



21ST CENTURY SKILLS:

Preparing Students for Future Success

21st Century Skills: Preparing Students for Future Success

Introduction

Although critical thinking, communication, collaboration, and creativity have always been important, recent years have seen an increased focus on these and other “21st century skills” as occupations increasingly incorporate some form of digital technology, and subsequent changes in the nature of work have increased demand for analytical, problem-solving, and interpersonal skills (National Research Council, 2012; Partnership for 21st Century Learning [P21], 2015). In addition, changes in technology and job requirements demand that people learn new skills throughout their lives, requiring increased levels of learning ability and self-management (Autor, Levy, & Murnane, 2003; Berger & Frey, 2016). A study by the OECD reported that “adults with higher proficiency in literacy, numeracy, and problem solving in technology-rich environments tend to have better outcomes in the labour market than their less-proficient peers. They have greater chances of being employed and, if employed, of earning higher wages” (Organization for Economic Cooperation and Development, 2016, p. 17).

The National Research Council (2012) defines 21st century competencies as “transferable knowledge, including content knowledge in a domain and knowledge of how, why and when to apply this knowledge to answer questions and solve problems” (p. 6). The emphasis is on “deeper learning, [which] allows the individual to transfer what was learned to solve new problems” (p. 6).

P21’s (2015) framework includes four major areas of “knowledge, skills and expertise students should master to succeed in work and life in the 21st century” (p. 2). These areas are:

1. key subjects and themes which encompass language arts, math, and science, as well as global awareness and civic literacy
2. learning and innovation skills that include creativity, critical thinking and problem solving, and communication and collaboration
3. information, media, and technology skills, including information and media literacy
4. life and career skills including flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, and leadership and responsibility.

Among the areas specified in the P21 framework, the “Four Cs” (critical thinking, communication, collaboration, and creativity) have been identified as most important for K–12 education (National Education Association, 2012).

Knowledge and skills in the content areas consistent with the call for 21st century skills also appear in new literacy and science standards. The National Research Council (2012) identified constructing and evaluating evidence-based arguments, non-routine problem solving, complex communication, and critical reading as the “areas of strongest overlap” between 21st century skills and modern academic standards.

Learning A–Z resources can help support the development of 21st century skills through content in English language arts and science in which communication, collaboration, and argument are key to solving problems as a group.

Learning A–Z Resources to Support 21st Century Skills

Raz-Plus and Reading A–Z

- **Project-Based Learning Packs** were designed to develop students’ creativity, critical thinking, problem solving, communication, and teamwork skills. Each pack includes a lesson plan with an anchor text, driving question, and multiple resources to support guided inquiry.
- **Literature Circles** involve a structured process that includes research-based teaching strategies, such as encouraging motivation with choice, modeling and support in guiding students’ independent learning, and meaningful engagement with text both independently and in group discussion. Students have an opportunity to develop and practice close reading as well as critical thinking, communication, and collaboration. A meta-analysis of studies on the effects of classroom discussion on reading comprehension found that literature circles resulted in positive effects related to the amount of student talk, general comprehension, and text-implicit comprehension (Murphy, Wilkinson, Soter, Hennessey, & Alexander, 2009).
- **Argumentation Skill Packs** use the “teach, practice, and apply” instructional approach to introduce students to the fundamentals of argument, including identifying claims, reasons, evidence, and point of view.
- **Close Reading Packs** include short passages with a key question that students must answer based on evidence from the text.
- **Close Read Passages and Question Guides** lead students through repeated readings of a single passage using strategic discussion and questioning at multiple layers of depth.
- **Leveled Books** include discussion cards to promote critical thinking, collaboration, and discussion.
- **Paired Books** allow students to compare multiple, related texts. Three types of text-dependent questions require students to (1) construct an answer from evidence found in one place within a text, (2) gather evidence from multiple places within a text or across texts, and (3) make inferences based on evidence from the text and experience.

Science A–Z

- **Investigation Packs** are group science activities designed to help students apply scientific practices, engage in scientific argumentation, and develop critical thinking, collaboration, and communication. Investigation Files feature high-interest, in-depth informational text. Students do a close reading of the Investigation Files and then cite evidence that helps them solve the Mystery File in each pack through group discussion.
- **Project-Based Learning Packs** provide resources to encourage development of creativity, critical thinking, communication, and collaboration skills. Students work in teams to investigate an overarching science question or design solutions for an engineering challenge.
- **Debates** are structured exercises to help students develop skills in scientific argumentation based on evidence. Students are presented with a fictional but realistic scenario and must consider arguments for or against a proposal, take a position, and defend it in a friendly, structured format. Students learn to conduct research, form opinions, communicate with peers, consider other points of view, and make new judgments based on arguments supported by evidence.

- **Process Activities** are hands-on science activities and experiments. Students identify and solve problems and communicate their findings through speaking, listening, and writing. Students also practice proposing new solutions, designing experiments, and testing new ideas as they collaborate with peers.
- **Storylines** include phenomenon-driven lesson plans and assessments. Each Storyline includes an exploration of Disciplinary Core Ideas and Crosscutting Concepts through engagement in Science and Engineering Practices within an integrated series of lessons.
- **Science Fair Resources** include lists of science fair project ideas for students to choose from or use as inspiration for their own research questions.

Writing A–Z

- **Process Writing Lessons** include leveled resources to teach the five steps of the writing process—prewrite, draft, revise, edit, and publish—across informative/explanatory, narrative, opinion/argument, and transactional writing genres. Studies have shown that explicit strategy instruction in planning, revising, and editing and a process approach to writing can be effective in improving the quality of students’ writing (Graham, McKeown, Kiuahara, & Harris, 2012; Graham & Perin, 2007).
- **Skill Lessons** focus on individual composition elements, including conventions, sentences (simple, compound, combined, and complex), word choice, openings, and closings.
- **Build-A-Book** allows students to exercise their creativity and media skills as they write and publish their own digital books. Students can create books in nearly any genre or subject. Build-A-Book supports steps of the writing process with prewriting, drafting, revision, and publication to the online Kids Writing Library.
- **Write Your Way** supports students’ creative writing skills as they develop short writing compositions and draw pictures to support their text. The tool can be used for journaling, freewriting, quick essays, responses to reading, or other daily writing activities.
- **Wordless Books** are illustrated books that allow students to create and communicate an original story based on the pictures given.
- **Writing Prompts** include photographs, illustrations, and written prompts that can be used to inspire original student compositions.

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