Contents

PROGRAM DELIVERY STANDARDS

(Administrative Rules of Montana – Chapter 55)

In general, a basic program in technology integration education shall meet the following **conditions**:

- development of skills that lead to lifelong pursuits

- provide opportunities for authentic application, work experience, and/or articulation with postsecondary education

- integrate and transfer technology skills across grade levels, content areas, and programs

- provide access to emerging technology across grade levels, content areas, and programs

Include the following **practices**:

- progression of skills and knowledge from basic to advanced

- integration of technology competencies with academic knowledge in a contextual setting

- incorporate a range of instructional strategies, including personalized learning

CODING THE STANDARDS

CODING SCHEME

SUBJECT.STANDARD.GradeLevel SUBSTANDARD.sub-substandard

TI = Technology Integration

EL = empowered learners

DC = digital citizens

KC = knowledge constructors

ID = innovative designers

CT = computational thinkers

CC = creative communicators

GC = global collaborators

RU = reflective users

Example

TI.DC.K.3	recognize the importance of keeping personal information private.

K-12 STANDARDS

The following standards will go into effect on July 1, 2021.

Code	MONTANA CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR K-12
	The content areas covered by the technology integration standards include skills for
TI.EL	empowered learners
TI.DC	digital citizens
TI.KC	knowledge constructors
TI.ID	innovative designers
TI.CT	computational thinkers
TI.CC	creative communicators
TI.GC	global collaborators
TI.RU	reflective users

KINDERGARTEN

TI.K	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR KINDERGARTEN
TI.EL.K	**The empowered learner content standards for kindergarten are that each student will identify a variety of technologies that will help in learning**
TI.DC.K	**The digital citizen content standards for kindergarten are that each student will**
TI.DC.K.1	practice appropriate use of devices
TI.DC.K.2	share information and respect the work of others
TI.DC.K.3	recognize the importance of keeping personal information private
TI.ID.K	**The innovative designer content standards for kindergarten are that each student will use a design process with digital and non-digital tools**
TI.CT.K	**The computational thinker content standards for kindergarten are that each student will identify how technology is used to make a task easier**

FIRST GRADE

TI.1	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR FIRST GRADE
TI.EL.1	The empowered learner content standards for first grade are that each student will identify a variety of technologies that will help in learning.
TI.DC.1	The digital citizen content standards for first grade are that each student will
TI.DC.1.1	practice responsible use of technology
TI.DC.1.2	practice appropriate use of devices
TI.DC.1.3	share information and respect the work of others
TI.DC.1.4	recognize the importance of keeping personal information private
TI.ID.1	The innovative designer content standards for first grade are that each student will
TI.ID.1.1	use a design process to develop ideas or creations
TI.ID.1.2	use digital and non-digital tools to design a product
TI.CT.1	The computational thinker content standards for first grade are that each student will break down a problem into parts and identify ways to solve the problem

SECOND GRADE

TI.2	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR SECOND GRADE
TI.EL.2	**The empowered learner content standards for second grade are that each student will identify a variety of technologies that will help in learning**
TI.DC.2	**The digital citizen content standards for second grade are that each student will**
TI.DC.2.1	practice responsible use of technology
TI.DC.2.2	practice appropriate use of devices
TI.DC.2.3	recognize ownership of information
TI.DC.2.4	explain the importance of keeping personal information private and how to be safe online
TI.KC.2	**The knowledge constructor content standards for second grade are that each student will use a tool to organize information.**
TI.ID.2	**The innovative designer content standards for second grade are that each student will**
TI.ID.2.1	use a design process to develop ideas or creations
TI.ID.2.2	use digital and non-digital tools to design a product.
TI.CT.2	**The computational thinker content standards for second grade are that each student will**
TI.CT.2.1	break down a problem into parts and identify ways to solve the problem
TI.CT.2.2	explain how technology can make a task easier
TI.CC.2	**The creative communicator content standards for second grade are that each student will use tools to create something that communicates an idea to others**

THIRD GRADE

TI.3	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR THIRD GRADE
TI.EL.3	**The empowered learner content standards third grade are that each student will**
TI.EL.3.1	use appropriate tools to set and support a personal learning goal
TI.EL.3.2	recognize how skills can be transferred between tools
TI.DC.3	**The digital citizen content standards for third grade are that each student will**
TI.DC.3.1	practice responsible use of technology
TI.DC.3.2	demonstrate appropriate use of devices
TI.DC.3.3	practice how to be safe online
TI.DC.3.4	identify ownership of information and acknowledge the work of others
TI.DC.3.5	recognize the importance of keeping personal information private
TI.KC.3	**The knowledge constructor content standards for third grade are that each student will**
TI.KC.3.1	identify digital tools and resources to find information on topics of interest
TI.KC.3.2	explore the accuracy, credibility, and relevance of sources
TI.KC.3.3	use a variety of tools to organize information
TI.ID.3	**The innovative designer content standards for third grade are that each student will**
TI.ID.3.1	define questions, find solutions, test ideas to solve problems and share learning
TI.ID.3.2	use digital and non-digital tools to design a product with a step-by-step design process
TI.CT.3	**The computational thinker content standards for third grade are that each student will**
TI.CT.3.1	define a problem and select appropriate technology tools to explore and find solutions
TI.CT.3.2	identify patterns and categories in a data set
TI.CT.3.3	break down problems into smaller parts, identify key information, and propose solutions
TI.CT.3.4	evaluate how technology is used to make a task easier or repeatable
TI.CC.3	**The creative communicator content standards for third grade are that each student will**
TI.CC.3.1	use strategies for remixing or repurposing resources to create new works

TI.3	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR THIRD GRADE
TI.CC.3.2	create digital objects to communicate ideas visually and graphically
TI.GC.3	**The global collaborator content standards for third grade are that each student will practice working with others using collaborative technologies**

FOURTH GRADE

TI.4	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR FOURTH GRADE
TI.EL.4	**The empowered learner content standards fourth grade are that each student will**
TI.EL.4.1	develop learning goals and choose the appropriate technology tools to achieve them
TI.EL.4.2	explore technologies and transfer learned skills to different tools or earning environments
TI.DC.4	**The digital citizen content standards for fourth grade are that each student will**
TI.DC.4.1	recognize the role an online identity plays in the digital world and in real life
TI.DC.4.2	practice safe, legal and ethical behavior when using technology and interacting online
TI.DC.4.3	identify ownership of intellectual property and acknowledge the work of others
TI.DC.4.4	identify what personal data is, the importance of keeping it private, and how it might be shared online
TI.KC.4	**The knowledge constructor content standards for fourth grade are that each student will**
TI.KC.4.1	use research techniques to locate digital resources
TI.KC.4.2	explore the accuracy, perspective, cultural sensitivity, credibility, and relevance of sources
TI.KC.4.3	use a variety of tools to organize information and make meaningful connections between resources
TI.ID.4	**The innovative designer content standards for fourth grade are that each student will**
TI.ID.4.1	practice using digital and non-digital tools to plan and manage a design process
TI.ID.4.2	use design process to solve a problem
TI.CT.4	**The computational thinker content standards for fourth grade are that each student will**
TI.CT.4.1	solve problems by selecting technology, analyzing data, and creating models
TI.CT.4.2	break down problems into smaller parts, identify key information, and propose solutions
TI.CC.4	**The creative communicator content standards for fourth grade are that each student will**
TI.CC.4.1	identify the features and functions of a variety of creation or communication tools

TI.4	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR FOURTH GRADE
TI.CC.4.2	create original works by practicing strategies for remixing or repurposing
TI.CC.4.3	create digital objects to communicate ideas visually and graphically
TI.GC.4	**The global collaborator content standards for fourth grade are that each student will use collaborative technologies to connect with people from different backgrounds or cultures, including peers, experts and community members, to explore different points of view on various topics**

FIFTH GRADE

TI.5	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR FIFTH GRADE
TI.EL.5	**The empowered learner content standards fifth grade are that each student will**
TI.EL.5.1	develop learning goals, select the technology tools to achieve them and reflect on and revise the learning process as needed to achieve goals
TI.EL.5.2	transfer learned skills to different tools or learning environments
TI.DC.5	**The digital citizen content standards for fifth grade are that each student will**
TI.DC.5.1	demonstrate an understanding of the role an online identity plays in the digital world and the permanence of decisions when interacting online
TI.DC.5.2	engage in safe, legal and ethical behavior when using technology and interacting online
TI.DC.5.3	demonstrate respect for intellectual property when using and sharing the work of others
TI.DC.5.4	explain what personal data is, how to keep it private, and how it might be shared online
TI.KC.5	**The knowledge constructor content standards for fifth grade are that each student will**
TI.KC.5.1	employ appropriate research techniques to locate digital resources
TI.KC.5.2	evaluate the accuracy, perspective, cultural sensitivity, credibility, and relevance of sources
TI.KC.5.3	organize information and make meaningful connections between resources
TI.ID.5	**The innovative designer content standards for fifth grade are that each student will**
TI.ID.5.1	use digital and non-digital tools to plan and manage a design process
TI.ID.5.2	use design process to develop and test prototypes
TI.CT.5	**The computational thinker content standards for fifth grade are that each student will**
TI.CT.5.1	explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking
TI.CT.5.2	break down problems into smaller parts, identify key information, and propose solutions

TI.5	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR FIFTH GRADE
TI.CT.5.3	identify basic concepts related to automation, patterns, and algorithmic thinking
TI.CC.5	The creative communicator content standards for fifth grade are that each student will
TI.CC.5.1	identify and use the features of a variety of creation or communication tools
TI.CC.5.2	use a variety of strategies for remixing or repurposing to create new works
TI.CC.5.3	create digital objects to communicate ideas visually and graphically
TI.GC.5	The global collaborator content standards for fifth grade are that each student will
TI.GC.5.1	use appropriate digital tools to work with people from a variety of different backgrounds or cultures
TI.GC.5.2	perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem

SIXTH – EIGHTH GRADES

TI.6-8	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR SIXTH THROUGH EIGHTH GRADE
TI.EL.6-8	**The empowered learner content standards sixth-eighth grade are that each student will**
TI.EL.6-8.1	define personal learning goals, select and manage appropriate technologies to achieve them and reflect on successes and areas of improvement in working toward those goals
TI.EL.6-8.2	navigate a variety of technologies and transfer personal knowledge and skills to learn how to use new technologies
TI.DC.6-8	**The digital citizen content standards for sixth-eighth grade are that each student will**
TI.DC.6-8.1	manage digital identities and demonstrate an understanding of how the digital footprint is permanent and can impact reputation
TI.DC.6-8.2	demonstrate positive, safe, legal and ethical habits when using technology and interacting with others online
TI.DC.6-8.3	demonstrate and model the appropriate use of intellectual property of print and digital media, including copyright, permission and fair use, by creating a variety of media products that include appropriate citation and attribution elements
TI.DC.6-8.4	demonstrate how to keep personal data secure and understand how data-collection technologies work
TI.KC.6-8	**The knowledge constructor content standards for sixth-eighth grade are that each student will**
TI.KC.6-8.1	use research strategies effectively to locate appropriate digital resources in support of learning
TI.KC.6-8.2	evaluate the accuracy, perspective, cultural sensitivity, credibility, and relevance of resources
TI.KC.6-8.3	define and consider potential biases resources
TI.KC.6-8.4	locate and collect resources from a variety of sources and organize into collections for a range of projects and purposes
TI.ID.6-8	**The innovative designer content standards for sixth-eighth grade are that each student will**
TI.ID.6-8.1	select and use digital tools to support design processes, identify constraints and trade-offs and weigh risks
TI.ID.6-8.2	engage in design process to develop, test and revise prototypes or create innovative products
TI.ID.6-8.3	use the process of trial and error and understand problems or setbacks as potential opportunities for improvement
TI.CT.6-8	**The computational thinker content standards for sixth-eighth grade are that each student will**

TI.6-8	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR SIXTH THROUGH EIGHTH GRADE
TI.CT.6-8.1	investigate and practice solving problems by using data analysis, modeling or algorithmic thinking
TI.CT.6-8.2	organize data and use technology to display, analyze, solve problems and make decisions
TI.CT.6-8.3	break down problems into component parts, identify key pieces and use that information to problem solve
TI.CT.6-8.4	demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions
TI.CC.6-8	**The creative communicator content standards for sixth-eighth grade are that each student will**
TI.CC.6-8.1	select appropriate platforms and tools to create, share, and communicate work
TI.CC.6-8.2	create original works or responsibly remix and repurpose other digital resources into new creative works
TI.CC.6-8.3	communicate complex ideas clearly using various digital tools to convey the concepts in a variety of accessible formats
TI.GC.6-8	**The global collaborator content standards for sixth-eighth grade are that each student will**
TI.GC.6-8.1	identify and use collaborative technologies to connect with others
TI.GC.6-8.2	identify and select a role within a team to meet goals, based on knowledge of technology and content, as well as personal preference
TI.RU.6-8	**The reflective user content standards for sixth-eighth grade are that each student will evaluate personal preferences for use of technology tools for different tasks or purposes**

NINTH – TWELFTH GRADES

TI.9-12	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR NINTH THROUGH TWELFTH GRADE
TI.EL.9-12	**The empowered learner content standards ninth-twelfth grade are that each student will**
TI.EL.9-12.1	set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process to improve learning outcomes
TI.EL.9-12.2	build personal learning networks and customize learning environments in ways that support the learning process
TI.EL.9-12.3	use technology to seek feedback that informs and improves practice and to demonstrate learning in a variety of ways
TI.EL.9-12.4	demonstrate the ability to choose, use, and troubleshoot current technologies, and transfer knowledge to explore emerging technologies
TI.DC.9-12	**The digital citizen content standards for ninth-twelfth grade are that each student will**
TI.DC.9-12.1	cultivate and manage a positive digital identity and demonstrate an understanding of how the digital footprint is permanent and can impact reputation
TI.DC.9-12.2	engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices
TI.DC.9-12.3	respect the rights and obligations of creating, using, and sharing intellectual property
TI.DC.9-12.4	manage personal data to maintain digital privacy and security
TI.KC.9-12	**The knowledge constructor content standards for ninth-twelfth grade are that each student will**
TI.KC.9-12.1	use research strategies to locate information and resources for intellectual or creative pursuits
TI.KC.9-12.2	evaluate the accuracy, perspective, cultural sensitivity, credibility, and relevance of information, media, data, or other resources
TI.KC.9-12.3	evaluate potential biases in resources
TI.KC.9-12.4	curate information from digital resources using a variety of tools and methods to create collections of artifacts that are connected to a theme or support a thesis
TI.ID.9-12	**The innovative designer content standards for ninth-twelfth grade are that each student will**
TI.ID.9-12.1	initiate a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems

TI.9-12	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR NINTH THROUGH TWELFTH GRADE
TI.ID.9-12.2	select and use digital tools to plan and manage design process that considers design constraints and calculated risks
TI.ID.9-12.3	develop, test, and refine prototypes as part of cyclical design process
TI.CT.9-12	**The computational thinker content standards for ninth-twelfth grade are that each student will**
TI.CT.9-12.1	identify problems suited for technology-assisted methods for data analysis, abstract models, and algorithmic thinking
TI.CT.9-12.2	collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making
TI.CT.9-12.3	break down problems into component parts, extract key information and develop descriptive models to understand complex systems or facilitate problem-solving
TI.CT.9-12.4	explain how automation works and use algorithmic thinking to develop a sequence of steps to create and test automate solutions
TI.CC.9-12	**The creative communicator content standards for ninth-twelfth grade are that each student will**
TI.CC.9-12.1	choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication
TI.CC.9-12.2	create original works or responsibly repurpose or remix digital resources into new creative works
TI.CC.9-12.3	communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations
TI.CC.9-12.4	publish, present, and defend content that customizes the message and medium for the intended audiences
TI.GC.9-12	**The global collaborator content standards for ninth-twelfth grade are that each student will**
TI.GC.9-12.1	identify and use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning of others
TI.GC.9-12.2	identify and use collaborative technologies to work with others to examine global and local issues, problems and solutions from multiple viewpoints
TI.GC.9-12.3	contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal
TI.RU.9-12	**The reflective user content standards for ninth-twelfth grade are that each student will**

TI.9-12	CONTENT STANDARDS FOR TECHNOLOGY INTEGRATION FOR NINTH THROUGH TWELFTH GRADE
TI.RU.9-12.1	evaluate historical, cultural, and social impacts of technology innovations on individuals and groups, including urban, rural and reservation communities
TI.RU.9-12.2	reflect on and explain how technological innovations influence selection of tools and resources appropriate to a task

2008 TO 2021 COMPARISON

2008 - Students will . . .	2021 - Students will be . . . (skills)
use digital tools and resources for problem solving and decision making.	empowered learners
collaborate and communicate globally in a digital environment.	digital citizens
apply digital tools and skills with creativity and innovation to express him/herself, construct knowledge, and develop products and processes.	knowledge constructors
possess a functional understanding of technology concepts and operations.	innovative designers
	computational thinkers
	creative communicators
	global collaborators
	reflective users

Key Differences:

- Related to skills defined in the ISTE Standards for Students, made more measurable
- Montana addition of "Reflective User" begins in grades 6-8 regarding personal preferences with technology tools and the impacts and influence of technology on individuals and groups, including urban, rural and reservations