
TECHNOLOGY INTEGRATION STANDARDS REVISED

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This revised draft reflects the consensus decisions of the Computer Science, Library Media/Information Literacy, and Technology Integration Negotiated Rulemaking Committee, held on January 10, 2020.

The committee will meet again on February 12, 2020 to complete its review of the ninth-twelfth grade standards proposal and program delivery standards recommendations.

Please visit the [OPI K-12 Content Standards and Revision webpage](#) for meeting agenda, minutes, video recording, and other meeting materials.

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- 1 TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR GRADES K-12
- 2 1. The content areas covered by the technology integration standards include skills for:
- 3 a. empowered learners
- 4 b. digital citizens
- 5 c. knowledge constructors
- 6 d. innovative designers
- 7 e. computational thinkers
- 8 f. creative communicators
- 9 g. global collaborators
- 10 h. reflective users

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- 1 TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR KINDERGARTEN
- 2 1. The empowered learner content standards for kindergarten are that each student will:
- 3 a. identify a variety of technologies that will help them in their learning
- 4 2. The digital citizen content standards for kindergarten are that each student will:
- 5 a. practice appropriate use of devices
- 6 b. share information and respect the work of others
- 7 c. recognize the importance of keeping personal information private
- 8 3. The innovative designer content standards for kindergarten are that each student will:
- 9 a. use a design process with digital and non-digital tools
- 10 4. The computational thinker content standards for kindergarten are that each student will:
- 11 a. identify how technology is used to make a task easier

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1 **TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR FIRST GRADE**

- 2 1. The empowered learner content standards for first grade are that each student will:
- 3 a. identify a variety of technologies that will help them in their learning
- 4 2. The digital citizen content standards for first grade are that each student will:
- 5 a. practice responsible use of technology
- 6 b. practice appropriate use of devices
- 7 c. share information and respect the work of others
- 8 d. recognize the importance of keeping personal information private and how to be
- 9 safe online
- 10 3. The innovative designer content standards for first grade are that each student will:
- 11 a. use a design process to develop ideas or creations
- 12 b. use digital and non-digital tools to design a product
- 13 4. The computational thinker content standards for first grade are that each student will:
- 14 a. break down a problem into parts and identify ways to solve the problem

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1 TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR SECOND GRADE

- 2 1. The empowered learner content standards for second grade are that each student will:
 - 3 a. identify a variety of technologies that will help them in their learning
- 4 2. The digital citizen content standards for second grade are that each student will:
 - 5 a. practice responsible use of technology
 - 6 b. practice appropriate use of devices
 - 7 c. identify ownership of information and acknowledge the work of others
 - 8 d. explain the importance of keeping personal information private and how to be
 - 9 safe online
- 10 3. The knowledge constructor content standards for second grade are that each student
- 11 will:
 - 12 a. identify a variety of tools to organize information
- 13 4. The innovative designer technology content standards for second grade are that each
- 14 student will:
 - 15 a. use a design process to develop ideas or creations
 - 16 b. use digital and non-digital tools to design a product
- 17 5. The computational thinker content standards for second grade are that each student will:
 - 18 a. break down a problem into parts and identify ways to solve the problem
 - 19 b. explain how technology can make a task easier
- 20 6. The creative communicator content standards for second grade are that each student
- 21 will:
 - 22 a. use tools to create something that communicates an idea to others

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1 TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR THIRD GRADE

- 2 1. The empowered learner content standards for third grade are that each student will:
 - 3 a. set personal learning goals and use appropriate tools to set and support a
 - 4 personal learning goal
 - 5 b. recognize how skills can be transferred between tools
- 6 2. The digital citizen content standards for third grade are that each student will:
 - 7 a. practice responsible use of technology
 - 8 b. demonstrate appropriate use of devices
 - 9 c. demonstrate how to be safe online
 - 10 d. demonstrate ownership of information and acknowledge the work of others
 - 11 e. recognize the importance of keeping personal information private
- 12 3. The knowledge constructor content standards for third grade are that each student will:
 - 13 a. identify digital tools and resources to find information on topics of interest
 - 14 b. explore the accuracy, credibility, and relevance of sources
 - 15 c. use a variety of tools to organize information
- 16 4. The innovative designer content standards for third grade are that each student will:
 - 17 a. define questions, find solutions, test ideas to solve problems and share their
 - 18 learning
 - 19 b. use digital and non-digital tools to design a product with a step-by-step design
 - 20 process
- 21 5. The computational thinker content standards for third grade are that each student will:
 - 22 a. define a problem and select appropriate technology tools to explore and find
 - 23 solutions
 - 24 b. identify patterns and categories in a data set
 - 25 c. break down problems into smaller parts, identify key information, and propose
 - 26 solutions
 - 27 d. evaluate how technology is used to make a task easier or repeatable
- 28 6. The creative communicator content standards for third grade are that each student will:
 - 29 a. use strategies for remixing or repurposing resources to create new works
 - 30 b. create digital objects to communicate ideas visually and graphically
- 31 7. The global collaborator content standards for third grade are that each student will:
 - 32 a. practice working with others using collaborative technologies

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1 TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR FOURTH GRADE

- 2 1. The empowered learner content standards for fourth grade are that each student will:
 - 3 a. develop learning goals and choose the appropriate technology tools to achieve
 - 4 them
 - 5 b. explore technologies and transfer their learned skills to different tools or learning
 - 6 environments
- 7 2. The digital citizen content standards for fourth grade are that each student will:
 - 8 a. recognize the role an online identity plays in the digital world and in real life
 - 9 b. practice safe, legal and ethical behavior when using technology and interacting
 - 10 online
 - 11 c. identify ownership of intellectual property and acknowledge the work of others
 - 12 d. identify what personal data is, the importance of keeping it private, and how it
 - 13 might be shared online
- 14 3. The knowledge constructor content standards for fourth grade are that each student will:
 - 15 a. use research techniques to locate digital resources
 - 16 b. explore the accuracy, perspective, cultural sensitivity, credibility, and relevance of
 - 17 sources
 - 18 c. use a variety of strategies to organize information and make meaningful
 - 19 connections between resources
- 20 4. The innovative designer technology content standards for fourth grade are that each
- 21 student will:
 - 22 a. practice using digital and non-digital tools to plan and manage a design process
 - 23 b. use a design process to solve a problem
- 24 5. The computational thinker content standards for fourth grade are that each student will:
 - 25 a. solve problems by selecting technology, analyzing data, and creating models
 - 26 b. break down problems into smaller parts, identify key information, and propose
 - 27 solutions
- 28 6. The creative communicator content standards for fourth grade are that each student will:
 - 29 a. identify the features and functions of a variety of creation or communication tools
 - 30 b. create original works by practicing strategies for remixing or repurposing
 - 31 c. create digital objects to communicate ideas visually and graphically
- 32 7. The global collaborator content standards for fourth grade are that each student will:
 - 33 a. use collaborative technologies to connect with people from different backgrounds
 - 34 or cultures, including peers, experts and community members, to explore
 - 35 different points of view on various topics
 - 36

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1 TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR FIFTH GRADE

- 2 1. The empowered learner content standards for fifth grade are that each student will:
 - 3 a. develop learning goals, select the technology tools to achieve them, and reflect
 - 4 on and revise the learning process as needed to achieve goals
 - 5 b. transfer their learned skills to different tools or learning environments
- 6 2. The digital citizen content standards for fifth grade are that each student will:
 - 7 a. demonstrate an understanding of the role an online identity plays in the digital
 - 8 world and the permanence of their decisions when interacting online
 - 9 b. engage in safe, legal and ethical behavior when using technology and interacting
 - 10 online
 - 11 c. demonstrate respect for intellectual property when using and sharing the work of
 - 12 others
 - 13 d. explain what personal data is, how to keep it private, and how it might be shared
 - 14 online
- 15 3. The knowledge constructor content standards for fifth grade are that each student will:
 - 16 a. employ appropriate research techniques to locate digital resources
 - 17 b. evaluate the accuracy, perspective, cultural sensitivity, credibility, and relevance
 - 18 of sources
 - 19 c. organize information and make meaningful connections between resources
- 20 4. The innovative designer technology content standards for fifth grade are that each
- 21 student will:
 - 22 a. use digital and non-digital tools to plan and manage a design process
 - 23 b. use a design process to develop and test prototypes
- 24 5. The computational thinker content standards for fifth grade are that each student will:
 - 25 a. explore or solve problems by selecting technology for data analysis, modeling
 - 26 and algorithmic thinking
 - 27 b. break down problems into smaller parts, identify key information, and propose
 - 28 solutions
 - 29 c. identify basic concepts related to automation, patterns, and algorithmic thinking
- 30 6. The creative communicator content standards for fifth grade are that each student will:
 - 31 a. identify and use the features of a variety of creation or communication tools
 - 32 b. use a variety of strategies for remixing or repurposing to create new works
 - 33 c. create digital objects to communicate ideas visually and graphically
- 34 7. The global collaborator content standards for fifth grade are that each student will:
 - 35 a. use appropriate digital tools to work with people from a variety of different
 - 36 backgrounds or cultures
 - 37 b. perform a variety of roles within a team using age-appropriate technology to
 - 38 complete a project or solve a problem

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1 TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR SIXTH - EIGHTH 2 GRADES

- 3 1. The empowered learner content standards for sixth-eighth grades are that each student
4 will:
 - 5 a. define personal learning goals, select and manage appropriate technologies to
6 achieve them, and reflect on their successes and areas of improvement in
7 working toward those goals
 - 8 b. navigate a variety of technologies and transfer personal knowledge and skills to
9 learn how to use new technologies
- 10 2. The digital citizen content standards for sixth-eighth grades are that each student will:
 - 11 a. manage digital identities and demonstrate an understanding of how the digital
12 footprint is permanent and can impact reputation
 - 13 b. demonstrate positive, safe, legal and ethical habits when using technology and
14 when interacting with others online
 - 15 c. demonstrate and model the appropriate use of intellectual property of print and
16 digital media, including copyright, permission and fair use, by creating a variety of
17 media products that include appropriate citation and attribution elements
 - 18 d. demonstrate how to keep personal data secure and understand how data-
19 collection technologies work
- 20 3. The knowledge constructor content standards for sixth-eighth grades are that each
21 student will:
 - 22 a. use research strategies effectively to locate appropriate digital resources in
23 support of learning
 - 24 b. evaluate the accuracy, perspective, cultural sensitivity, credibility and relevance
25 of resources
 - 26 c. define and consider potential biases in resources
 - 27 d. locate and collect resources from a variety of sources and organize into
28 collections for a range of projects and purposes
- 29 4. The innovative designer technology content standards for sixth-eighth grades are that
30 each student will:
 - 31 a. select and use digital tools to support design processes, identify constraints and
32 trade-offs, and weigh risks
 - 33 b. engage in a design process to develop, test and revise prototypes or create
34 innovative products
 - 35 c. use the process of trial and error and understand problems or setbacks as
36 potential opportunities for improvement
- 37 5. The computational thinker content standards for sixth-eighth grades are that each
38 student will:
 - 39 a. investigate and practice solving problems by using data analysis, modeling or
40 algorithmic thinking

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- 1 b. organize data and use technology to display, analyze, solve problems and make
- 2 decisions
- 3 c. break down problems into component parts, identify key pieces and use that
- 4 information to problem solve
- 5 d. demonstrate an understanding of how automation works and use algorithmic
- 6 thinking to design and automate solutions
- 7 6. The creative communicator content standards for sixth-eighth grades are that each
- 8 student will:
- 9 a. select appropriate platforms and tools to create, share, and communicate their
- 10 work
- 11 b. create original works or responsibly remix and repurpose other digital resources
- 12 into new creative works
- 13 c. communicate complex ideas clearly using various digital tools to convey the
- 14 concepts in a variety of accessible formats
- 15 7. The global collaborator content standards for sixth-eighth grades are that each student
- 16 will:
- 17 a. identify and use collaborative technologies to connect with others
- 18 b. identify and select a role within a team to meet goals, based on knowledge of
- 19 technology and content, as well as personal preference
- 20 8. The reflective user content standards for sixth-eighth grades are that each student will:
- 21 a. evaluate personal preferences for use of technology tools for different tasks or
- 22 purposes

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1 TECHNOLOGY INTEGRATION CONTENT STANDARDS FOR NINTH-TWELFTH 2 GRADES

- 3 1. The empowered learner content standards for ninth-twelfth grades are that each student
4 will:
 - 5 a. set personal learning goals, develop strategies leveraging technology to achieve
6 them, and reflect on the learning process to improve learning outcomes
 - 7 b. build networks and customize their learning environments in ways that support
8 their learning process
 - 9 c. use technology to seek feedback that informs and improves their practice and to
10 demonstrate their learning in a variety of ways
 - 11 d. demonstrate the ability to choose, use, and troubleshoot current technologies,
12 and transfer their knowledge to explore emerging technologies
- 13 2. The digital citizen content standards for ninth-twelfth grades are that each student will:
 - 14 a. cultivate and manage a positive digital identity and reputation
 - 15 b. engage in positive, safe, legal and ethical behavior when using technology,
16 including social interactions online or when using networked devices
 - 17 c. respect the rights and obligations of creating, using, and sharing intellectual
18 property
 - 19 d. manage their personal data to maintain digital privacy and security
- 20 3. The knowledge constructor content standards for ninth-twelfth grades are that each
21 student will:
 - 22 a. use research strategies to locate information and resources for their intellectual
23 or creative pursuits
 - 24 b. evaluate the accuracy, perspective, cultural sensitivity, credibility, and relevance
25 of information, media, data, or other resources
 - 26 c. curate information from digital resources using a variety of tools and methods to
27 create collections of artifacts that demonstrate meaningful connections or
28 conclusions
- 29 4. The innovative designer technology content standards for ninth-twelfth grades are that
30 each student will:
 - 31 a. initiate a deliberate design process for generating ideas, testing theories, creating
32 innovative artifacts, or solving authentic problems
 - 33 b. select and use digital tools to plan and manage a design process that considers
34 design constraints and calculated risks
 - 35 c. develop, test and refine prototypes as part of a cyclical design process
- 36 5. The computational thinker content standards for ninth-twelfth grades are that each
37 student will:
 - 38 a. identify problems suited for technology-assisted methods for data analysis,
39 abstract models, and algorithmic thinking

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- 1 b. collect data or identify relevant data sets, use digital tools to analyze them, and
- 2 represent data in various ways to facilitate problem-solving and decision-making
- 3 c. break down problems into component parts, extract key information, and develop
- 4 descriptive models to understand complex systems or facilitate problem-solving
- 5 d. explain how automation works and use algorithmic thinking to develop a
- 6 sequence of steps to create and test automated solutions
- 7 6. The creative communicator content standards for ninth-twelfth grades are that each
- 8 student will:
- 9 a. choose the appropriate platforms and tools for meeting the desired objectives of
- 10 their creation or communication
- 11 b. create original works or responsibly repurpose or remix digital resources into new
- 12 creative works
- 13 c. communicate complex ideas clearly and effectively by creating or using a variety
- 14 of digital objects such as visualizations, models or simulations
- 15 d. publish, present, and defend content that customizes the message and medium
- 16 for their intended audiences
- 17 7. The global collaborator content standards for ninth-twelfth grades are that each student
- 18 will:
- 19 a. identify and use digital tools to connect with learners from a variety of
- 20 backgrounds and cultures, engaging with them in ways that broaden mutual
- 21 understanding and learning
- 22 b. identify and use collaborative technologies to work with others, including peers,
- 23 experts or community members, to examine issues and problems from multiple
- 24 viewpoints
- 25 c. contribute constructively to project teams, assuming various roles and
- 26 responsibilities to work effectively toward a common goal
- 27 8. The reflective user content standards for ninth-twelfth grades are that each student will:
- 28 a. evaluate historical, cultural, and social impacts of technology innovations on
- 29 individuals and groups, including American Indians
- 30 b. explain how technology innovations influence their individual technology tool and
- 31 resource preferences

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1 TECHNOLOGY INTEGRATION PROGRAM DELIVERY STANDARDS

2 Chapter 55

- 3 1. In general, a basic program in technology integration education shall:
- 4 a. meet the following conditions:
- 5 i. development of skills that lead to lifelong pursuits;
- 6 ii. provide opportunities for authentic application, work experience, and
- 7 articulation with postsecondary education
- 8 iii. integrate and transfer technology skills across grade levels, content
- 9 areas, and programs
- 10 iv. provide access to emerging technology across grade levels, content
- 11 areas, and programs
- 12 b. include the following practices:
- 13 i. full progression of skills and knowledge from basic to advanced
- 14 ii. full integration of technology competencies with academic knowledge in a
- 15 contextual setting
- 16 iii. include whole group, teacher-led, or personalized instruction