

Defining the Skills That Matter: Adapted for MATH

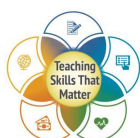


The Skills That Matter are the foundational skills needed for an adult learner to function effectively within the workforce and civic and community life. The Skills That Matter include the following:

Adaptability and Willingness to Learn	
<p>Definition: Adaptability is the quality of being able to “roll with” new situations, such as a change in leadership, a revised work assignment, or an unexpected life event. Adaptability (or flexibility) is highly valued in the workplace and is a factor of emotional intelligence. Willingness to learn is often related to adaptability, especially when a new situation requires new skills. Demonstrating an interest in (and pursuing) continuing education and professional development is key to success in the technology-rich environments of the 21st century.</p>	<p>Math Example: Students solve problems in a variety of ways. If one approach doesn't work, they try another one from their math tool box.</p> <p>Math Example: Despite a difficult history with math, such as math anxiety, students show resilience when presented with challenging math material. Students choose to persist in learning, even when they may not feel confident in their abilities. This allows them time to feel more comfortable and receive sufficient support. With small successes, they can build confidence. Those who catch on assist others.</p>
Communication	
<p>Definition: Adults with strong communication skills can convey information to others effectively and efficiently, and they can do so verbally, nonverbally, and in writing. They can repair communication breakdowns when they occur and can adjust their communication style and register (e.g., formal, informal, or colloquial) to match their listeners' or readers' needs and expectations. Communication skills also include the effective use of visuals, multimedia, and digital platforms to convey information.</p>	<p>Math Example: Students use math journals to explain their work in writing and also record difficulties and successes. Teachers communicate that it is okay for students to express how they are feeling about math. Students let instructors know their level of comfort with math.</p> <p>Math Example: Students don't always want to communicate their level of math understanding; however, when using this skill, communication between teachers and students remains open.</p> <p>Math Example: A student presents a math problem at the board using visuals, graphs, equations or writing. They explain their reasoning while responding to questions from peers.</p>

Critical Thinking	
<p>Definition: Critical thinking involves being open-minded and rational. It is informed by evidence and helps users arrive at decisions or conclusions that go beyond factual recall. In adult education classrooms, critical thinking skills involve actively applying thinking strategies that range from analyzing relationships between components to drawing conclusions from a variety of data. Critical thinking skills are essential for adult learners to thrive in their communities, workplaces, and postsecondary or career training opportunities.</p>	<p>Math Example: Students consider various approaches when encountering a new math question. Students construct viable arguments and critique the reasoning of others.</p> <p>Math Example: Teachers provide practice with critical thinking for students by welcoming different approaches to solving problems and leading student discussions that explore different ways of thinking.</p>
Interpersonal Skills	
<p>Definition: Sometimes called “people skills,” strong interpersonal skills are the qualities and behaviors a person uses to interact with others appropriately. These skills are essential to successful communication and systems navigation across contexts. Examples of interpersonal skills sought after in the workplace include team management and team building, conflict management, consensus building, and problem-solving. Qualities associated with strong interpersonal skills include demonstrating empathy, a positive attitude, honesty, patience, diplomacy, and leadership.¹</p>	<p>Math Example: In a math classroom, group work is encouraged and essential for solving math problems. In groups, students listen to the reasoning of others and work cooperatively with their classmates. Group norms are established so that students understand that a statement like, “This is easy” is not appropriate because they know what is easy for one student may be difficult for another.</p>
Navigating Systems	
<p>Definition: Navigating systems is the ability to successfully operate within the institutions and organizational structures that are part of 21st-century communities, workplaces, schools, and families.</p>	<p>Math Example: Students find and use tools, such as tables, graphs, diagrams, flow-charts, and formulas to identify important quantities in practical situations, such as census data of their community. When finding and using online tools, such as Desmos, students recognize they may feel challenged at first but persist.</p>

¹ See <https://www.thebalancecareers.com/interpersonal-skills-list-2063724> for an extensive list of interpersonal skills.



Problem-Solving

Definition: Problem-solving has been identified as one of the top two skills employers look for in job applicants, but it is also part of adult daily life (e.g., work/life balance; parenting choices; managing finances; etc.). The key stages in problem-solving are to 1) identify the problem, 2) propose solutions, 3) analyze solutions (and consequences) in order to select a solution, and 4) apply or implement the solution. In the adult education classroom, these four stages often take the form of 1) reading or listening to a problem scenario and determining the problem; 2) brainstorming solutions; 3) creating a pros and cons T-chart for the solutions to select one; and 4) applying the solution in a writing task (making a claim and supporting it with evidence) or a role-play or oral presentation that envisions the scenario from problem to solution to consequences.

Math Example: Problem solving is not simply using rote memorization to find the answer to a math problem. Problem solving is thinking about which tools might be necessary to find an answer and to use those tools strategically. Problem solving may involve running different scenarios and finding multiple solutions and then deciding which quantity makes the most mathematic or financial sense. For example, in a cleaning service scenario, at what point does a more expensive vacuum cleaner make more sense over a cheaper one?

Processing and Analyzing Information

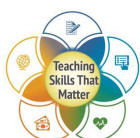
Definition: In processing and analyzing information, adult learners first read or listen closely to information related to the target topic or issue, then use thinking tools such as graphic organizer to breakdown and analyze the components of the topic or issue. Learners then work with these components to quantify, compare, contrast, and/or identify relationships between them. Finally, learners assess and reflect on the results of their analysis.

Math Example: Students take the time they need to understand math material in order to reason abstractly and quantitatively. They make sense of quantities and their relationship in math situations. Students use symbolic representations. For example, they understand the meaning of equations, not just how to compute them. Students can also model situations using digital tools such as Excel and Desmos to make their graphical analysis.

Respecting Differences and Diversity

Definition: Diversity is a hallmark of 21st-century workplaces, training rooms, classrooms, and communities. Adults' success in these environments requires the ability to interact with others respectfully, accommodating their different lifestyles and needs and accepting their diverse viewpoints and expertise. Learners demonstrate this skill by actively listening to, considering, and responding appropriately to teammates from diverse backgrounds.

Math Example: Students recognize that other students have different levels of prior math knowledge and skills. There is more than one way to solve a math question, and all students can learn from their peers' varied math approaches. There is no neurotypical in math. Everyone respects everyone else's math reasoning. There is no "good at math" or "bad at math." There is just "where you are" in math, and students accept others where they are. Speed does not make you better at math. "Mistakes are expected, respected, inspected."



Self-Awareness

Definition: Self-awareness is the ability to take stock of one's own emotions, thoughts, and values and recognize their impact on one's own (and others') behavior. It is the ability to accurately assess one's strengths and limitations while maintaining a "growth mindset." Being self-confident and demonstrating self-efficacy are attributes of self-awareness that allow adult learners to set and achieve personal and professional goals.

Math Example: During a lesson on household budgeting and ways to save for unforeseen repairs, students are researching the local gas company's "monthly repair plan" and are calculating its cost/benefit. A student less proficient in math becomes anxious and begins to disengage from the lesson but does some self-talk to remind himself that any mistakes help the team learn. He also asks a classmate to work as his partner for this portion of the lesson.

Adapted for MATH from:

TSTM Toolkit: <https://lincs.ed.gov/sites/default/files/DefineSkillsThatMatter-508.pdf>

Definitions Adapted From the Following Sources:

ATLAS (ABE Teaching & Learning Advancement System). (2013). Transitions Integration Framework. Retrieved from <http://www.atlasABE.org/professional/transitions>

Costa, A., & Kallick, B. (2000). *Habits of mind. A developmental series*. Alexandria, VA: Association for Supervision and Curriculum Development.

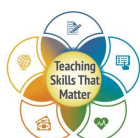
National Association of Colleges and Employers. (2017). *The key attributes employers seek on students' resumes*. Retrieved from <https://www.naceweb.org/about-us/press/2017/the-key-attributes-employers-seek-on-students-resumes/>

National Institute for Literacy. (2000). *EFF content standards for adult literacy and lifelong learning*. Washington, DC: Author.

Johnson, K., & Parrish, B. (2010). Aligning instructional practices to meet the academic needs of Adult ESL students. *TESOL Quarterly*, 44(3), 618–628. Retrieved from <http://www.jstor.org/stable/27896750>

Leonard, W. P. (2014, June 13). Teach students soft skills. *University World News*, Issue No. 324. Retrieved from <http://www.universityworldnews.com/article.php?story=20140611144116863&query=teach+students+soft+skills>

Pritchard, J. (2013). The importance of soft skills in entry-level employment and postsecondary success: Perspectives from employers and community colleges. Seattle, WA: The Seattle Jobs Initiative. Retrieved from http://www.seattlejobsinitiative.com/wp-content/uploads/SJI_SoftSkillsReport_vFINAL_1.17.13.pdf



Raine, L., & Anderson, J. (May 23, 2017). *The future of jobs and training*. Washington, DC: PEW Research Center. Retrieved from <https://www.pewinternet.org/2017/05/03/the-future-of-jobs-and-jobs-training/>

The Foundation for Critical Thinking. (n.d.). *Our concept and definition of critical thinking*. Tomales, CA: Author. Retrieved from <https://www.criticalthinking.org/pages/our-concept-and-definition-of-critical-thinking/411>

The Partnership for 21st Century Skills. (2009). *P21 framework definitions*. Retrieved from <http://www.21stcenturyskills.org>

The Secretary's Commission on Achieving Necessary Skills. (1991). *What work requires of schools: A SCANS Report for America 2000*. Washington, DC: U.S. Department of Labor.

Workforce Solutions Collaborative. (2011). *Workforce education standards for adult education programs*. Philadelphia, PA: United Way of Southeastern PA.

