build on their existing knowledge and skills. Effective use of these skills enables them to prepare for each learning experience, use strategies like self-explanation or practice testing, reflect back on their learning, and adjust for future experiences. Indeed, the use of self-directed learning skills is related to greater academic achievement.





**TAKEAWAYS**

# APPLYING THESE SKILLS TO COLLEGE AND CAREER READINESS

The cross cutting capabilities framework focuses on skills that are consistently identified as critical for success along the entire Kindergarten to Career continuum.

When combined with the knowledge and skills of core academic contents, cross-cutting capabilities can empower people to fulfill their potential as effective and creative knowledge seekers, communicators, and problem solvers.

Integrating these abilities into your curriculum or organization can help you prepare individuals for a education and workplace landscape.

## TRACKING AND EVALUATING SKILLS

How should you get started? How do you measure and cross-cutting capabilities into your school or organization?

ACT is dedicated to helping develop and measure the cross-cutting capabilities of students and employees. Beyond our current offering we continue to innovate and pioneer new methods and tools. Please contact us to learn more about our current opportunities or to participate in our ongoing innovation.