P21 Common Core Toolkit

A Guide to Aligning the Common Core State Standards with the Framework for 21st Century Skills

Partnership for 21st Century Skills

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Introduction

Standards drive critical elements of the American educational system — the curricula that schools follow, the textbooks students read, and the tests they take. Similarly, standards establish the levels of performance that students, teachers and schools are expected to meet.

To succeed in the 21st century, all students will need to perform to high standards and acquire mastery of rigorous core subject material. All students also will need to gain the cognitive and social skills that enable them to deal with the complex challenges of our age. The Partnership for 21st Century Skills (P21) Framework for 21st Century Readiness emphasizes life and career skills, learning and innovation skills, information, media and technology skills as well as core subjects and 21st century themes (please see the full framework in the appendix).

Over the past decade, many organizations such as P21 have advocated for standards that adequately address both the core academic knowledge and the complex thinking skills that are required for success in college, life and career in the 21st century.

The release of the Common Core State Standards (CCSS) in 2010 has been an important turning point in the standards movement. For the first time, a majority of states have agreed to a common baseline for academic knowledge and college readiness skills. Currently, over 40 states have begun the challenging work of alignment, integration and implementation of CCSS for English language arts (ELA) and mathematics. Districts have also begun intensive curricular redesign work in response to the Common Core State Standards.

The CCSS work that is occurring all over the country presents a unique opportunity for educators to focus on a critical question:

Are we focusing our teaching and learning systems around the right college and career ready outcomes for all students?

Fusing the three Rs and the four Cs

As education leaders incorporate the CCSS into school systems, P21 urges them to do so in a way that honors the fusion of the 3Rs (core academic content mastery) and 4Cs (critical thinking and problem solving, collaboration, communication and creativity and innovation).

It is imperative that the CCSS be considered the "floor"—not the "ceiling"—when it comes to expectations for student performance in the 21st century.

Many P21 partner states and their district leaders have already begun this work. They serve as leading examples of how this work can and should be carried out in English language arts and mathematics. They have helped produce this toolkit in the hopes that it will support the efforts of all state and district leaders who are committed to preparing our young people to succeed in college, career and life.

WHAT THIS TOOLKIT CONTAINS

This toolkit is designed for state and district leaders who are interested in implementing the Common Core standards in ways that strengthen the 4Cs.

- **Alignment Overview**

  A high-level summary of how the P21 framework and the Common Core State Standards support each other

- **Common Core / P21 Examples**

  Lesson starters that illustrate "what it looks like" to align instructional practices with both the common core and P21 skills

- **Common Core Resources**

  Compilation of useful links for states and districts working to implement the Common Core State Standards

- **Assessment Resources**

  Compilation of background reading on the issue of assessment and the 4Cs

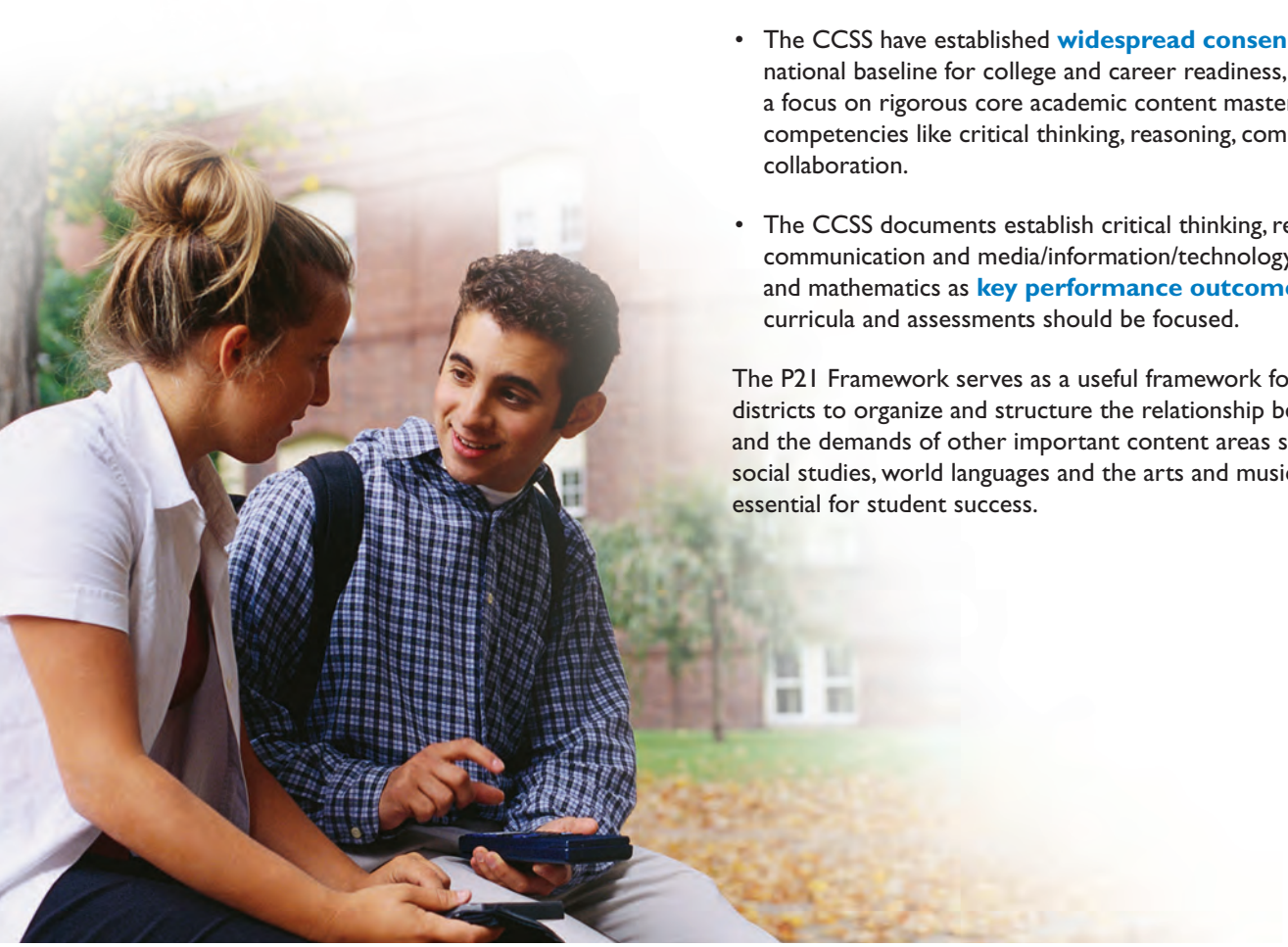
Alignment Overview: P21 Framework and the Common Core State Standards (CCSS)

The P21 Framework is a comprehensive definition of what students should know and be able to do to succeed in college, career and life in the 21st century.

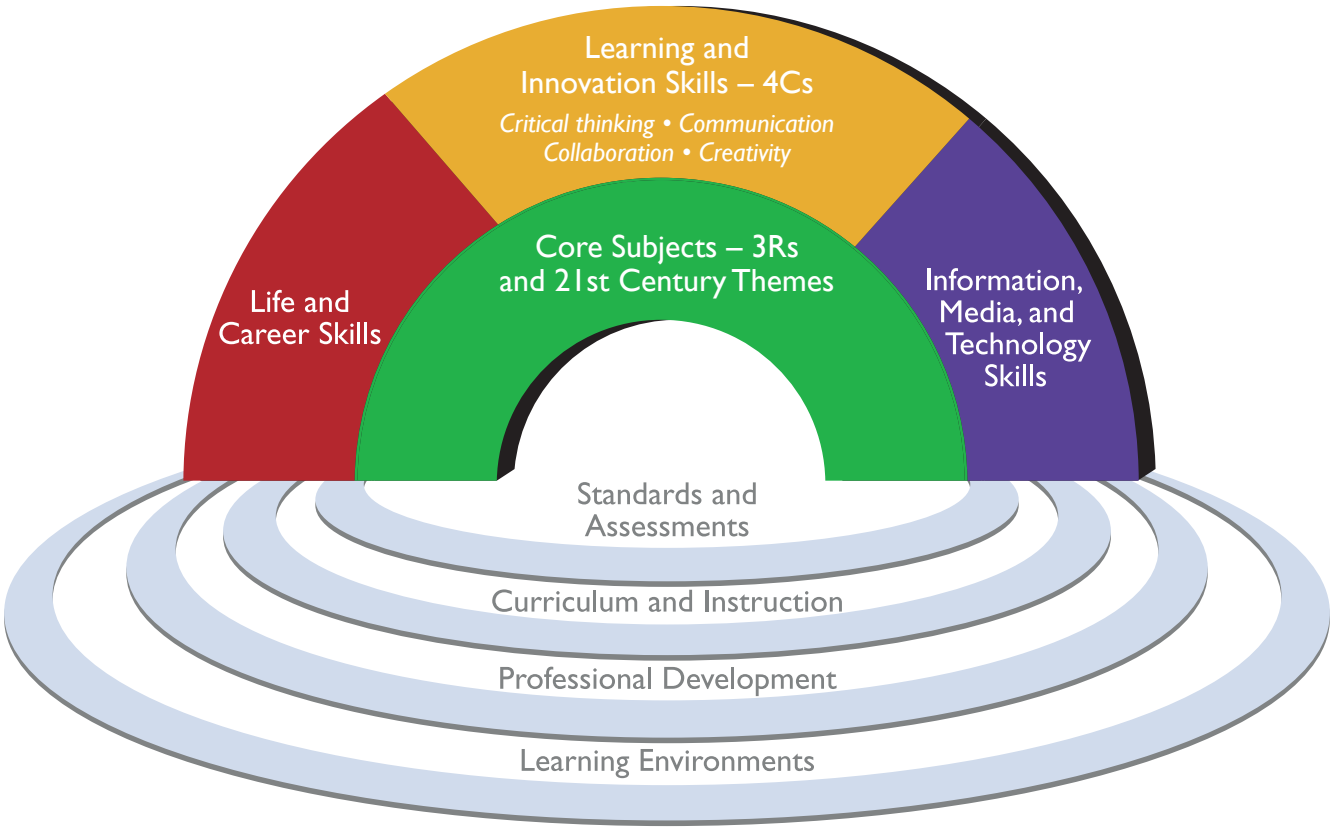
P21 has long advocated that the full range of knowledge and skills articulated in the P21 Framework be integrated explicitly into standards, assessments, curriculum, instruction, professional development and learning environments. From this perspective, the Common Core State Standards Initiative (CCSS) for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects (ELA) and the Common Core State Standards for Mathematics are a welcome development in the standards movement for several key reasons:

- The CCSS explicitly call for, and integrate, **higher-order thinking skills** as a means to achieving career and college readiness for all students.
- The CCSS have established **widespread consensus** around a national baseline for college and career readiness, which includes a focus on rigorous core academic content mastery along with competencies like critical thinking, reasoning, communication and collaboration.
- The CCSS documents establish critical thinking, reasoning, communication and media/information/technology literacy in ELA and mathematics as **key performance outcomes** around which curricula and assessments should be focused.

The P21 Framework serves as a useful framework for states, schools and districts to organize and structure the relationship between the CCSS and the demands of other important content areas such as science, social studies, world languages and the arts and music that are also essential for student success.



21ST CENTURY STUDENT OUTCOMES AND SUPPORT SYSTEMS



(Please see the appendix for the full list of skills and their definitions.)

While the CCSS do not explicitly address every skill in the P21 Framework, several areas (such as critical thinking, communication and collaboration) are strongly represented throughout. These areas of the CCSS are good places for educators interested in 21st Century Skills to begin—but not end—the work of preparing students for success in college, career and life.

A brief overview of the CCSS for ELA and mathematics and their relationship to the P21 Framework is included on the pages that follow.

English Language Arts – Overview

Overall, the ELA standards are infused with many 21st Century Skills such as critical thinking, communication, information literacy and collaboration. The CCSS in English language arts does an excellent job of articulating college and career readiness in ways that are strongly aligned with the P21 Framework.

EXAMPLES OF THE STRONGEST AREAS OF ALIGNMENT:

P21 Framework Element	CCSS ELA College and Career Ready Definition
Core Subjects	Build strong content knowledge
Critical Thinking and Problem Solving	Respond to the varying demands of audience, task, purpose, and discipline
Communication	Comprehend as well as critique
Information Literacy	Value evidence
Self Direction	Demonstrate independence
Global Awareness	Come to understand other perspectives and cultures
Information, Media and Technology Skills	Use technology and digital media strategically and capably

In addition, the CCSS ELA document is organized around anchor standards, providing a compelling structure for each of the five strands (reading, writing, speaking/listening and language).

The anchor standards are rigorous (e.g., they emphasize reading complex texts and mastering appropriate vocabulary) while also attending to specific 21st Century Skills.

Educators who are interested in 21st Century Skills will note the following:

- **Integration of Knowledge and Ideas** (in Reading) emphasizes interpretive and analytical skills across a range of texts, digital information and media.
- **Research to Build and Present Knowledge** (in Writing) is excellent; the strand is prominent and thoughtfully articulated. The indicators at each grade level support the development of inquiry-based research skills in the context of writing, all of which are central to critical thinking.
- **Comprehension and Collaboration** (in Speaking and Listening) effectively highlights the importance of interpersonal communication and collaboration as a key aspect of mastering speaking and listening.

In addition, the CCSS for ELA focuses on literacy in history/social studies, science, and technical subjects. P21 applauds the inclusion of cross-disciplinary literacy as an important 21st century approach to ELA standards.

THE ELA STANDARDS:

Reading

- Key Ideas and Details
- Craft and Structure
- Integration of Knowledge and Ideas
- Range of Reading and Level of Text Complexity

Writing (includes Standards for Literacy in History/Social Studies, Science and Technical Subjects)

- Text Types and Purposes
- Production and Distribution of Writing
- Research to Build and Present Knowledge
- Range of Writing
- Speaking and Listening
- Comprehension and Collaboration
- Presentation of Knowledge and Ideas

Language

- Conventions of Standard English
- Knowledge of Language
- Vocabulary Acquisition and Use

Brief abstracts that can be used to develop lessons are included later in this document.

Mathematics

P21 supports the view that mathematics as a content area is inherently aligned with the 4Cs. Solving problems that haven't been solved before, finding proofs, puzzling, understanding patterns and finding meaning in statistics all require critical thinking, creativity, innovation and information literacy. These habits of mind are evident in the CCSS and are central to the teaching and learning of mathematics, as has been advocated by national mathematics content groups such as the National Council of Teachers of Mathematics (NCTM).

The CCSS mathematics standards provide an excellent step forward in the integration of critical thinking and reasoning in the teaching and learning of math. The standards emphasize critical thinking most obviously in the "Standards for Mathematical Practice" section, which precedes the Mathematical Content Standards.

The Standards for Mathematical Practice draw from NCTM's process standards (problem solving, reasoning and proof, communication, representation, and connections) and the strands identified by the National Research Council's report *Adding it Up* (adaptive reasoning, strategic competence, conceptual understanding , procedural fluency and productive disposition.)

The practices section aligns with several key competencies in the P21 Framework.

EXAMPLES OF THE MOST EXPLICIT INTERSECTIONS WITH P21

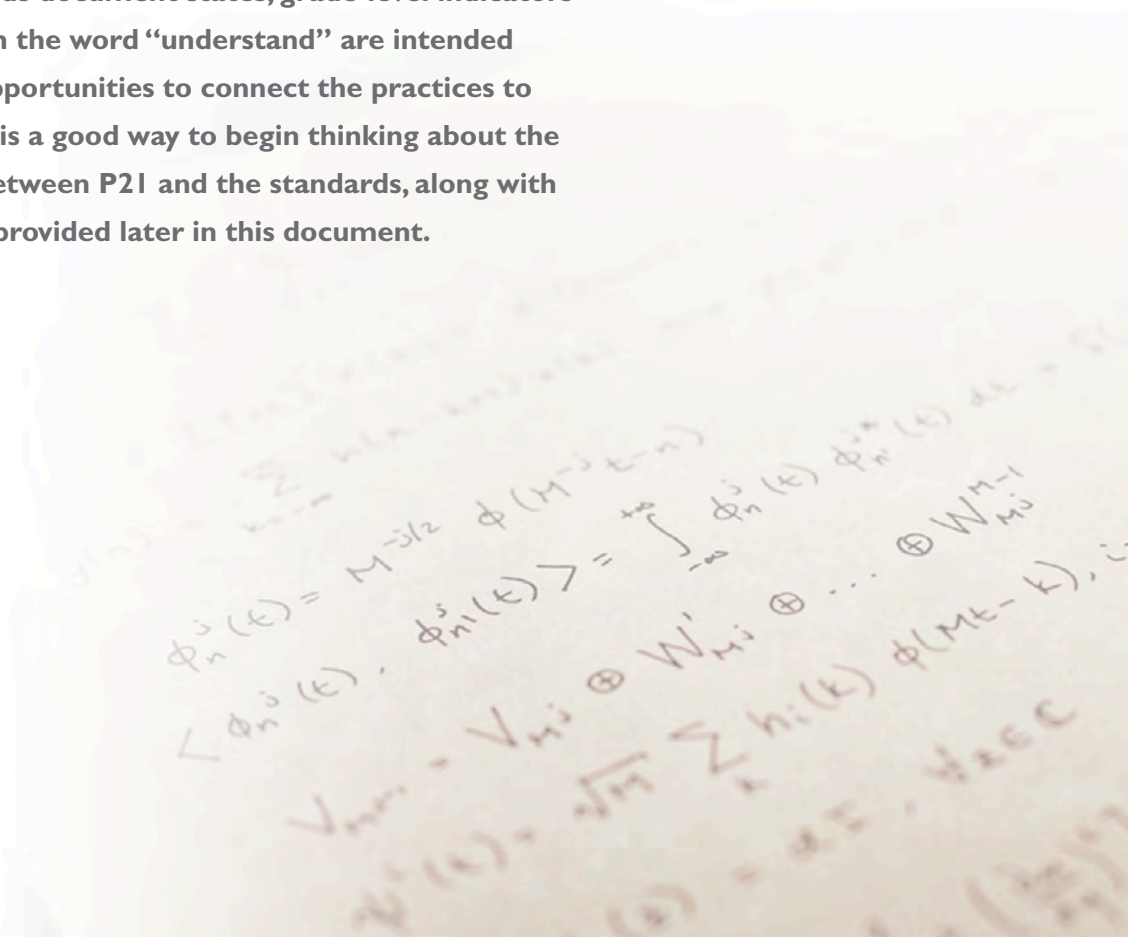
P21 Skill	Mathematics Practices
Critical Thinking and Problem Solving	Make sense of problems and persevere in solving them
	Reason abstractly and quantitatively
	Model with mathematics
	Look for and make use of structure
Communication Information Literacy	Construct viable arguments and critique the reasoning of others
	Attend to precision
	Look for and express regularity in repeated reasoning
ICT Literacy	Use appropriate tools strategically

The challenge of articulating the 4Cs in a standards document without confusing the order and sequence of rigorous, grade-appropriate math content knowledge is a significant one. The Common Core Standards for Mathematics is no exception in this regard.

Unlike the CCSS for ELA, the mathematics document does not use the mathematical practices as "anchor standards" or as an organizing structure for the document. The standards are organized around traditional conceptual categories in mathematics (such as Algebraic Thinking, Measurement and Data and Geometry). As a result, there is little explicit guidance in the document for where the specific connection points occur between the mathematical practices (and the 4Cs) and the math content standards.

These connection points do exist throughout the content standards, however, and though they may be largely inferred, they support the development of curriculum and instruction that enhance the 4Cs. For example, reasoning and "making sense" for understanding are consistently emphasized throughout the mathematics indicators. This is a strong connection point with reasoning and critical thinking skills.

As the standards document states, grade-level indicators that begin with the word "understand" are intended to be "good opportunities to connect the practices to content." This is a good way to begin thinking about the connections between P21 and the standards, along with the examples provided later in this document.



P21, CCSS and Curricula and Assessment Systems

The question of how best to integrate 21st Century Skills into core academic content in alignment with the CCSS inevitably leads to a conversation about curricula and assessment.

All P21 competencies—but especially Creativity, Life and Career Skills and 21st Century Themes such as global awareness—are aligned with the college and career ready goals of the CCSS. But these competencies are often implied in the CCSS, rather than explicitly stated.

Standards documents focus on expected outcomes; they are not ideally suited for addressing "how" students should develop competencies such as Creativity and Global Awareness. Learning environments that enable the full range of P21 skills are *guided* by standards, but they also require curricula and assessment systems that allow students to think creatively and to collaborate. As educators pursue CCSS alignment, then, it is crucial to design curricula and assessment systems that emphasize authentic real world problems, engage students in inquiry and exploration and provide opportunities for students to apply what they know in meaningful ways.

It is important to note the unique opportunity that the CCSS process is creating for all educators. Education leaders in almost every state and district are refining their expectations for student outcomes in the 21st century. New tools, resources and technologies devoted to college and career readiness are becoming widely and rapidly available. In many districts, curricula and assessments are being reviewed and revised to align with the CCSS. This period of review, refinement and in some cases redesign is an unprecedented moment for 21st century educators to capitalize upon.

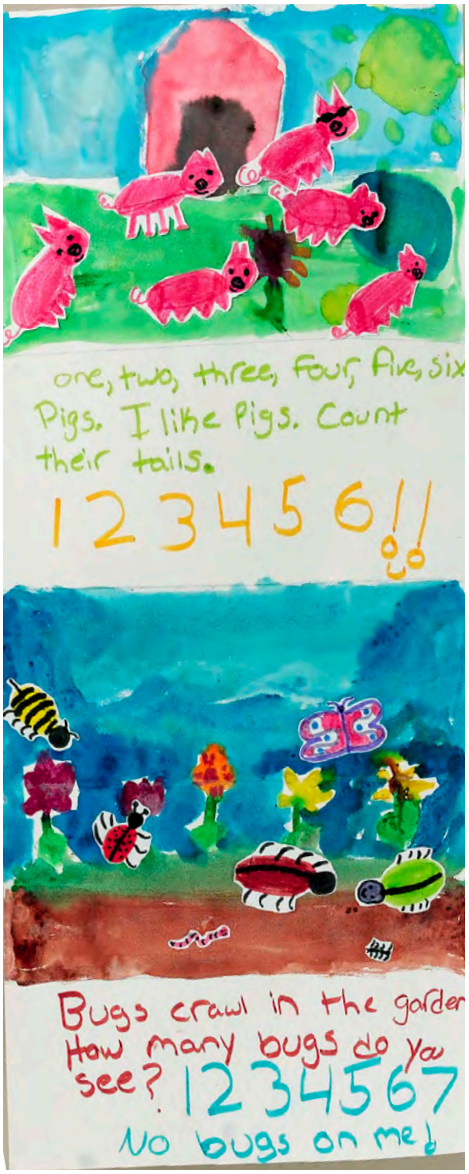
Now is a perfect time to integrate the P21 framework more intentionally into teaching and learning systems.

The following practices are suggested as educators work to align CCSS, the P21 Framework and core academic subjects in curricula and assessments:

- **Use backward-design principles** (such as *Understanding by Design*[1]) to design curriculum that encourages inquiry-based learning and enables embedded, performance-based assessments.
- **Develop interdisciplinary performance tasks** and/or project-based learning units that integrate the full P21 Framework in alignment with CCSS; consider capstone performances such as senior portfolios.
- **Create curricula-embedded assessments** to enable assessment as and for learning.
- **Collect and share exemplary student work** that demonstrates mastery of college and career ready knowledge and skills. Use these examples to improve professional understanding among educators of "how to identify 21st century knowledge and skills" in student work.
- **Provide meaningful opportunities for educators** to collaboratively review curricula, student work and student performance data, in order to refine the curricula and assessments over time.

In addition to considering the strategies above related to "how" the standards are taught, it is equally important for educators to specifically identify the knowledge and skills that are implied—but not explicitly stated—in the standards. Without direct emphasis and prioritization by state and district leaders, skills such as creativity and self-direction risk being overlooked in curricula and assessments.

The CCSS for English Language Arts and Mathematics provide ample opportunities to integrate the full range of P21 knowledge and skills, and we have highlighted such areas for consideration below. It is important to acknowledge here that Critical Thinking, Communication, Information Literacy, Media/Technology Literacy and Collaboration are not highlighted below because these competencies are explicitly covered in the CCSS.



[1] Wiggins, G. P., & McTighe, J. (2005). Understanding by design. Alexandria, VA: Association for Supervision and Curriculum Development

Creativity and Innovation

Creativity and innovation are considered by P21 to be some of the most important areas on which to focus CCSS work. In the 21st century, creativity and innovation skills are central components of college and career readiness.

ELA: Creative writing and expression are included in the Common Core ELA standards to some degree, most obviously in the items that refer to creative writing. P21 encourages all states and districts to strengthen the Common Core by emphasizing the grade-level indicators that call for creative expression in ELA, including creative writing and creating and delivering presentations. Creativity can also be incorporated as an element of almost any performance task related to ELA, and educators should consider how creativity will appear in curricula and performance-based measurements.

Mathematics: Creativity is not addressed explicitly in the mathematics practice and content standards. There are, however, areas where creativity is implied. This is most evident in (but is not limited to) measurement and data, algebraic thinking, geometry, statistics and probability and modeling. These connections are illustrated in the examples later in this document.

Life and Career Skills

Life and Career Skills such as Self-direction, Flexibility, Adaptability, Productivity and Responsibility are important competencies for all students today, and are readily incorporated into the CCSS in ELA and Mathematics.

ELA: The CCSS for ELA emphasize reading lengthy and complex texts (at age-appropriate levels), rigorous research and writing longer texts, all of which can support Self-direction and Productivity skills among students.

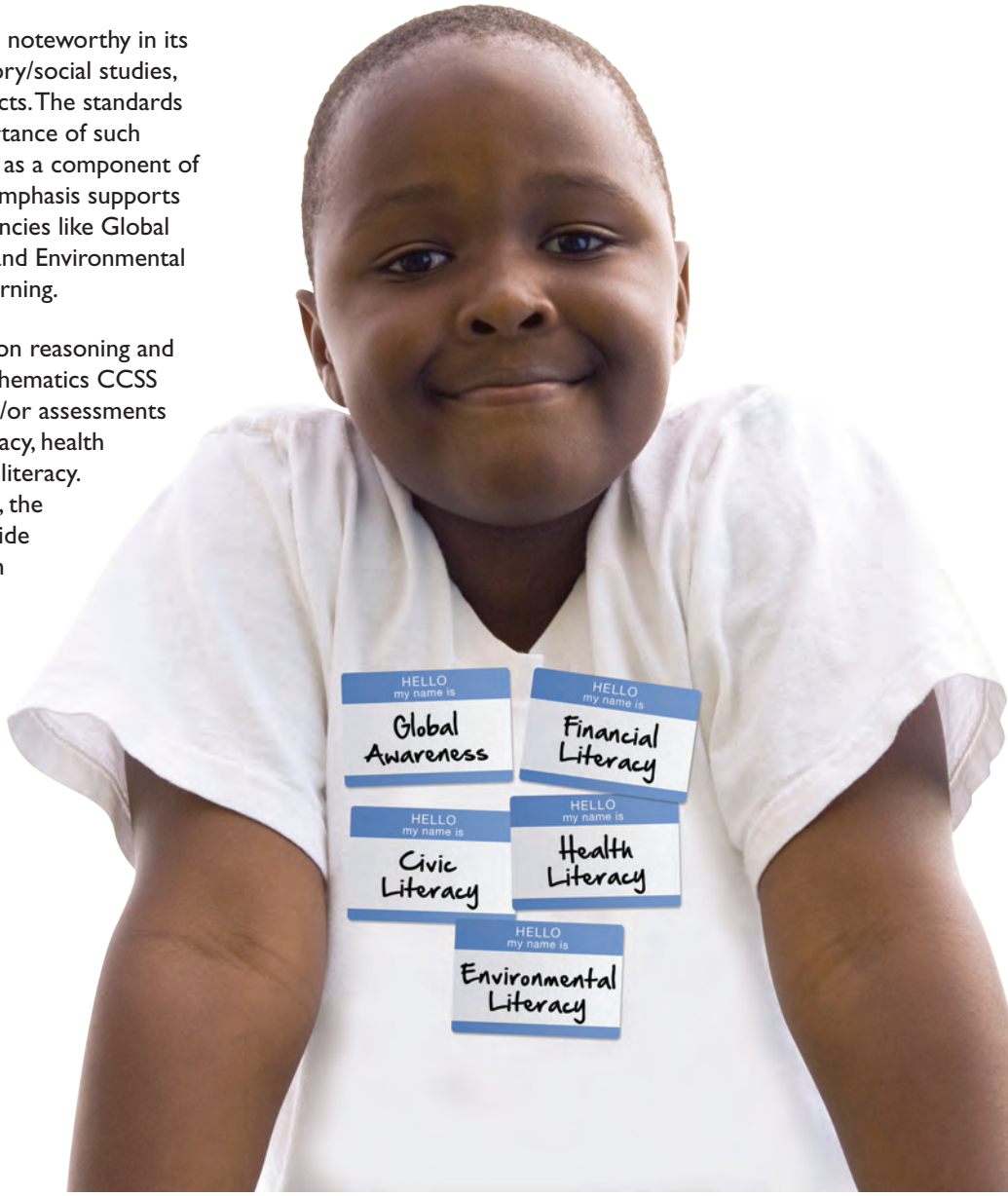
Mathematics: The mathematical practices standards call for perseverance in solving problems, which supports the development of self-direction and productivity. In modeling, statistics and probability, for example, students can work in collaborative, project-based units in ways that emphasize Life and Career Skills.

21st Century Themes

P21 encourages states to strengthen their adoptions of Common Core by explicitly integrating the following themes in curriculum, instruction and assessment: Global Awareness, Financial Literacy, Civic Literacy, Health Literacy and Environmental Literacy. These themes have become increasingly important in the 21st century as the complexities of personal finance, healthcare and global work teams are being faced by more and more young people.

ELA: The CCSS for ELA is noteworthy in its inclusion of literacy in history/social studies, science and technical subjects. The standards clearly articulate the importance of such cross-disciplinary literacies as a component of English language arts; this emphasis supports the integration of competencies like Global Awareness, Civic Literacy and Environmental Literacy in teaching and learning.

Mathematics: The focus on reasoning and problem-solving in the mathematics CCSS lends itself to curricula and/or assessments that integrate financial literacy, health literacy and environmental literacy. Particularly in mathematics, the 21st Century Themes provide a way to engage students in applying math knowledge in real world contexts.



CLASSROOM-FOCUSED EXAMPLES

English Language Arts

These vignettes help clarify "what it looks like" to create English language arts lessons that are aligned with the P21 Framework along with the common core.

HOW TO USE THE EXAMPLES:

- Many (though not all) of the examples below are derived from the 21st Century Skills Map in English, a collaborative project between the National Council of Teachers of English (NCTE) and P21. The student outcomes below have been chosen because they reflect the *P21 skill as defined in the P21 Framework – please see the appendix of this document.*
- These examples help demonstrate how educators can envision lessons that focus on 21st Century Skills and align with the CCSS. *These are not fully-designed lessons* and as such, should be viewed with an eye for how they can serve as starting places for curricula and lesson design/refinement.
- The CCSS standards and P21 Framework items listed with each example below should be viewed as "some of many" possible connection points. Depending on how each lesson is eventually refined and taught, the list of CCSS and P21 Framework elements should be adjusted according to best practices in lesson planning.

**See the CCSS Appendix A for its excellent guidance on text complexity and the importance of selecting appropriately complex texts.*

4th Grade – Sample ELA Lesson Starter 1

***Sample Student Outcome:* Students demonstrate understanding of a text or texts by working together to identify and ask significant questions to clarify various points of view.**

EXAMPLE: Students participate in literature circle discussions of a short story* they read and for which they prepare open-ended discussion questions. They use a voice recorder to record their discussion. They then listen to the recording, evaluating the effectiveness of points raised in response to the questions, insights shared, and balance of participation. The recording may be published as a podcast with accompanying reflections on the quality of the discussion.

COMMON CORE STANDARD	P21 SKILLS REPRESENTED
RL.4.1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. SL.4.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly. RL.4.10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.	• Critical Thinking • Collaboration • Communication • Information literacy • ICT literacy

Source: 21st Century Skills Map – English (www.p21.org)

4th Grade – Sample ELA Lesson Starter 2

***Sample Student Outcome:* Frame, analyze and synthesize information from a range of texts* in order to solve problems and answer questions.**

EXAMPLE: After reviewing profiles at an entrepreneurial microfinancing site such as www.kiva.org, students work in groups to research the economic and social impact of several proposals. Each group selects one proposal and creates a presentation to persuade classmates to choose that proposal. The class votes on the most persuasive proposal and creates an appropriate activity plan that might be used to raise the money to support the chosen proposal.

COMMON CORE STANDARD	P21 SKILLS REPRESENTED
RI.4.3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. W.4.9. Draw evidence from literary or informational texts to support analysis, reflection, and research. SL.4.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.	• Financial Literacy • Critical Thinking • Collaboration • Communication • Information Literacy • Creativity • Global Awareness

Source: 21st Century Skills Map – English (www.p21.org)

4th Grade – Sample ELA Lesson Starter 3

***Sample Student Outcome:* Develop, implement and communicate new ideas to others through original writing.**

EXAMPLE: Using an open-ended inspiration for writing such as Chris Van Allsburg's *Mysteries of Harris Burdick*, each student writes the beginning of a story and records it as a podcast. Students in other classes listen to the story, create the ensuing episodes, and record them as podcasts, until a final group writes and records the conclusions.

COMMON CORE STANDARD	P21 SKILLS REPRESENTED
W.4.3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. W.4.6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.	• Creativity • Collaboration • Communication • ICT Literacy

Source: 21st Century Skills Map – English (www.p21.org)

**See the CCSS Appendix A for its excellent guidance on text complexity and the importance of selecting appropriately complex texts.*

"The space cleaning rocket"

by Xiangmin P., 4th Grade

Veritas School of Music & Art, Los Angeles CA

"I want to make a space cleaning rocket which can make clean beautiful space."

8th Grade – Sample ELA Lesson Starter 1

***Sample Student Outcome:* Use information accurately and creatively for the issue or problem at hand.**

EXAMPLE: After completing a literature circle unit of teen problem novels, students brainstorm a list of significant social, emotional, or health issues teens face today. Working in groups, students research one issue and create a public service announcement on a closed YouTube channel (viewable only by students in the class) to persuade their peers about one action they should take regarding this issue. Students will select and use references from literary readings (e.g., citing how a particular novel presents the issue) as well as research from nonfiction sources to illustrate major points.

COMMON CORE STANDARD	P21 SKILLS REPRESENTED
RI.8.2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text. WHST.6-8.8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	• Information Literacy • Health Literacy • Media Literacy • ICT Literacy • Creativity • Critical Thinking • Collaboration • Communication

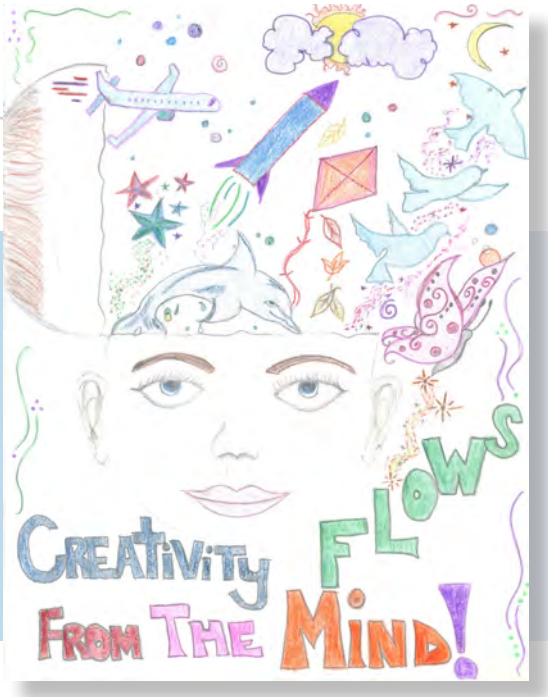
Source: 21st Century Skills Map – English (www.p21.org)

"Creativity Flows from the Mind"

by Tyler S., 8th Grade

McLoughlin Middle School, Vancouver, WA

"Artwork is only limited by what we perceive as real or fantasy."



8th Grade – Sample ELA Lesson Starter 2

***Sample Student Outcome:* Analyze, compare and contrast authors' and artists' motivations for creativity.**

EXAMPLE: In this unit, students step back and consider the motivations of authors and artists alike: What inspires artists? How is it similar and different from that which inspires authors? How is the process of creating a painting or sculpture similar to and different from the process of writing a story or poem? Students also read books written about artists, and study art that can be seen in museums across America. Students work with classmates to uncover the unspoken meanings behind words and artwork. In addition to fine art, students discuss illustrations and other forms of commercial art, looking for similarities to and differences from fine art, both in motivation and presentation styles. They write an informative/explanatory piece about an artist of interest. This unit ends with an open-ended reflective essay response to the essential question.

COMMON CORE STANDARD	P21 SKILLS REPRESENTED
W.8.2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. SL.8.2: Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.	• Critical Thinking • Creativity • Communication • Information Literacy

Source: Common Core Curriculum Maps (http://commoncore.org/free/index.php/maps/grade_8_unit_4/)

12th Grade – Sample ELA Lesson Starter 1

***Sample Student Outcome:* Students collaboratively write a proposal to help solve a community problem in innovative ways.**

EXAMPLE: After completing a literature unit on the American dream where students have read *The Great Gatsby*, *Death of a Salesman,* and *A Raisin in the Sun*, they explore what it means to have access to an American dream. Students are asked to create non-profit organizations that would help to meet the needs of their community by helping a group of people to meet their American dream without duplicating current services offered in the community. Students conceive of organizations, formulate extensive grant proposals that help them vie for funding from the fictitious Society for the American Dream, and finally compete against each other for funding of up to $500,000. Students pitch their ideas and advocate for funding to the grant panel, comprised not of teachers, but of community representatives.

COMMON CORE STANDARD	P21 SKILLS REPRESENTED
RL.11-12.9. Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics. SL.11-12.2. Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	• Civic Literacy • Critical Thinking • Collaboration • Communication • Creativity • Information Literacy

Source: Sarah Brown Wessling, National Teacher of the Year 2010-2011

12th Grade – Sample ELA Lesson Starter 2

***Sample Student Outcome:* Frame, analyze and synthesize information in order to solve problems and answer questions.**

EXAMPLE: In small groups, students conduct a technical needs analysis and create a plan for involving students in making technology decisions in the school. The process may include technical research, gathering student input from surveys, establishing a student advisory committee, using students to help provide tech support or other services to the school, evaluating cost/value ratios, and fundraising proposals to support their recommended strategies. These plans should be used in a presentation to the principal or the school board.

COMMON CORE STANDARD	P21 SKILLS REPRESENTED
SL.11-12.4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. RST.11-12.7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.	• Critical Thinking • Collaboration • Communication • ICT Literacy

Source: 21st Century Skills Map – English (www.p21.org)

12th Grade – Sample ELA Lesson Starter 3

***Sample Student Outcome:* Demonstrate ability to work effectively with diverse teams.**

EXAMPLE: Students collaborate with senior citizens in a digital storytelling workshop. The teams bring to life a story from a senior's history as they collaborate on writing and creating the video. Students will conduct interviews, perform research using nonfiction texts, write and record the script, and select images and music. The finished videos are presented in a school film festival. Each team designs criteria for evaluating their video in advance, and grades their work accordingly. Students demonstrate the ability to work effectively with diverse teams.

COMMON CORE STANDARD	P21 SKILLS REPRESENTED
RH.11-12.2. Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas. W.11-12.8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. SL.11-12.5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	• Collaboration • Critical Thinking • Communication • Media Literacy • Self-Direction • Creativity

Source: 21st Century Skills Map – English (www.p21.org)

**See the CCSS Appendix A for its excellent guidance on text complexity and the importance of selecting appropriately complex texts.*

CLASSROOM-FOCUSED EXAMPLES

Mathematics

These lesson abstracts help clarify "what it looks like" to create mathematics lessons that are aligned with the P21 framework along with the common core.

HOW TO USE THE EXAMPLES:

- These examples help demonstrate how educators can envision lessons that focus on 21st century skills and align with the CCSS. *These are not fully-designed lessons* and as such, should be viewed with an eye for how they can serve as starting places for curricula and lesson design/refinement.
- The CCSS standards and P21 framework items listed with each example below should be viewed as "some of many" possible connection points. Depending on how each lesson is eventually refined and taught, the list of CCSS and P21 framework elements should be adjusted according to best practices in lesson planning.

4th Grade – Sample Math Lesson Starter 1

***Sample Student Outcome:* Students work collaboratively to "map" a box city using number sense, measurement, scale and geometry.**

EXAMPLE: As preparation, students are introduced to the concepts of mapping, the utility of gridding and compass directions. Students then create an original box city and work together to overlay it with a string grid. Each student draws the elements of his/her grid (e.g. a building or park) on a paper square, representing each item at the appropriate scale. Students then reassemble all the grid squares into a "citywide grid" for display. Location games can then be played as a culminating activity, where students move each other through the city using coordinate directions. Students may also discuss and analyze potential effects on citizens of their "urban planning" decisions.

MATH CONTENT STANDARD

4.MD.1. Know relative sizes of measurement units within one system of units including: km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.

Geometric measurement:

4.G.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

MATHEMATIC PRACTICE

- Make sense of problems and persevere in solving them
- Model with mathematics
- Attend to precision
- Look for and make use of structure

P21 SKILLS

- Civic Literacy
- Collaboration
- Communication
- Critical Thinking
- Creativity

Source: Center for Understanding the Built Environment (CUBE) "Grid It Map It" http://www.cubekc.org/architivities/gridit_mapit.html

4th Grade – Sample Math Lesson Starter 2

***Sample Student Outcome:* Students use math content knowledge to understand basic concepts of financial literacy.**

EXAMPLE: Students compare and contrast the same balance in different types of bank accounts to determine which is better for what circumstances (e.g., is a savings account than a checking account?) Students determine the difference that interest rates make in each account (compound vs. simple interest), compare short and long term costs of borrowing money. Students use mathematical arguments to answer classic questions like, "Which is more: one million dollars, or one penny the first day, double that penny the next day, then double the previous day's pennies and so on for a month?" (Dr. Math, 2006)

MATH CONTENT STANDARD

4.OA.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

MATHEMATIC PRACTICE

- Make sense of problems and persevere in solving them
- Construct viable arguments and critique the reasoning of others
- Attend to precision

P21 SKILLS

- Critical Thinking
- Problem Solving
- Financial Literacy
- Communication
- Creativity

Source: Science Buddies http://bit.ly/jcymwR

4th Grade – Sample Math Lesson Starter 3

***Sample Student Outcome:* Participants examine common games such as board and card games, and discuss the mathematical thinking that is involved.**

EXAMPLE: Students play common logic and chance games and analyze the mathematical understandings that are developed while playing these games. Participants play the games in small groups and consider how math influences the outcomes within the game. Students then experiment, making adaptations in the games in order to influence the games' outcomes.

MATH CONTENT STANDARD

4.OA.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

4.OA.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

4.MD.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

MATHEMATIC PRACTICE

- Reason abstractly and quantitatively
- Make sense of problems and persevere in solving them
- Construct viable arguments and critique the reasoning of others
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

P21 SKILLS

- Critical Thinking
- Problem Solving
- Communication
- Creativity and Innovation

Source: COMAP - http://www.comap.com/elementary/projects/bridges/BrSampler.pdf

8th Grade – Sample Math Lesson Starter 1

***Sample Student Outcome:* Students work in teams to solve mathematical problems; they listen to the reasoning of others and offer correction with supporting arguments; they modify their own arguments when corrected; they learn from mistakes and make repeated attempts at solving problems creatively.**

EXAMPLE: Students experiment with rotations, reflections, and translations of a given triangle, using geometry software or patty paper to form a tesselation of the plane. They explain why this works for any given triangle by reasoning about the relationship between angles formed by a transversal to two parallel lines. They see the connection between this discovery and the fact that the sum of angles in a triangle is a straight angle.

MATH CONTENT STANDARD

8.G.1. Verify experimentally the properties of rotations, reflections, and translations.

8.G.5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.

P21 SKILLS

- Critical Thinking
- Problem Solving
- Communication
- Creativity and Innovation
- ICT Literacy

Source: 21st Century Skills Map – Math (forthcoming from www.p21.org)

MATHEMATIC PRACTICE

- Reason abstractly and quantitatively
- Make sense of problems and persevere in solving them
- Construct viable arguments and critique the reasoning of others
- Attend to precision
- Look for and express regularity in repeated reasoning

8th Grade – Sample Math Lesson Starter 2

***Sample Student Outcome:* Students use algebraic thinking, statistics, critical thinking and problem solving skills to compare and contrast outcomes in a sports game.**

EXAMPLE: Students assemble fantasy sports teams and track their progress against other teams using a customized point system using non-algebraic and algebraic methods. Students follow their players on television, in newspapers, or online. They document, analyze and report on player statistics.

MATH CONTENT STANDARD

N-Q.1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

F-LE.2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

8.SP.4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.

MATHEMATIC PRACTICE

- Reason abstractly and quantitatively
- Make sense of problems and persevere in solving them
- Construct viable arguments and critique the reasoning of others
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

P21 SKILLS

- Critical Thinking
- Problem Solving
- Communication
- Creativity and Innovation

Source: http://fantasysportsmath.com/pdf/SampleProblems021308.pdf

http://www.fantasysportsmath.com/pdf/NCTM_Standards.pdf

12th Grade – Sample Math Lesson Starter 1

***Sample Student Outcome:* Students work in teams to solve mathematical problems; they listen to the reasoning of others and offer correction with supporting arguments; they modify their own arguments when corrected; they learn from mistakes and make repeated attempts at solving problems.**

EXAMPLE: Students form teams to compete in modeling competitions such as the Mathematical Competition in Modeling run each year by COMAP. For example, the following problem is from the 2009 competition:

Many cities and communities have traffic circles – from large ones with many lanes in the circle (such as at the Arc de Triomphe in Paris and the Victory Monument in Bangkok) to small ones with one or two lanes in the circle. Some of these traffic circles position a stop sign or a yield sign on every incoming road that gives priority to traffic already in the circle; some position a yield sign in the circle at each incoming road to give priority to incoming traffic; and some position a traffic light on each incoming road (with no right turn allowed on a red light). Other designs may also be possible.

Student teams use a model to determine how best to control traffic flow in, around, and out of a circle. They state clearly the objective(s) they use in their model for making the optimal choice as well as the factors that affect this choice. . . . Teams summarize the conditions under which each type of traffic-control method should be used. When traffic lights are recommended, they explain a method for determining how many seconds each light should remain green (which may vary according to the time of day and other factors). Each team illustrates how their model works with specific examples.

MATH CONTENT STANDARD

N-Q.1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

N-Q.2. Define appropriate quantities for the purpose of descriptive modeling.

S-IC.3. Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

S-IC.5. Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.

MATHEMATIC PRACTICE

- Reason abstractly and quantitatively
- Make sense of problems and persevere in solving them
- Construct viable arguments and critique the reasoning of others
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

P21 SKILLS

- Critical Thinking
- Problem Solving
- Collaboration
- Communication
- Creativity and Innovation

Source: COMAP, as cited in 21st Century Skills Map – Math (forthcoming from www.p21.org)

12th Grade – Sample Math Lesson Starter 2

Sample Student Outcome: **Students use creativity and innovation to compare, contrast and create algorithms to solve complex puzzles.**

EXAMPLE: Devising Algorithm for Solving a Rubic's Cube – students explore devise an algorithm for solving Rubik's cube, using three sets of moves that each accomplish a specific function.

1. Figure out a logical sequence for applying these three sets of moves in order to solve the cube systematically. In other words, use the three sets of moves as the basis for developing an algorithm to solve Rubik's cube.

a. During this step, it is important to determine whether the three move sequences presented in the Introduction are *sufficient* to solve the cube. In other words, is it possible to solve the cube with only these three move sequences, or do you need additional move sequences?

b. If you determine that additional move sequences are needed, be prepared to show why they are needed. Develop one or more move sequences to fill in the missing rearrangements needed to solve the cube.

2. Once you have developed your algorithm, time yourself for 10 or more trials and see how long it takes you, on average, to solve the puzzle. The cube should be well randomized for each trial.

3. If you could solve the puzzle before you started the project, did your average solution time improve?

MATH CONTENT STANDARD	MATHEMATIC PRACTICE	P21 SKILLS
Depending on how this lesson is developed and taught, it can be aligned with any or all of the following math standards: • Algebra • Functions • Modeling • Statistics and Probability	• Reason abstractly and quantitatively • Make sense of problems and persevere in solving them • Construct viable arguments and critique the reasoning of others • Look for and make use of structure	• Critical Thinking • Problem Solving • Communication • Creativity and Innovation

Source: http://www.sciencebuddies.org/mentoring/project_ideas/Math_p025.shtml

12th Grade – Sample Math Lesson Starter 3

***Sample Student Outcome:* Students use statistics and probability knowledge, as well as critical thinking skills, to solve problems.**

EXAMPLE: Stocking a Fish Pond – Copyright COMAP

Students develop understanding of basic measurements in order to describe populations and populated communities. Among these are population density, abundance of particular species, distribution of species, population size, and population age structures. Students model methods used by ecologists as well as environmental scientists (e.g., looking at a small portion of the population and make inferences about the whole, or comparing data taken after an environmental impact.) Students discuss the pros and cons of techniques for population estimation, understanding that no solution is foolproof.

MATH CONTENT STANDARD

Depending on how this lesson is developed, it can be aligned with various standards, such as:

F-LE.1. Distinguish between situations that can be modeled with linear functions and with exponential functions.

S-CP.5. Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.

P21 SKILLS

- Environmental Literacy
- Critical Thinking
- Problem Solving
- Communication
- Creativity and Innovation

Source: COMAP http://bit.ly/mTUTIt

MATHEMATIC PRACTICE

- Reason abstractly and quantitatively
- Make sense of problems and persevere in solving them
- Construct viable arguments and critique the reasoning of others
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

Common Core Implementation Resources

The resources below provide further guidance around the Common Core State Standards and their integration into teaching and learning systems.

GENERAL

American Association of School Librarians (AASL) Common Core Crosswalk*

http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/commoncorecrosswalk/index.cfm

American Association of School Librarians (AASL) Lesson Plan Database*

http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/lessonplandatabase/lessonplandb.cfm

http://aasl.jesandco.org/

Common Core Website (CCSS)

http://www.corestandards.org/

Houghton Mifflin*

http://hmheducation.com/commoncore/index.php

McGraw Hill*

http://www.commoncoresolutions.com/resources.php]

Pearson*

http://commoncore.pearsoned.com/index.cfm?locator=PS11T9

Partnership for 21st Century Skills Maps*

http://www.p21.org/index.php?option=com_content&task=view&id=504&Itemid=185#maps

Scholastic

http://teacher.scholastic.com/products/common-core-state-standards.htm

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MATHEMATICS

The Consortium for Mathematics and Its Applications (COMAP)

http://www.comap.com/

COMAP Conference Summary - Moving Forward Together: Curriculum & Assessment and the Common Core State Standards for Mathematics

http://www.mathismore.net/resources/MovingForward/index.html

Maine CCSS Math Professional Development*

http://www.maine.gov/education/lres/math/ccss_pd.html

NCTM Common Core Implementation Resources

http://www.nctm.org/news/highlights.aspx?id=26084&blogid=6806

Wireless Generation Math Learning Trajectory Posters

To support the implementation of standards in classrooms, mathematics education experts Drs. Jere Confrey, Alan Maloney and Kenny Nguyen created Learning Trajectory posters to help K-12 educators easily:

- Familiarize themselves with the new Common Core Mathematics Standards
- View at a glance what they are responsible for teaching over the course of the school year

http://www.wirelessgeneration.com/posters?gclid=CP3c2_nGgakCFUgbQgodZFIQTA

ENGLISH LANGUAGE ARTS

Common Core Curriculum Map Project

Common Core's Curriculum Maps in English Language Arts translate the new Common Core State Standards for Kindergarten through 12th grade into unit maps that teachers can use to plan their year, craft their own more detailed curriculum, and create lesson plans. They were written by public school teachers for public school teachers and are available free of charge to anyone who would like to use them.

http://www.commoncore.org/

NCTE Common Core Implementation Resources

http://www.ncte.org/commoncore

http://ncte2008.ning.com/forum/topics/k12-common-core-standards

National Writing Project Resources (NWP) Resources

NWP project to develop common core writing curriculum.

http://www.nwp.org/cs/public/print/resource/3337

International Reading Association

http://www.reading.org/resources/ResourcesByTopic/CommonCore-resourcetype/CommonCore-rt-resources.aspx

ASSESSMENT RESOURCES

As with any work related to standards, the question of assessment remains central. Following are some resources that may be helpful in your implementation efforts.

Assessing What Matters

This article by Robert J. Sternberg was published in Education Leadership in December 2007. It is an excellent overview of what traditional measures can miss when it comes to 21st century outcomes for students.

http://www.learnersedgeinc.com/file/728-4.pdf

Assessment: A 21st Century Skills Implementation Guide

Partnership for 21st Century Skills*

This guide articulates some key steps education leaders should consider when implementing assessment of 21st century skills.

http://p21.org/documents/p21-stateimp_assessment.pdf

Be Clear About the Heavy Lifting Ahead for New Assessments

Bill Tucker Blog

"If we really want to make assessment better — and our accountability systems, use of data, effectiveness evaluations, etc. all hang on assessment — then it's going to take much more than this one federal grant."

http://www.quickanded.com/2010/09/be-clear-about-the-heavy-lifting-ahead-for-new-assessments.html

Pearson – Thoughts on an Assessment of Common Core Standards*

http://www.pearsonassessments.com/NR/rdonlyres/6063DE04-2372-4EC4-9642-7B8A584F942F/0/ThoughtonaCommonCoreAssessmentSystem.pdf

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Exploring the Intersection of Science Education and 21st Century Skills: A Workshop Summary

Margaret Hilton

Exploring the Intersection of Science Education and 21st Century Skills addresses key questions about the overlap between 21st century skills and scientific content and knowledge; explores promising models or approaches for teaching these abilities; and reviews the evidence about the transferability of these skills to real workplace applications.

http://www.nap.edu/catalog/12771.html

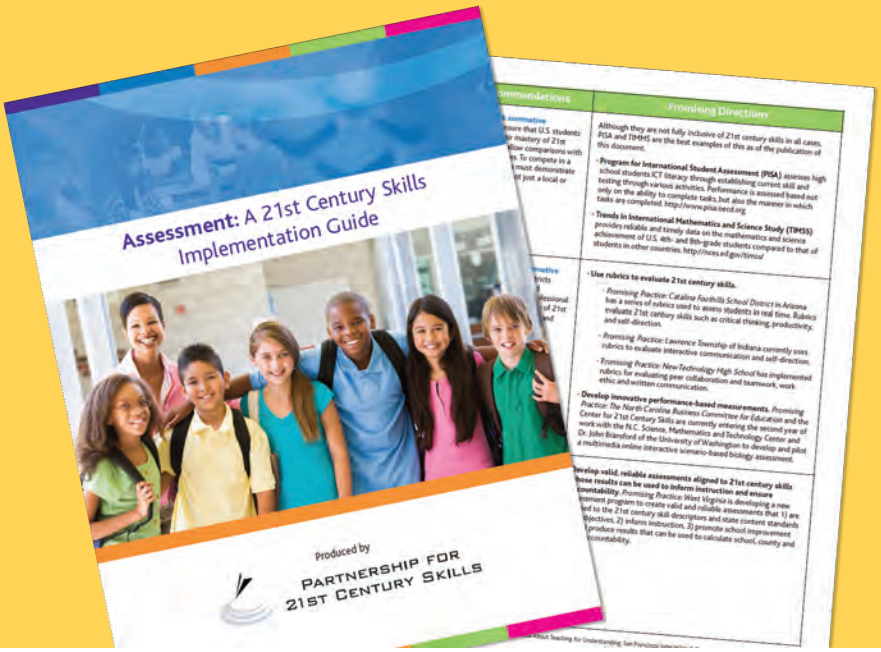
http://www.ncbi.nlm.nih.gov/books/NBK32678/

EdSector Policy Papers on Assessment in the 21st Century

- Beyond the Bubble: Technology and the Future of Student Assessment - Bill Tucker - In a new Education Sector report, Managing Director Bill Tucker argues that technology has the potential to drastically improve our current assessment systems and practices, leading to significant improvements in teaching and learning in the nation's classrooms.

- Measuring Skills for the 21st Century – Elena Silva - Leaders in government, business, and higher education are calling for today's students to show a mastery of broader and more sophisticated skills like evaluating and analyzing information and thinking creatively about how to solve real-world problems. But standing in the way of incorporating such skills into teaching and learning are widespread concerns about measurement. In this report, Senior Policy Analyst Elena Silva examines new models of assessment that illustrate that the skills that really matter for the 21st century can be measured accurately and in a common and comparable way.

www.edsector.org



Appendix

P21 Framework Definitions

To help practitioners integrate skills into the teaching of core academic subjects, the Partnership has developed a unified, collective vision for learning known as the Framework for 21st Century Learning.

This Framework describes the skills, knowledge and expertise students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise and literacies.

Every 21st Century Skills implementation requires the development of core academic subject knowledge and understanding among all students. Those who can think critically and communicate effectively must build on a base of core academic subject knowledge.

Within the context of core knowledge instruction, students must also learn the essential skills for success in today's world, such as critical thinking, problem solving, communication and collaboration.

When a school or district builds on this foundation, combining the entire Framework with the necessary support systems—standards, assessments, curriculum and instruction, professional development and learning environments—students are more engaged in the learning process and graduate better prepared to thrive in today's global economy.

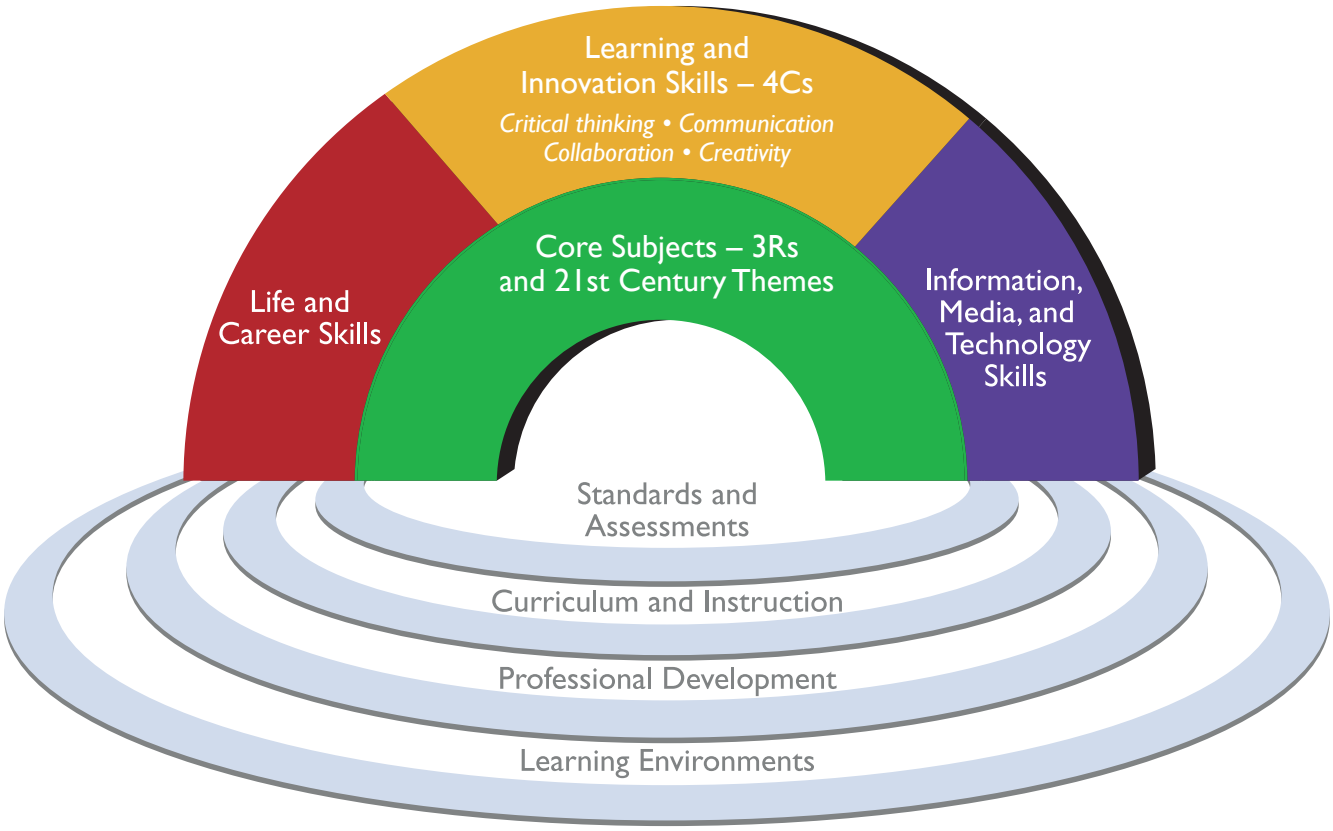
While the graphic represents each element distinctly for descriptive purposes, the Partnership views all the components as fully interconnected in the process of 21st century teaching and learning.

"My Dream"

by Dayvie C., 1st Grade

Lincoln Elementary School, Faribault, MN

"If you could see inside my head, you would actually see a lot of buildings with drawings and words. I can draw what is in my head, so you can see it."



21st Century Student Outcomes

The elements described in this section as "21st century student outcomes" (represented by the rainbow) are the knowledge, skills and expertise students should master to succeed in work and life in the 21st century.

Core Subjects and 21st Century Themes

Mastery of core subjects and 21st century themes is essential for all students in the 21st century. Core subjects include:

- English, Reading or Language Arts
- World languages
- Arts
- Mathematics
- Economics
- Science
- Geography
- History
- Government and Civics

In addition to these subjects, we believe schools must move to include not only a focus on mastery of core subjects, but also promote understanding of academic content at much higher levels by weaving 21st century interdisciplinary themes into core subjects:

Global Awareness

- Using 21st Century Skills to understand and address global issues
- Learning from and working collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work and community contexts
- Understanding other nations and cultures, including the use of non-English languages

Financial, Economic, Business and Entrepreneurial Literacy

- Knowing how to make appropriate personal economic choices
- Understanding the role of the economy in society
- Using entrepreneurial skills to enhance workplace productivity and career options

Civic Literacy

- Participating effectively in civic life through knowing how to stay informed and understanding governmental processes
- Exercising the rights and obligations of citizenship at local, state, national and global levels
- Understanding the local and global implications of civic decisions

Health Literacy

- Obtaining, interpreting and understanding basic health information and services and using such information and services in ways that enhance health
- Understanding preventive physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance and stress reduction
- Using available information to make appropriate health-related decisions
- Establishing and monitoring personal and family health goals
- Understanding national and international public health and safety issues

Environmental Literacy

- Demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water and ecosystems
- Demonstrate knowledge and understanding of society's impact on the natural world (e.g., population growth, population development, resource consumption rate, etc.)
- Investigate and analyze environmental issues, and make accurate conclusions about effective solutions
- Take individual and collective action towards addressing environmental challenges (e.g., participating in global actions, designing solutions that inspire action on environmental issues)

Learning and Innovation Skills

Learning and Innovation Skills increasingly are being recognized as those that separate students who are prepared for a more and more complex life and work environments in the 21st century, and those who are not. A focus on Creativity, Critical Thinking, Communication and Collaboration is essential to prepare students for the future.

CREATIVITY AND INNOVATION

Think Creatively

- Use a wide range of idea creation techniques (such as brainstorming)
- Create new and worthwhile ideas (both incremental and radical concepts)
- Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts

Work Creatively with Others

- Respect and utilize creative contributions of others
- In creating together, determine a process for compromise, consensus building and decision making
- Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work
- Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas
- View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes

Implement Innovations

- Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur

CRITICAL THINKING AND PROBLEM SOLVING

Reason Effectively

- Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation

Use Systems Thinking

- Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems

Make Judgments and Decisions

- Effectively analyze and evaluate evidence, arguments, claims and beliefs
- Analyze and evaluate major alternative points of view
- Synthesize and make connections between information and arguments
- Interpret information and draw conclusions based on the best analysis
- Reflect critically on learning experiences and processes

Solve Problems

- Solve different kinds of non-familiar problems in both conventional and innovative ways
- Identify and ask significant questions that clarify various points of view and lead to better solutions

COMMUNICATION AND COLLABORATION

Communicate Clearly

- Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts
- Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions
- Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade)
- Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact
- Communicate effectively in diverse environments (including multi-lingual)

Collaborate with Others

- Demonstrate ability to work effectively and respectfully with diverse teams
- Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
- Assume shared responsibility for collaborative work, and value the individual contributions made by each team member

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

People in the 21st century live in a technology and media-suffused environment, marked by various characteristics, including: 1) access to an abundance of information, 2) rapid changes in technology tools, and 3) the ability to collaborate and make individual contributions on an unprecedented scale. To be effective in the 21st century, citizens and workers must be able to exhibit a range of functional and critical thinking skills related to information, media and technology.

INFORMATION LITERACY

Access and Evaluate Information

- Access information efficiently (time) and effectively (sources)
- Evaluate information critically and competently

Use and Manage Information

- Use information accurately and creatively for the issue or problem at hand
- Manage the flow of information from a wide variety of sources
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information

MEDIA LITERACY

Analyze Media

- Understand both how and why media messages are constructed, and for what purposes
- Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media

Create Media Products

- Understand and utilize the most appropriate media creation tools, characteristics and conventions
- Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments

ICT (INFORMATION, COMMUNICATIONS AND TECHNOLOGY) LITERACY

Apply Technology Effectively

- Use technology as a tool to research, organize, evaluate and communicate information
- Use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies

LIFE AND CAREER SKILLS

Today's life and work environments require far more than thinking skills and content knowledge. The ability to navigate the complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate life and career skills.

FLEXIBILITY AND ADAPTABILITY

Adapt to Change

- Adapt to varied roles, jobs responsibilities, schedules and contexts
- Work effectively in a climate of ambiguity and changing priorities

Be Flexible

- Incorporate feedback effectively
- Deal positively with praise, setbacks and criticism
- Understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments

INITIATIVE AND SELF-DIRECTION

Manage Goals and Time

- Set goals with tangible and intangible success criteria
- Balance tactical (short-term) and strategic (long-term) goals
- Utilize time and manage workload efficiently

Work Independently

- Monitor, define, prioritize and complete tasks without direct oversight

Be Self-directed Learners

- Go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise
- Demonstrate initiative to advance skill levels towards a professional level
- Demonstrate commitment to learning as a lifelong process
- Reflect critically on past experiences in order to inform future progress

SOCIAL AND CROSS-CULTURAL SKILLS

Interact Effectively with Others

- Know when it is appropriate to listen and when to speak
- Conduct themselves in a respectable, professional manner

Work Effectively in Diverse Teams

- Respect cultural differences and work effectively with people from a range of social and cultural backgrounds
- Respond open-mindedly to different ideas and values
- Leverage social and cultural differences to create new ideas and increase both innovation and quality of work

PRODUCTIVITY AND ACCOUNTABILITY

Manage Projects

- Set and meet goals, even in the face of obstacles and competing pressures
- Prioritize, plan and manage work to achieve the intended result

Produce Results

- Demonstrate additional attributes associated with producing high quality products including the abilities to:
- Work positively and ethically
- Manage time and projects effectively
- Multi-task
- Participate actively, as well as be reliable and punctual
- Present oneself professionally and with proper etiquette
- Collaborate and cooperate effectively with teams
- Respect and appreciate team diversity
- Be accountable for results

LEADERSHIP AND RESPONSIBILITY

Guide and Lead Others

- Use interpersonal and problem-solving skills to influence and guide others toward a goal
- Leverage strengths of others to accomplish a common goal
- Inspire others to reach their very best via example and selflessness
- Demonstrate integrity and ethical behavior in using influence and power

Be Responsible to Others

- Act responsibly with the interests of the larger community in mind

21st Century Support Systems

The elements described below are the critical systems necessary to ensure student mastery of 21st Century Skills. 21st century standards, assessments, curriculum, instruction, professional development and learning environments must be aligned to produce a support system that produces 21st century outcomes for today's students.

21st Century Standards

- Focus on 21st Century Skills, content knowledge and expertise
- Build understanding across and among core subjects as well as 21st century interdisciplinary themes
- Emphasize deep understanding rather than shallow knowledge
- Engage students with the real world data, tools and experts they will encounter in college, on the job, and in life; students learn best when actively engaged in solving meaningful problems
- Allow for multiple measures of mastery

Assessment of 21st Century Skills

- Supports a balance of assessments, including high-quality standardized testing along with effective formative and summative classroom assessments
- Emphasizes useful feedback on student performance that is embedded into everyday learning
- Requires a balance of technology-enhanced, formative and summative assessments that measure student mastery of 21st Century Skills
- Enables development of portfolios of student work that demonstrate mastery of 21st Century Skills to educators and prospective employers
- Enables a balanced portfolio of measures to assess the educational system's effectiveness in reaching high levels of student competency in 21st Century Skills

21st Century Curriculum and Instruction

- Teaches 21st century skills discretely in the context of core subjects and 21st century interdisciplinary themes
- Focuses on providing opportunities for applying 21st Century Skills across content areas and for a competency-based approach to learning
- Enables innovative learning methods that integrate the use of supportive technologies, inquiry- and problem-based approaches and higher order thinking skills
- Encourages the integration of community resources beyond school walls

21st Century Professional Development

- Highlights ways educators can seize opportunities for integrating 21st Century Skills, tools and teaching strategies into their instructional practices — and help them identify what activities they can replace/de-emphasize
- Balances direct instruction with project-oriented teaching methods
- Illustrates how a deeper understanding of subject matter can actually enhance problem-solving, critical thinking, and other 21st Century Skills
- Enables 21st century professional learning communities for teachers that model the kinds of classroom learning that best promotes 21st Century Skills for students
- Cultivates teachers' ability to identify students' particular learning styles, intelligences, strengths and weaknesses
- Helps teachers develop their abilities to use various strategies (such as formative assessments) to reach diverse students and create environments that support differentiated teaching and learning
- Supports the continuous evaluation of students' 21st Century Skills development
- Encourages knowledge sharing among communities of practitioners, using face-to-face, virtual and blended communications
- Uses a scalable and sustainable model of professional development

21st Century Learning Environments

- Create learning practices, human support and physical environments that will support the teaching and learning of 21st century skill outcomes
- Support professional learning communities that enable educators to collaborate, share best practices and integrate 21st Century Skills into classroom practice
- Enable students to learn in relevant, real world 21st century contexts (e.g., through project-based or other applied work)
- Allow equitable access to quality learning tools, technologies and resources
- Provide 21st century architectural and interior designs for group, team and individual learning
- Support expanded community and international involvement in learning, both face-to-face and online

About the Partnership for 21st Century Skills

The Partnership for 21st Century Skills is a national organization that advocates for the integration of skills such as critical thinking, problem solving and communication into the teaching of core academic subjects such as English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics.

The Partnership and our member organizations provide tools and resources that help facilitate and drive this necessary change.

Learn more and get involved at http://www.P21.org.

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