Ohio’s Learning Standards for Technology Crosswalk

2025

Ohio Department of Education & Workforce

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Department of Education & Workforce

Changes from 2017 to 2025

PHILOSOPHY OF OHIO'S LEARNING STANDARDS FOR TECHNOLOGY

The Ohio Learning Standards for Technology outline what students should know and be able to do in a digital world. For student standards around Technology, Ohio has adopted the International Society for Technology Education (ISTE) Standards for Students.

The ISTE Standards provide the competencies for learning, teaching, and leading with technology and are a comprehensive road map for the effective use of technology in schools worldwide. Grounded in learning science research and based on practitioner experience, the ISTE Standards ensure that using technology for learning creates high-impact, sustainable, scalable, and equitable learning experiences for all learners. They clearly identify the competencies needed for learning, teaching, and leading with digital pedagogy. These standards serve academic and workforce goals.

The standards for each grade band provide a clear progression of content knowledge and skills appropriate for students at that level. The ISTE Standards identify specific learning goals, always with an eye toward effective and appropriate technology integration across all content areas and grade levels. The standards focus on how students learn with technology rather than learning about technology tools. Students are expected to use technology when appropriate to take charge of their learning. The standards are designed to be integrated into the curriculum and instruction of all content areas. The standards are designed to be vendor and technology-neutral.


EMPOWERED LEARNER
DIGITAL CITIZEN
KNOWLEDGE CONSTRUCTOR
INNOVATIVE DESIGNER
COMPUTATIONAL THINKER
CREATIVE COMMUNICATOR
GLOBAL COLLABORATOR
ISTE
Standards
STUDENTS

ORGANIZATION OF THE TECHNOLOGY STANDARDS

STRANDS

The Technology Standards are divided into seven strands, which is an increase from three strands in the 2017 standards; however, the number of indicators in the standards has gone from **160 to 112 total indicators** (a difference of 48 fewer indicators).

2017	2025	Changes and Rationale
Information and Communications Technology (ICT): The understanding and application of digital learning tools for accessing, creating, evaluating, applying and communicating ideas and information. **Topic 1:** Identify and use appropriate digital learning tools and resources to accomplish a defined task. **Topic 2:** Use digital learning tools and resources to locate, evaluate and use information. **Topic 3:** Use digital learning tools and resources to construct knowledge. **Topic 4:** Use digital learning tools and resources to communicate and disseminate information to multiple audiences.	**Empowered Learner (EL):** Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences. **Knowledge Constructor (KC):** Students critically curate a variety of resources using digital tools, such as Artificial Intelligence chatbots, to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others. **Creative Communicator (CC):** Students communicate clearly and express themselves creatively for a variety of purposes, such as AI prompt engineering, using the platforms, tools, styles, formats, and digital media appropriate to their goals.	ICT has been broken out into the Empowered Learner, Knowledge Constructor, and Creative Communicator strands. The topics have been removed.
Society and Technology (ST): The interconnectedness of technology, self, society and the natural world, specifically addressing the ethical, legal, political and global impact of technology.	**Digital Citizen (DC):** Students recognize the responsibilities and opportunities for contributing to their digital communities, including making safe, legal, and ethical decisions using Artificial Intelligence.	ST has been broken out to into the Digital Citizen and Global Collaborator strands. The topics have been removed.

2017	2025	Changes and Rationale
Topic 1: Demonstrate an understanding of technology's impact on the advancement of humanity – economically, environmentally and ethically. **Topic 2:** Analyze the impact of communication and collaboration in both digital and physical environments. **Topic 3:** Explain how technology, society, and the individual impact one another.	**Global Collaborator (GC):** Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.	
Design and Technology (DT): Addresses the nature of technology to develop and improve products and systems over time to meet human/societal needs and wants through design processes. **Topic 1:** Define and describe technology, including its core concepts of systems, resources, requirements, processes, controls, optimization and trade-offs. **Topic 2:** Identify a problem and use an engineering design process to solve the problem. **Topic 3:** Demonstrate that solutions to complex problems require collaboration, interdisciplinary understanding and systems thinking. **Topic 4:** Evaluate designs using functional, aesthetic and creative elements.	**Innovative Designer (ID):** Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions. **Computational Thinker (CT):** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.	DT has been broken out into the Innovative Designer and Computational Thinker strands. The topics have been removed.

CONCEPTUAL SHIFT

The updated Ohio Learning Standards for Technology do not define technology skills. Rather, they are a framework designed to empower lifelong learning by building student agency in their learning. They do not focus on digital tools—they are intentionally tool-agnostic—but are instead anchored by instructional strategies and learning design. The new standards provide an aspirational framework to leverage technology by:

- Capitalizing on recognized attributes of responsible learners.
- Offering increased opportunities for learner-driven activities.
- Serving academic and workforce goals.
- Clearly aligning with content area standards in both language and goals.
- Including the learning sciences in relationship to pedagogy and learning environments.

The standards focus on providing a framework for effective technology integration, empowering learners through technology, developing digital citizenship, and promoting meaningful, digital-age learning experiences.

ADDRESSING ARTIFICIAL INTELLIGENCE

Rather than developing AI-specific indicators, ISTE decided to identify key skills for using AI safely, responsibly, and innovatively and updated select indicators in the Digital Citizen and others accordingly. ISTE reviewed the standards through the lens of equity and inclusion, recognizing that AI has the power to close or widen opportunity and achievement gaps, depending on how it is used.

Additionally, as recommended by Ohio's AI in Education Coalition, language has been added to the Digital Citizen, Knowledge Constructor, and Creative Communicator strand descriptions as they are most focused on key AI skills.

Specific AI standards are available in Ohio's Computer Science Learning Standards (Artificial Intelligence Strand), adopted in 2022. In-depth guidance on these AI standards is available in Ohio's Model Curriculum for Computer Science. These standards are based on national guidelines for teaching AI in K -12, developed by the Computer Science Teachers Association (CSTA) and the Association for the Advancement of Artificial Intelligence (AAAI). These national guidelines were recommended by aiEdu, who had representation on the advisory committee for the standards revision. aiEdu partnered with Innovate Ohio on Ohio's AI Toolkit.

ADDRESSING DIGITAL LITERACY

Digital Literacy is the ability to use technology to find, evaluate, create, and communicate information using cognitive and technical skills. Ohio's technology standards address all these skills throughout the strands. The Digital Citizen strand addresses the skills students need to safely navigate technology ecosystems. The Knowledge Constructor strand addresses the skills students need to locate content, evaluate sources, and interpret information. The Creative Communicator and Global Collaborator strands focus on the skills students need to express ideas safely and responsibly collaborate with others.

ADDRESSING STUDENT SAFETY AND SOCIAL MEDIA

The Digital Citizen strand is a guide for teachers in preparing students to be civic-minded in the digital world, including aspects like developing good judgment and inspiring inventive thinking when using various tools and social media platforms. The three components of the standard address: the student's digital self (the combination of his online persona and digital record), the student as a digital agent (civic and social responsibility), and the student's digital interactions (communications and collaborations). The standards support the notion that students must learn the skills and knowledge needed to thrive in an increasingly global and digital world, where social media is becoming more prevalent every day.

Crosswalks

The following standards crosswalks serve as a tool for educators to identify and map the shifts between the 2017 Ohio Learning Standards for Technology and the 2025 Ohio Learning Standards for Technology.

Kindergarten – Grade 2 Crosswalk

Kindergarten – Grade 2				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.1.a. Develop basic skills for using digital learning tools and resources to accomplish a defined task. ICT.1.b. With guidance, identify a goal and determine how digital learning tools can help accomplish that goal. ICT.2.a. Develop basic skills for locating information using digital learning tools and resources. ICT.2.b. Identify main ideas and details in information found with digital learning tools and resources. ICT.3.a. Develop basic skills for gathering and organizing information from multiple digital learning tools and resources to build knowledge. ICT.3.b. Use visuals found in digital learning tools and resources to clarify and add to knowledge. ICT.3.c. Collect, record and organize observations and data during student explorations using digital learning tools and resources.	**Empowered Learner (EL)**	EL.1.a. With guidance from an educator, students consider and set personal learning goals and utilize appropriate technologies that will demonstrate knowledge and reflection of the process. EL.1.b. With guidance from an educator, students learn about various technologies that can be used to connect to others or make their learning environment personal and select resources from those available to enhance their learning. EL.1.c. With guidance from an educator, students recognize performance feedback from digital tools, make adjustments based on that feedback, and use age-appropriate technology to share learning. EL.1.d. With guidance from an educator, students explore a variety of technologies that will help them in their learning and begin to demonstrate an understanding of how knowledge can be transferred between tools.	ICT.1.a.- Now EL.1.b. ICT. 1. b.- Now EL.1.a. EL.1.c. and EL.1.d. were added to expand student skills related to being an active participant in one's own learning.

Kindergarten – Grade 2				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.3.d. With guidance, create artifacts ICT.4.a. With guidance, discuss and identify communication needs considering the task, situation and information to be shared. ICT.4.b. With guidance, use digital learning tools to add audio and/or visual media to clarify information. ICT.4.c. With guidance, select appropriate digital learning tools and resources to produce and publish information.	**Knowledge Constructor (KC)**	KC.3.a. With guidance from an educator, students use digital tools and resources contained within a classroom platform or otherwise provided by the teacher to find information on topics of interest. KC.3.b. With guidance from an educator, students become familiar with age-appropriate criteria for evaluating digital content. KC.3.c. With guidance from an educator, students explore a variety of teacher-selected tools to organize information and make connections to their learning. KC.3.d. With guidance from an educator, students explore real-world issues and problems and share their ideas about them with others.	ICT.1.a., ICT.2. b., and ICT.3.b. combined to be broader- Now KC.3.a. ICT. 3.a.- Now KC.3.b. ICT. 3.c.- Now KC.3.c. KC.3.d.- Added to make learning more real-world-based
		Creative Communicator (CC)	CC.6.a. With guidance from an educator, students choose different tools for creating something new or for communicating with others. CC.6.b. Students use digital tools to create original works. CC.6.c. With guidance from an educator, students share ideas in multiple ways — visual, audio, etc. CC.6.d. With guidance from an educator, students select technology to share their ideas with different people.	ICT.3.d. combined with ICT.4.a.- Now CC.6.a. ICT.4.b.- Now CC.6.c. ICT.4.c.- Now CC.6.b. ST.2.a. –Moved from ST, now CC.6.d.

Kindergarten – Grade 2				
2017		**2025**		**Changes and Rationale**
Society and Technology (ST)	ST.1.a. Demonstrate appropriate and identify inappropriate uses of technology required to be a responsible user. ST.1.b. Identify positive and negative impacts your use of technology can have on you and your family. ST.2.a. Communicate and collaborate using several digital methods. ST.2.b. Identify positive and negative ways of collaborating in digital and physical environments. ST.2.c. Investigate how technology does (or does not) impact the way your family communicates. ST.3.a. State the advantages/disadvantages of technology in your life. ST.3.b. Identify examples of how technology innovations/inventions can have multiple applications. ST.3.c. Identify how the use of technology affects self and others in various ways. ST.3.d. Define and discuss digital identity and digital footprints. ST.3.e. Provide examples of how rules for respecting others' belongings apply to digital content and information.	**Digital Citizen (DC)**	DC.2.a. Students practice responsible use of technology through teacher-guided online activities and interactions to understand how digital space impacts their lives. DC.2.b. With guidance from an educator, students understand how to be careful when using devices and how to be safe online, follow safety rules when using the internet, and collaborate with others. DC.2.c. With guidance from an educator, students learn about ownership and sharing of information and how to respect the work of others. DC.2.d. With guidance from an educator, students demonstrate an understanding that technology is all around them and the importance of keeping their information private.	ST.1.a., ST.1.b., and ST.2.c. broadened- Now DC.2.a. ST.2.a. –Moved to CC, now CC.6.d. ST.2.b. and ST.3.c. broadened – Now DC.2.b. ST.3.a. and ST.3.d. broadened- Now DC.2.d. ST.3.b. -Removed ST.3.e.- Now DC.2.c.

Kindergarten – Grade 2				
2017		**2025**		**Changes and Rationale**
		Global Collaborator (GC)	GC.7.a. With guidance from an educator, students use technology tools to work with friends and with people outside their neighborhood, city, and beyond. GC.7.b. With guidance from an educator, students use technology to communicate with others and to look at problems from different perspectives. GC.7.c. With guidance from an educator, students take on different team roles and use age-appropriate technologies to complete projects. GC.7.d. With guidance from an educator, students use age-appropriate technologies to work together to understand problems and suggest solutions.	The GC.7.a. and GC.7.b. expand on the collaboration of ST.2.a. to include a global audience DT.3.b.-Now GC.7.c. and GC.7.d.

Kindergarten – Grade 2				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.1.a. Identify and discuss differences between the human-designed world and the natural world. DT.1.b. Describe technology as something someone made to meet a want or need. DT.1.c. Explain that systems have parts or components that work together to accomplish a goal. DT.1.d. Give examples of how resources such as tools and materials are things that help people get a job done. DT.2.a. Observe and describe details of an object's design. DT.2.b. Demonstrate the ability to follow a simple design process: identify a problem, think about ways to solve the problem, develop possible solutions, and share and evaluate solutions with others.	**Innovative Designer (ID)**	ID.4.a. With guidance from an educator, students ask questions, suggest solutions, test ideas to solve problems, and share their learning. ID.4.b. Students use age-appropriate digital and non-digital tools to design something and are aware of the step-by-step process of designing. ID.4.c. Students use a design process to develop ideas or creations and test their designs and redesign them if necessary. ID.4.d. Students demonstrate perseverance when working to complete a challenging task.	DT.1.a.- Removed to make the strand more broad DT.1.d.- Now ID.4.b. DT.2.a.- Removed to make the strand more broad DT.2.b.- Now ID.4.a DT.2.c.- Now ID.4.c. DT.2.e.- Now ID.4.a DT.4.a.- Removed to make the strand broader, the topic can be covered in ID.4.c. DT.4.b.-Removed to make the strand broader, the topic can be covered in ID.4.c. DT.4.c.- Removed to make the strand broader, the topic can be covered in ID.4.c. DT.4.d.- Removed to make the strand broader, the topic can be covered in ID.4.c. DT.3.b.- Moved to GC, now GC.7.c. and GC.7.d. ID.4.d. – Added as an essential skill when students are engaged in problem solving

Kindergarten – Grade 2				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.2.c. Explain that the design process is a plan to find solutions to problems. DT.2.d. Demonstrate that there are many possible solutions to a design problem. DT.2.e. Communicate design plans and solutions using drawings and descriptive language. DT.3.a. Describe how different technologies are used in various fields. DT.3.b. Work as a team to identify possible problems to solve and their potential technological solutions. DT.4.a. Identify and discuss the use of aesthetics in everyday objects. DT.4.b. Identify and discuss functional aspects of everyday objects. DT.4.c. Identify and discuss examples of creativity found in everyday objects. DT.4.d. Discuss and give examples of how changes in design can be used to strengthen or improve a product.	**Computational Thinker (CT)**	CT.5.a. With guidance from an educator, students identify a problem and select appropriate technology tools to explore and find solutions. CT.5.b. With guidance from an educator, students analyze age-appropriate data and look for similarities to identify patterns and categories. CT.5.c. With guidance from an educator, students break a problem into parts and identify ways to solve the problem. CT.5.d. Students understand how technology is used to make a task easier or repeatable and can identify real-world examples.	DT.1.b.- Now CT.5.d. DT.1.c. broadened- Now CT.5.b. DT.2.d. and DT.3.a. broadened- Now CT.5.a. CT.5.c. -Added to broaden the skills students employ to solve problems

Grade 3- Grade 5 Crosswalk

Grade 3 – Grade 5				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.1.a. With guidance, identify and use digital learning tools or resources to support planning, implementing and reflecting upon a defined task. ICT.1.b. Explain the use of selected digital learning tools and resources to support productivity and learning. ICT.2.a. Identify questions related to a topic of interest to broaden or narrow the topic as needed. ICT.2.b. Use appropriate search techniques to locate needed information using digital learning tools and resources. ICT.2.c. Use multiple criteria developed with guidance to differentiate between relevant and irrelevant information found with digital learning tools and resources.	**Empowered Learner (EL)**	EL.1.a. Students develop learning goals in collaboration with an educator, select the technology tools to achieve them, and reflect on and revise the learning process as needed to achieve goals. EL.1.b. With the oversight and support of an educator, students build a network of experts and peers within school policy and customize their environments to enhance their learning. EL.1.c. Students seek feedback from both people and features embedded in digital tools and use age-appropriate technology to share learning. EL.1.d. Students explore age-appropriate technologies and begin to transfer their learning to different tools or learning environments.	ICT.1.a.- Now EL.1.a. ICT.1.b.- Now EL.1.b. EL.1.c. and EL.1.d. were added to expand student skills related to being an active participant in one's own learning.

Grade 3 – Grade 5				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.2.d. Explain basic ideas of plagiarism and copyright. ICT.2.e. Use digital citation tools to cite sources with appropriate guidance. ICT.3.a. Gather, organize and summarize information from multiple digital learning tools and resources to build knowledge of a topic ICT.3.b. Interpret images, diagrams, maps, graphs, infographics, videos, animations, interactives, etc. in digital learning tools and resources to clarify and add to knowledge. ICT.3.c. Organize observations and data collected during student explorations to determine if patterns are present.	**Knowledge Constructor (KC)**	KC.3.a. Students collaborate with a teacher to employ appropriate research techniques to locate digital resources that will help them in their learning process. KC.3.b. Students learn how to evaluate sources for accuracy, perspective, credibility, and relevance. KC.3.c. Using a variety of strategies, students organize information and make meaningful connections between resources. KC.3.d. Students explore real-world problems and issues and collaborate with others to find answers or solutions.	ICT.2.a. and ICT.2.b. combined- Now KC.3.a. ICT.2.c.- Now KC.3.b. ICT.2.d. and ICT.2.e.- Broadened to include DC.2.b ICT.3.a. and ICT.3.b. combined- Now KC.3.c. ICT.3.c.- Moved to CT, now CT.5.d.

Grade 3 – Grade 5				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.3.d. Create artifacts using digital learning tools and resources to demonstrate knowledge. ICT.4.a. With guidance, discuss and identify communication needs considering goals, audience and content. ICT.4.b. With guidance, select media formats appropriate to content and audience. ICT.4.c. Evaluate the features of digital learning tools and resources based on the characteristics of a specific audience. ICT.4.d. Produce and publish information appropriate for a target audience using digital learning tools and resources.	**Creative Communicator (CC)**	CC.6.a. Students recognize and utilize the features and functions of a variety of creation or communication tools. CC.6.b. Students create original works and learn strategies for remixing or repurposing to create new artifacts. CC.6.c. Students create digital artifacts to communicate ideas visually and graphically. CC.6.d. Students learn about audiences and consider their expected audience when creating digital artifacts and presentations.	ICT.3.d.- Now CC.6.b. ICT.4.a., ICT.4.c., ICT.4.d., and ST.2.b. combined- Now CC.6.c. and CC.6.d. ICT.4.b. and ST.2.a. - Now CC6.a.

Grade 3 – Grade 5				
2017		**2025**		**Changes and Rationale**
Society and Technology (ST)	ST.1.a. Demonstrate appropriate use of technology and explain the importance of responsible and ethical technology use. ST.1.b. Identify positive and negative impacts your use of personal technology and technology systems (e.g., agriculture, transportation, energy generation, water treatment) can have on your community. ST.1.c. Describe legal and responsible practices when utilizing technology. ST.2.a. Create a plan and select collaboration and/or communication tools to complete a given task. ST.2.b. Exercise digital etiquette when communicating and collaborating.	**Digital Citizen (DC)**	DC.2.a. Students demonstrate an understanding of the role an online identity plays in the digital world and learn the permanence of their decisions when interacting online. DC.2.b. Students practice and encourage others in safe, legal, and ethical behavior when using technology and interacting online, with guidance from an educator. DC.2.c. Students learn about, demonstrate, and encourage respect for intellectual property with both print and digital media when using and sharing the work of others. DC.2.d. Students demonstrate an understanding of what personal data is, how to keep it private, and how it might be shared online.	ST.1.a. and ST.1.c. – Now DC.2.b. ST.1.b.- Removed ST.3.e.- Now DC.2.c. ST.2.a. -Moved to CC ST.2.b.- Moved to CC ST.2.c.- Now DC.2.d. ST.3.b.- Removed to make the standard broader ST.3.c. -Removed to make the standard broader, can be discussed in DC.2.b. ST.3.d.- Now DC.2.a.

Grade 3 – Grade 5				
2017		**2025**		**Changes and Rationale**
Society and Technology (ST)	ST.2.c. Identify the positive and negative impact the use of technology can have on relationships, communities and self. ST.3.a. Describe the advantages/disadvantages of technology (past, present, future) to understand the relationship between technology, society and the individual. ST.3.b. Demonstrate how technology innovations/inventions can have multiple applications. ST.3.c. Identify and discuss how the use of technology affects self and others in various ways. ST.3.d. Identify the components of your digital identity and your digital footprint. ST. 3.e. Identify and discuss laws and rules that apply to digital content and information.	**Global Collaborator (GC)**	GC.7.a. Students use digital tools to work with friends and people from different backgrounds or cultures. GC.7.b. Students use collaborative technologies to connect with others, including peers, experts, and community members, to explore different points of view on various topics. GC.7.c. Students perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem. GC.7.d. Students work with others using collaborative technologies to explore local and global issues.	ST.3.a.- Now GC.7.b. GC.7.a.- Added to broaden students' perspectives through the use of technology tools GC.7.c.- Added to focus on students' collaboration skills GC.7.d.- Added to focus on students' collaboration skills and to make learning more real-world-based

Grade 3 – Grade 5				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.1.a. Demonstrate how applying human knowledge using tools and machines extends human capabilities to meet our needs and wants. DT.1.b. Give examples of how requirements for a product can limit the design possibilities for that product. DT.1.c. Describe a process as a series of actions and how it is used to produce a result. DT.1.d. Identify and describe examples of technology products and processes. DT.1.e. Explain how controls use information to cause systems to change, like a home thermostat turning on the heat based on the low temperature of a room. DT.2.a. Critique needs and opportunities for designing solutions. DT.2.b. Plan and implement a design process: identify a problem, think about ways to solve the problem, develop possible solutions, test and evaluate solution(s), present a possible solution, and redesign to improve the solution.	**Innovative Designer (ID)**	ID.4.a. Students explore and practice how a design process works to generate ideas, consider solutions, plan to solve a problem, or create innovative products that are shared with others. ID.4.b. Students use digital and non-digital tools to plan and manage a design process. ID.4.c. Students engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays. ID.4.d. Students demonstrate perseverance when working with open-ended problems.	DT.1.a. and DT.1.d. combined – Now ID.4.a. DT.1.b. - Removed DT.1.c. and DT.2.b.– Now ID.4.b. and ID.4.c. DT.1.e.- Removed DT.2.a.- Can be covered in ID.4.a. DT.2.c.- related to CC.6.c. and CT.5.b. DT.3.a.- Can be covered in ID.4.a. and ID.4.c. DT.3.b.- Removed DT.3.c.- Removed DT.4.a.- Removed DT.4.b.-Removed ID.4.d. – Added as an essential skill when students are engaged in problem solving

Grade 3 – Grade 5				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.2.c. Generate, develop, and communicate design ideas and decisions using appropriate terms and graphical representations. DT.3.a. Design a product with multiple components and describe how the components interact to form a system. DT.3.b. Explore and document connections between technology and other fields of study. DT.3.c. Identify a product and describe how people from different disciplines combined their skills in the design and production of the product. DT.4.a. Use criteria developed with guidance to evaluate a new or improved product for its functional, aesthetic and creative elements. DT.4.b. Examine a familiar product or process and suggest improvements to its design.	**Computational Thinker (CT)**	CT.5.a. Students explore or solve problems by selecting technology for data analysis, modeling, and algorithmic thinking, with guidance from an educator. CT.5.b. Students select effective technology to represent data. CT.5.c. Students break down problems into smaller parts, identify key information, and propose solutions. CT.5.d. Students understand and explore basic concepts related to automation, patterns, and algorithmic thinking.	CT.5.a.- Added to broaden the skills students employ to solve problems CT.5.b. – See DT.2.c. above CT.5.c. - Added to broaden the skills students employ to solve problems CT.5.d. -Added to broaden the skills students employ to solve problems

Grade 6- Grade 8 Crosswalk

Grade 6 – Grade 8				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.1.a. Develop criteria for selecting digital learning tools and resources to accomplish a defined task. ICT.1.b. Select and use digital learning tools or resources to support planning, implementing, and reflecting upon a defined task. ICT.1.c. Evaluate the use of digital learning tools and resources to support learning and productivity. ICT.2.a. Use advanced search techniques to locate needed information using digital learning tools and resources. ICT.2.b. Use multiple criteria to evaluate the validity of information found with digital learning tools and resources. ICT.2.c. Apply principles of copyright, use digital citation tools and use strategies to avoid plagiarism. ICT.3.a. Analyze and integrate textual, visual, and quantitative information (images, diagrams, maps, graphs, infographics, videos, animations, interactives, etc.) from multiple digital learning tools and resources. ICT.3.b. Analyze data collected or retrieved from a variety of digital learning tools and resources to determine if patterns or trends are present.	**Empowered Learner (EL)**	EL.1.a. Students articulate personal learning goals, select and manage appropriate technologies to achieve them and reflect on their successes and areas of improvement in working toward their goals. EL.1.b. Students identify and develop online networks within school policy, and customize their learning environments in ways that support their learning, in collaboration with an educator. EL.1.c. Students actively seek performance feedback from people, including teachers, and from functionalities embedded in digital tools to improve their learning process, and they select technology to demonstrate their learning in a variety of ways. EL.1.d. Students can navigate a variety of technologies and transfer their knowledge and skills to learn how to use new technologies.	ICT.1.a.- Now EL.1.a. ICT.1.b.- Now EL.1.b. ICT.1.c.- Now EL.1.c. EL.1.d. -Added to address the variety of technologies that students have experienced by this age range.

Grade 6 – Grade 8				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.3.c. Create artifacts using digital learning tools and resources to demonstrate knowledge. ICT.4.a. Use digital learning tools and resources to identify communication needs considering goals, audience and content. ICT.4.b. Select and use a variety of media formats to communicate information to a target audience. ICT.4.c. Discuss and identify ways to communicate and disseminate information so that users with varied needs can access information. ICT.4.d. Evaluate the effectiveness of a digital tool to communicate information with multiple audiences.	**Knowledge Constructor (KC)**	KC.3.a. Students demonstrate and practice the ability to effectively use research strategies to locate appropriate digital resources in support of their learning. KC.3.b. Students practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility, and relevance. KC.3.c. Students locate and collect resources from a variety of sources and organize assets into collections for a wide range of projects and purposes. KC.3.d. Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.	ICT.2.a.- Now KC.3.a. ICT.2.b.- Now KC.3.b. ICT.2.c.- moved to DC.2.b. ICT.3.b.- Now KC.3.c. ST.1.d. moved from ST- Now KC.3.d.

Grade 6 – Grade 8				
2017		**2025**		**Changes and Rationale**
		Creative Communicator (CC)	CC.6.a. Students select appropriate platforms and tools to create, share, and communicate their work effectively. CC.6.b. Students create original works or responsibly repurpose other digital resources into new creative works. CC.6.c. Students communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, etc. CC.6.d. Students publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences.	ICT.3.a.- Now CC.6.c. ICT.3.c. and ICT.4.b.- Now CC.6.a. and CC.6.b. ICT.4.a., ICT.4.c., and ICT.4.d. combined- Now CC.6.d.

Grade 6 – Grade 8				
2017		**2025**		**Changes and Rationale**
Society and Technology (ST)	ST.1.a. Advocate and exhibit ethical, legal and responsible practices when utilizing technology. ST.1.b. Explore the advantages and disadvantages of widespread use, accessibility, and reliance on technology in your world. ST.1.c. Review and demonstrate ethical considerations and legal requirements involved in the creation and use of digital technologies. ST.1.d. Analyze an environmental concern and investigate technology solutions to that problem. ST.2.a. Critique specific instances of how technology has impacted access to information, communications and collaboration. ST.2.b. Explain the positive and negative impact the use of technology can have on personal, professional and community relationships. ST.2.c. Investigate how social media impacts society and the digital identities of individuals and organizations. ST.2.d. Apply appropriate interactions and digital etiquette in varying contexts, reflecting upon potential impacts in both digital and physical environments.	**Digital Citizen (DC)**	DC.2.a. Students manage their digital identities and reputations within school policy, including demonstrating an understanding of how digital actions are never fully erasable. DC.2.b. Students demonstrate and advocate for positive, safe, legal, and ethical habits when using technology and when interacting with others online. DC.2.c. Students demonstrate and advocate for an understanding of intellectual property with both print and digital media — including copyright, permission, and fair use — by creating a variety of media products that include appropriate citation and attribution elements. DC.2.d. Students demonstrate an understanding of what personal data is and how to keep it private and secure, including the awareness of terms such as encryption, HTTPS, password, cookies, and computer viruses; they also understand the limitations of data management and how data-collection technologies work.	ST.1.a., ST.3.f., and ICT. 2.c. combined- Now DC.2.b. ST.1.b.-Removed ST.1.c.- Now DC.2.c. ST.1.d.- Moved and now KC.3.d. ST.2.a.- Removed to make strand broader ST.2.b.- Removed to make strand broader ST.2.c., ST.2.d., and ST.3.e. combined- Now DC.2.a. and DC.2.d. ST.3.a.- Removed to make strand broader ST.3.b.- Removed to make strand broader ST.3.c.- Removed to make strand broader ST.3.d.- Removed to make strand broader

Grade 6 – Grade 8				
2017		**2025**		**Changes and Rationale**
Society and Technology (ST)	ST.3.a. Discuss and define how issues (such as economic, political, scientific and cultural) are influenced by the development and use of technology. ST.3.b. Explain how new technology development is driven by factors such as commercialization, creative/inventive thinking, and cultural/historical influence. ST.3.c. Analyze how technological innovations/inventions can have multiple applications, both intended and unintended. ST.3.d. Describe the impact of an individual's wants, values and interests on the development of new technologies. ST.3.e. Manage components of your digital identity and your digital footprint. ST.3.f. Evaluate current and past revisions to laws, rules and policies as society responds to technological advancements.	**Global Collaborator (GC)**	GC.7.a. Students use digital tools to interact with others to develop a richer understanding of different perspectives and cultures. GC.7.b. Students use collaborative technologies to connect with others, including peers, experts, and community members, to learn about issues and problems or to gain a broader perspective. GC.7.c. Students determine their role in a team to meet goals based on their knowledge of technology and content and personal preference. GC.7.d. Students select collaborative technologies and use them to work with others to investigate and develop solutions related to local and global issues.	DT.3.a. and DT.3.c- Now GC.7.a. GC.7.b. - Added to broaden students' perspectives using collaborative tools GC.7.c.- Added to focus on students' collaboration skills GC.7.d.- Added to focus on students' collaboration skills and to make learning more real-world-based

Grade 6 – Grade 8				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.1.a. Explore and document how technology can impact efficiency. DT.1.b. Analyze how tools, materials and processes are used to alter the natural and human designed worlds. DT.1.c. Define and categorize the requirements of a design as either criteria or constraints. DT.1.d. Explain how optimization is the process of making a product as fully functional and effective as possible. DT.1.e. Describe how trade-offs involve a choice of one quality over another. DT.1.f. Give examples of how trade-offs must occur when optimizing a design in order to maintain design requirements. DT.2.a. Apply a complete design process to solve an identified individual or community problem: research, develop, test, evaluate and present several possible solutions, and redesign to improve the solution. DT.2.b. Describe how invention is a process of turning ideas and imagination into devices and systems. DT.2.c. Explain how innovation is the process of modifying an existing system or system element(s) to improve it.	**Innovative Designer (ID)**	ID.4.a. Students engage in a design process and employ it to generate ideas, create innovative products, or solve authentic problems. ID.4.b. Students select and use digital tools to support a design process and expand their understanding to identify constraints and trade-offs and weigh risks. ID.4.c. Students engage in a design process to develop, test, and revise prototypes, embracing the cyclical process of trial and error and understanding problems or setbacks as potential opportunities for improvement. ID.4.d. Students demonstrate an ability to persevere and handle greater ambiguity as they work to solve open-ended problems.	DT.1.a. and DT.1.b. combined- Now ID.4.a. DT.1.c., DT.1.d., DT.1.e., and DT.1.f.- Now ID.4.b. DT.2.a., DT.2.b., DT.2.c., DT.2.d., and DT.2.e. combined- Now ID.4.c. DT.3.a.- Moved to GC DT.3.b.- Removed to make the strand broader DT.3.c.- Moved to GC DT.3.d.- Removed to make the strand broader DT.4.a.- Removed to make the strand broader DT.4.b.- Removed to make the strand broader DT.4.c.- Removed to make the strand broader ID.4.d. – Added as an essential skill when students are engaged in problem solving

Grade 6 – Grade 8				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.2.d. Consider multiple factors, including criteria and constraints (e.g. research, cost, time, materials, feedback, safety, etc.) to justify decisions when developing products and systems to solve problems. DT.2.e. Identify and explain why effective designs develop from non-linear, flexible application of the design process. DT.3.a. Collaborate to solve a problem as an interdisciplinary team modeling different roles and functions. DT.3.b. Explain ways that invention and innovation within one field can transfer into other fields of technology. DT.3.c. Evaluate the effectiveness of the group's collaboration during the engineering design process and the contribution of the varying roles. DT.3. d. Give examples of how changes in one part of a system can impact other parts of that system. DT.3. e. Deconstruct a system into its component parts and describe how they interrelate. DT.4. a. Examine the progression of a product to identify how the functional, aesthetic and creative elements were applied.	**Computational Thinker (CT)**	CT.5.a. Students practice defining problems to solve by computing for data analysis, modeling, or algorithmic thinking. CT.5.b. Students find or organize data and use technology to analyze and represent it to solve problems and make decisions. CT.5.c. Students break problems into component parts, identify key pieces, and use that information to problem-solve. CT.5.d. Students demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions.	DT.3.e.- Now CT.5.c. CT.5.a. -Added to broaden the skills students employ to solve problems CT.5.b. -Added to broaden the skills students employ to solve problems CT.5.d. -Added to broaden the skills students employ to solve problems

Grade 6 – Grade 8				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.4. b. Analyze environments or products that are examples of the application of the principles of universal or inclusive design. DT.4. c. Apply the design principle "form follows function" to develop a product.			

Grade 9- Grade 12 Crosswalk

Grade 9 – Grade 12				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.1.a. Develop strategies for using digital learning tools and resources to plan, implement and reflect upon a complex task. ICT.1.b. Based on project-specific requirements, develop criteria to select digital learning tools and resources to support the concurrent management of multiple projects. ICT.1.c. Analyze and evaluate the ease of use and effectiveness of available features of selected digital learning tools and resources. ICT.2.a. Use advanced search and filtering techniques to locate needed information using digital learning tools and resources. ICT.2.b. Independently construct an evaluative process for information sources chosen for a learning task.	**Empowered Learner (EL)**	EL.1.a. Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them, and reflect on the learning process itself to improve learning outcomes. EL.1.b. Students build networks and customize their learning environments in ways that support the learning process. EL.1.c. Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways. EL.1.d. Students understand the fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring emerging technologies.	ICT.1.a.- Now EL.1.a. ICT.1.b.- Now EL.1.b. ICT.1.c.- Now EL.1.d. EL.1.c. -Added

Grade 9 – Grade 12				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.2.c. Analyze the complexities and discrepancies found in digital information to make informed decisions. ICT.2.d. Apply principles of copyright, use digital citation tools and use strategies to avoid plagiarism when using the work of others as well as creating personal work. ICT.3.a. Synthesize textual, visual, and quantitative research and data (images, diagrams, maps, graphs, infographics, videos, animations, interactives, etc.) from a variety of digital learning tools and resources. ICT.3.b. Analyze relationships and forecast outcomes using data collected by students or retrieved from a variety of digital learning tools and resources. ICT.3.c. Create artifacts using digital learning tools and resources to demonstrate knowledge. ICT.4.a. Use digital learning tools and resources to identify communication needs considering goals, audience, content, access to tools or devices, timing of communication (time zones), etc.	**Knowledge Constructor (KC)**	KC.3.a. Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits. KC.3.b. Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources. KC.3.c. Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions. KC.3.d. Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.	ICT.2.a.- Now KC.3.a ICT.2.b. and ICT.2.c.- Now KC.3.b. ICT.2.d., ICT.3.a., ICT.3.b., and ICT.3.c. – Now KC.3.c. ST.3.a. and ST.3.b.- Now KC.3.d.

Grade 9 – Grade 12				
2017		**2025**		**Changes and Rationale**
Information and Communication Technology (ICT)	ICT.4.b. Based on communication needs, develop, implement and evaluate a communication plan to disseminate information to multiple audiences. ICT.4.c. Integrate accessibility principles to effectively communicate to, and meet the needs of, multiple audiences. ICT.4.d. Use digital learning tools to represent and model complex systems of information to a target audience.	**Creative Communicator (CC)**	CC.6.a. Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication. CC.6.b. Students create original works or responsibly repurpose or remix digital resources into new creations. CC.6.c. Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations. CC.6.d. Students publish or present content that customizes the message and medium for their intended audiences.	ICT.4.a. and ICT.4.b.- Now CC.6.a. and CC.6.b. ICT.4.c. and ICT.4.d.- Now CC.6.c. and CC.6.d

Grade 9 – Grade 12				
2017		**2025**		**Changes and Rationale**
Society and Technology (ST)	ST.1.a. Interpret and practice ethical considerations and legal requirements involved in the creation, and use of digital technologies. ST.1.b. Debate the advantages and disadvantages of widespread use, accessibility, and reliance on technology in your world, in the workplace and in global society. ST.1.c. Select a technology and analyze its global impact across multiple disciplines. ST.2.a. Demonstrate and advocate effective collaboration strategies and techniques using technology. ST.2.b. Describe and demonstrate professionalism and civility in communications and collaborative environments. ST.2.c. Analyze how social media impacts society, individuals and organizations. ST.2.d. Manage and adjust appropriate interactions and digital etiquette in varying contexts, in digital, physical and cultural environments. ST.3.a. Debate how demand for technology and innovation have reshaped the social, cultural, political and/or economic landscape, citing references and examples.	**Digital Citizen (DC)**	DC.2.a. Students manage their digital identity and understand the lasting impact of their online behaviors on themselves and others and make safe, legal, and ethical decisions in the digital world. DC.2.b. Students demonstrate empathetic, inclusive interactions online and use technology to responsibly contribute to their communities. DC.2.c. Students safeguard their well-being by being intentional about what they do online and how much time they spend online. DC.2.d. Students take action to protect their digital privacy on devices and manage their personal data and security while online.	ST.1.a., ST.2.c., and ST.3.e.- Now DC.2.a. ST.2.b. and ST.2.d.- Now DC.2.b. ST.3.a. and ST.3.b.- Moved to KC.3.d. DC.2.c.- Added to focus on online safety skills DC.2.d.-Added Added to focus on online safety skills

Grade 9 – Grade 12				
2017		**2025**		**Changes and Rationale**
Society and Technology (ST)	ST.3.b. Discuss how technological innovation has resulted when ideas, knowledge or skills have been shared across multiple fields. ST.3.c. Forecast the need to review, adapt, and innovate laws and policies applied to copyrights, patents, trademarks and speech. ST.3.d. Predict changes in society and intentional and unintentional consequences resulting from continued technological progress and defend the rationale within a given context. ST.3.e. Analyze and influence your digital identity and digital footprint while considering past, present, and future implications.	**Global Collaborator (GC)**	GC.7.a. Students 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. GC.7.b. Students use collaborative technologies to work with others, including peers, experts, or community members, to examine issues and problems from multiple viewpoints. GC.7.c. Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal. GC.7.d. Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.	ST.1.b. and ST.2.a.- Now GC.7.b. ST.1.c., ST.3.c. and ST.3.d.- Now GC.7.d. GC.7.a. - Added to focus on students' collaboration skills GC.7.c.- Added to focus on students' collaboration skills

Grade 9 – Grade 12				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.1.a. Explore and document how systems theory includes the concepts of system dynamics, systems thinking and computational thinking. DT.1.b. Discuss how the design process builds on the core concepts of technology, including the relationship between systems. DT.2.a. Evaluate a design solution using conceptual, physical, digital and mathematical models at various intervals of the design process in order to check for proper design and note areas where improvements are needed (e.g., check the design solutions against criteria and constraints). DT.2.b. Implement, document and present the design process as applied to a particular product, process or problem. DT.3.a. Evaluate a technological problem that has benefited from a multidisciplinary approach. DT.3.b. Locate and evaluate past predictions about the development of technology. DT.3.c. Describe techniques for making decisions about the future development of technology. DT.3.d. Analyze the interactions within systems and between systems. DT.3.e. Apply systems thinking to solve a complex problem.	**Innovative Designer (ID)**	ID.4.a. Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems. ID.4.b. Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks. ID.4.c. Students develop, test, and refine prototypes as part of a cyclical design process. ID.4.d. Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.	DT.1.a.- Now ID.4.a. DT.1.b. and DT.2.a.- Now ID.4.b. DT.2.b.- Now ID.4.c. DT.3.a.- Removed to make the strand broader DT.3.b.- Removed to make the strand broader DT.3.c.- Removed to make the strand broader DT.3.d.- Removed to make the strand broader DT.3.e.- Removed to make the strand broader DT.4.a.- Removed to make the strand broader DT.4.b.- Removed to make the strand broader DT.4.c.- Removed to make the strand broader DT.4.d.- Removed to make the strand broader ID.4.d. – Added as an essential skill when students are engaged in problem solving

Grade 9 – Grade 12				
2017		**2025**		**Changes and Rationale**
Design and Technology (DT)	DT.4.a. Evaluate project/product solutions and communicate observations of the entire design process results. DT.4.b. Interpret data/information related to product testing to determine revisions and modifications to a design's function and aesthetics. DT.4.c. Critically evaluate a design solution at multiple points of the design process. Consider design requirements and adjust processes and outcomes as needed. DT.4.d. Explain the interrelationship between technology, creativity and innovation.	**Computational Thinker (CT)**	CT.5.a. Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions. CT.5.b. Students 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. CT.5.c. Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving. CT.5.d. Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.	CT.5.a. -Added to broaden the skills students employ to solve problems CT.5.b. -Added to broaden the skills students employ to solve problems CT.5.c. -Added to broaden the skills students employ to solve problems CT.5.d. -Added to broaden the skills students employ to solve problems