

Ohio's Learning Standards for Technology



February 2025



Department of
Education &
Workforce

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Introduction to Ohio's Learning Standards for Technology

Rationale

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 ISTE Standards have been used, studied, and updated for over 20 years to reflect the latest research-based best practices that define success in using technology to learn, teach, lead, and coach.

Philosophy of Ohio's Learning Standards: Technology

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.

What Ohio's Learning Standards for Technology Do

Ohio's Learning Standards for Technology:

- Balance knowledge, conceptual understanding, and skill development;
- Address significant understandings that are the basis for students to make sound technological decisions;
- Focus on important topics in technology; and
- Represent a progression across grade bands.

Artificial Intelligence (AI)

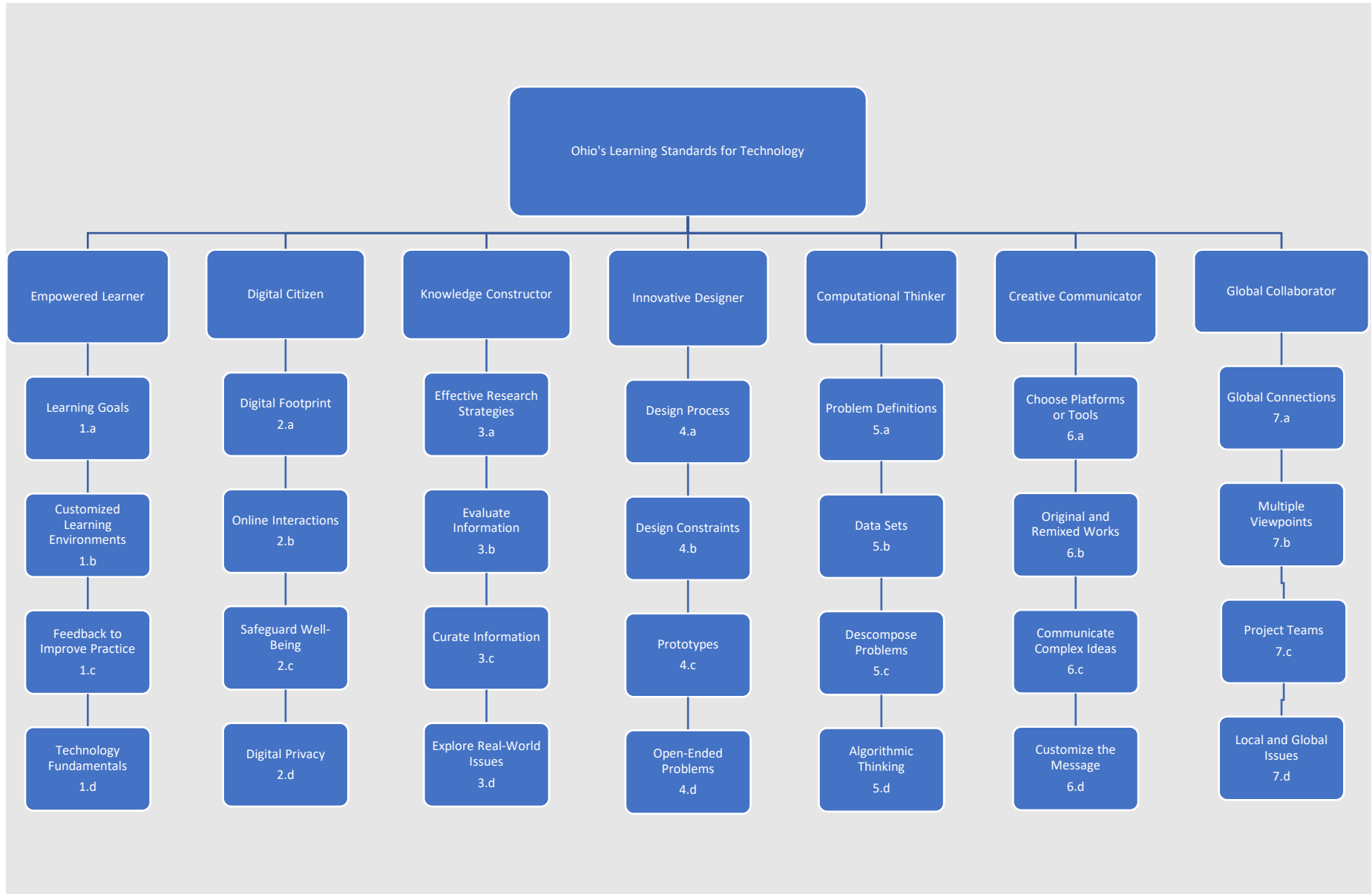
AI is not specifically mentioned in the ISTE student standards due to the dynamic and evolving nature of technology. Rather than developing AI-specific indicators, ISTE decided to identify key skills for using AI safely, responsibly, and innovatively and updated select indicators accordingly. The standards focus on providing a framework for effective technology integration, empowering learners through technology, developing digital citizenship, and promoting meaningful, digital-age learning experiences. The ISTE standards are designed to be broad and adaptable to various technological advancements to ensure their relevance over time. By emphasizing broader concepts related to technology integration, critical thinking, collaboration, communication, creativity, and digital citizenship, the ISTE standards remain applicable to a wide range of technological tools and innovations, including AI, without becoming outdated quickly.

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.

Organization of the Grade Band Standards



The technology standards emphasize the skills and qualities we want for students, enabling them to engage and thrive in a connected, digital world. The standards are designed for use by educators across the curriculum with every age student, with a goal of cultivating these skills throughout a student's academic career. Both students and teachers will be responsible for achieving foundational technology skills to fully apply the standards. The reward, however, will be educators who skillfully mentor and inspire students to amplify learning with technology and challenge them to be agents of their learning.



Strands are overarching ideas and provide seven functional and aspirational roles for students in kindergarten through grade 12 to consider and engage with technology.

Content Statement indicators further refine the topic statements to define what students should know and be able to do at each grade band.

These standards do not dictate curriculum or teaching methods. For example, while indicator A appears before indicator B in the standards for a given grade band, teachers do not need to teach indicator A before indicator B. A teacher might prefer to teach indicator A before indicator B or might choose to highlight connections by teaching indicator A and indicator B at the same time.

For example, the abbreviation 6-8.KC.1.a refers to grade band 6-8, Strand Knowledge Constructor, Content Statement indicator a.

Strand Descriptions

1. **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.
2. **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.
3. **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.
4. **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.
5. **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.
6. **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.
7. **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.

Kindergarten - Grade 2

1. EMPOWERED LEARNER

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

- K-2.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.
- K-2.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 environments personal and select resources from those available to enhance their learning.
- K-2.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.
- K-2.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.

2. DIGITAL CITIZEN

Students recognize the responsibilities and opportunities for contributing to their digital communities, including making safe, legal, and ethical decisions using Artificial Intelligence.

- K-2.DC.2.a.** Students practice responsible use of technology through teacher-guided online activities and interactions to understand how digital space impacts their lives.
- K-2.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.
- K-2.DC.2.c.** With guidance from an educator, students learn about ownership and sharing of information and how to respect the work of others.
- K-2.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.

3. KNOWLEDGE CONSTRUCTOR

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.

- K-2.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.
- K-2.KC.3.b.** With guidance from an educator, students become familiar with age-appropriate criteria for evaluating digital content.
- K-2.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.
- K-2.KC.3.d.** With guidance from an educator, students explore real-world issues and problems and share their ideas about them with others.

4. INNOVATIVE DESIGNER

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions.

- K-2.ID.4.a.** With guidance from an educator, students ask questions, suggest solutions, test ideas to solve problems, and share their learning.
- K-2.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.
- K-2.ID.4.c.** Students use a design process to develop ideas or creations and test their designs and redesign them if necessary.
- K-2.ID.4.d.** Students demonstrate perseverance when working to complete a challenging task.

5. COMPUTATIONAL THINKER

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

- K-2.CT.5.a.** With guidance from an educator, students identify a problem and select appropriate technology tools to explore and find solutions.
- K-2.CT.5.b.** With guidance from an educator, students analyze age-appropriate data and look for similarities to identify patterns and categories.
- K-2.CT.5.c.** With guidance from an educator, students break a problem into parts and identify ways to solve the problem.
- K-2.CT.5.d.** Students understand how technology makes a task easier or repeatable and can identify real-world examples.

6. CREATIVE COMMUNICATOR

Students communicate clearly and express themselves creatively for a variety of purposes, such as AI prompt engineering, using platforms, tools, styles, formats, and digital media appropriate to their goals.

- K-2.CC.6.a.** With guidance from an educator, students choose different tools for creating something new or for communicating with others.
- K-2.CT.6.b.** Students use digital tools to create original works.
- K-2.CT.6.c.** With guidance from an educator, students share ideas in multiple ways — visual, audio, etc.
- K-2.CT.6.d.** With guidance from an educator, students select technology to share their ideas with different people.

7. GLOBAL COLLABORATOR

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

- K-2.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.
- K-2.GC.7.b.** With guidance from an educator, students use technology to communicate with others and to look at problems from different perspectives.
- K-2.GC.7.c.** With guidance from an educator, students take on different team roles and use age-appropriate technologies to complete projects.
- K-2.GC.7.d.** With guidance from an educator, students use age-appropriate technologies to work together to understand problems and suggest solutions.

Grade 3 – Grade 5

1. EMPOWERED LEARNER

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

- 3-5.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.
- 3-5.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.
- 3-5.EL.1.c.** Students seek feedback from both people and features embedded in digital tools and use age-appropriate technology to share learning.
- 3-5.EL.1.d.** Students explore age-appropriate technologies and begin to transfer their learning to different tools or learning environments.

2. DIGITAL CITIZEN

Students recognize the responsibilities and opportunities for contributing to their digital communities, including making safe, legal, and ethical decisions using Artificial Intelligence.

- 3-5.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.
- 3-5.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.
- 3-5.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.
- 3-5.DC.2.d.** Students demonstrate an understanding of what personal data is, how to keep it private, and how it might be shared online.

3. KNOWLEDGE CONSTRUCTOR

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.

- 3-5.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.
- 3-5.KC.3.b.** Students learn how to evaluate sources for accuracy, perspective, credibility, and relevance.
- 3-5.KC.3.c.** Using a variety of strategies, students organize information and make meaningful connections between resources.
- 3-5.KC.3.d.** Students explore real-world problems and issues and collaborate with others to find answers or solutions.

4. INNOVATIVE DESIGNER

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions.

- 3-5.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.
- 3-5.ID.4.b.** Students use digital and non-digital tools to plan and manage a design process.
- 3-5.ID.4.c.** Students engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays.
- 3-5.ID.4.d.** Students demonstrate perseverance when working with open-ended problems.

5. COMPUTATIONAL THINKER

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

- 3-5.CT.5.a.** Students explore or solve problems by selecting technology for data analysis, modeling, and algorithmic thinking, with guidance from an educator.
- 3-5.ID.5.b.** Students select effective technology to represent data.
- 3-5.ID.5.c.** Students break down problems into smaller parts, identify key information, and propose solutions.
- 3-5.ID.5.d.** Students understand and explore basic concepts related to automation, patterns, and algorithmic thinking.

6. CREATIVE COMMUNICATOR

Students communicate clearly and express themselves creatively for a variety of purposes, such as AI prompt engineering, using platforms, tools, styles, formats, and digital media appropriate to their goals.

- 3-5.CC.6.a.** Students recognize and utilize the features and functions of a variety of creation or communication tools.
- 3-5.CC.6.b.** Students create original works and learn strategies for remixing or repurposing to create new artifacts.
- 3-5.CC.6.c.** Students create digital artifacts to communicate ideas visually and graphically.
- 3-5.CC.6.d.** Students learn about audiences and consider their expected audience when creating digital artifacts and presentations.

7. GLOBAL COLLABORATOR

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

- 3-5.GC.7.a.** Students use digital tools to work with friends and people from different backgrounds or cultures.
- 3-5.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.
- 3-5.GC.7.c.** Students perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem.
- 3-5.GC.7.d.** Students work with others using collaborative technologies to explore local and global issues.

Grade 6 – Grade 8

1. EMPOWERED LEARNER

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

- 6-8.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.
- 6-8.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.
- 6-8.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.
- 6-8.EL.1.d.** Students are able to navigate a variety of technologies and transfer their knowledge and skills to learn how to use new technologies.

2. DIGITAL CITIZEN

Students recognize the responsibilities and opportunities for contributing to their digital communities, including making safe, legal, and ethical decisions using Artificial Intelligence.

- 6-8.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.
- 6-8.DC.2.b.** Students demonstrate and advocate for positive, safe, legal, and ethical habits when using technology and when interacting with others online.
- 6-8.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.
- 6-8.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.

3. KNOWLEDGE CONSTRUCTOR

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.

- 6-8.KC.3.a.** Students demonstrate and practice the ability to effectively use research strategies to locate appropriate digital resources in support of their learning.
- 6-8.KC.3.b.** Students practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility, and relevance.
- 6-8.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.
- 6-8.KC.3.d.** Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.

4. INNOVATIVE DESIGNER

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions.

- 6-8.ID.4.a.** Students engage in a design process and employ it to generate ideas, create innovative products, or solve authentic problems.
- 6-8.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.
- 6-8.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.
- 6-8.ID.4.d.** Students demonstrate the ability to persevere and handle greater ambiguity as they work to solve open-ended problems.

5. COMPUTATIONAL THINKER

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

- 6-8.CT.5.a.** Students practice defining problems to solve by computing for data analysis, modeling, or algorithmic thinking.
- 6-8.CT.5.b.** Students find or organize data and use technology to analyze and represent it to solve problems and make decisions.
- 6-8.CT.5.c.** Students break problems into component parts, identify key pieces, and use that information to problem-solve.
- 6-8.CT.5.d.** Students demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions.

6. CREATIVE COMMUNICATOR

Students communicate clearly and express themselves creatively for a variety of purposes, such as AI prompt engineering, using platforms, tools, styles, formats, and digital media appropriate to their goals.

- 6-8.CC.6.a.** Students select appropriate platforms and tools to create, share, and communicate their work effectively.
- 6-8.CC.6.b.** Students create original works or responsibly repurpose other digital resources into new creative works.
- 6-8.CC.6.c.** Students communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, etc.
- 6-8.CC.6.d.** Students publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences.

7. GLOBAL COLLABORATOR

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

- 6-8.GC.7.a.** Students use digital tools to interact with others to develop a richer understanding of different perspectives and cultures.
- 6-8.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.
- 6-8.GC.7.c.** Students determine their role in a team to meet goals, based on their knowledge of technology and content and personal preference.
- 6-8.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.

Grade 9- Grade 12

1. EMPOWERED LEARNER

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

- 9-12.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.
- 9-12.EL.1.b.** Students build networks and customize their learning environments in ways that support the learning process.
- 9-12.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.
- 9-12.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.

2. DIGITAL CITIZEN

Students recognize the responsibilities and opportunities for contributing to their digital communities, including making safe, legal, and ethical decisions using Artificial Intelligence.

- 9-12.DC.2.a.** Students manage their digital identity, understand the lasting impact of their online behaviors on themselves and others, and make safe, legal, and ethical decisions in the digital world.
- 9-12.DC.2.b.** Students demonstrate empathetic, inclusive interactions online and use technology to contribute responsibly to their communities.
- 9-12.DC.2.c.** Students safeguard their well-being by being intentional about what they do online and how much time they spend online.
- 9-12.DC.2.d.** Students take action to protect their digital privacy on devices and manage their personal data and security while online.

3. KNOWLEDGE CONSTRUCTOR

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.

- 9-12.KC.3.a.** Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.
- 9-12.KC.3.b.** Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources.
- 9-12.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.
- 9-12.KC.3.d.** Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.

4. INNOVATIVE DESIGNER

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions.

- 9-12.ID.4.a.** Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.
- 9-12.ID.4.b.** Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
- 9-12.ID.4.c.** Students develop, test, and refine prototypes as part of a cyclical design process.
- 9-12.ID.4.d.** Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.

5. COMPUTATIONAL THINKER

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

- 9-12.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.
- 9-12.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.
- 9-12.CT.5.c.** Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
- 9-12.CT.5.d.** Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

6. CREATIVE COMMUNICATOR

Students communicate clearly and express themselves creatively for a variety of purposes, such as AI prompt engineering, using platforms, tools, styles, formats, and digital media appropriate to their goals.

- 9-12.CC.6.a.** Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
- 9-12.CC.6.b.** Students create original works or responsibly repurpose or remix digital resources into new creations.
- 9-12.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.
- 9-12.CC.6.d.** Students publish or present content that customizes the message and medium for their intended audiences.

7. GLOBAL COLLABORATOR

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

- 9-12.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.
- 9-12.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.
- 9-12.GC.7.c.** Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- 9-12.GC.7.a.** Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Standards Organized by Strand

This section provides the standards organized by strand and topic. This structure gives a better view of how the content statements progress from one grade band to the next. (The content statements are the same as those provided in the previous section, only the layout is different.)

Empowered Learner

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.			
K-2.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. K-2.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. K-2.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. K-2.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.	3-5.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. 3-5.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. 3-5.EL.1.c. Students seek feedback from both people and features embedded in digital tools and use age-appropriate technology to share learning. 3-5.EL.1.d. Students explore age-appropriate technologies and begin to transfer their learning to different tools or learning environments.	6-8.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. 6-8.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. 6-8.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. 6-8.EL.1.d. Students can navigate a variety of technologies and transfer their knowledge and skills to learn how to use new technologies.	9-12.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. 9-12.EL.1.b. Students build networks and customize their learning environments in ways that support the learning process. 9-12.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. 9-12.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.

Digital Citizen

Students recognize the responsibilities and opportunities for contributing to their digital communities, including making safe, legal, and ethical decisions using Artificial Intelligence.

K-2.DC.2.a. Students practice responsible use of technology through teacher-guided online activities and interactions to understand how digital space impacts their lives. K-2.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. K-2.DC.2.c. With guidance from an educator, students learn about ownership and sharing of information and how to respect the work of others. K-2.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.	3-5.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. 3-5.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. 3-5.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. 3-5.DC.2.d. Students demonstrate an understanding of what personal data is, how to keep it private, and how it might be shared online.	6-8.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. 6-8.DC.2.b. Students demonstrate and advocate for positive, safe, legal, and ethical habits when using technology and when interacting with others online. 6-8.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. 6-8.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.	9-12.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. 9-12.DC.2.b. Students demonstrate empathetic, inclusive interactions online and use technology to responsibly contribute to their communities. 9-12.DC.2.c. Students safeguard their well-being by being intentional about what they do online and how much time they spend online. 9-12.DC.2.d. Students take action to protect their digital privacy on devices and manage their personal data and security while online.
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Knowledge Constructor

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.

K-2.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. K-2.KC.3.b. With guidance from an educator, students become familiar with age-appropriate criteria for evaluating digital content. K-2.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. K-2.KC.3.d. With guidance from an educator, students explore real-world issues and problems and share their ideas about them with others.	3-5.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. 3-5.KC.3.b. Students learn how to evaluate sources for accuracy, perspective, credibility, and relevance. 3-5.KC.3.c. Using a variety of strategies, students organize information and make meaningful connections between resources. 3-5.KC.3.d. Students explore real-world problems and issues and collaborate with others to find answers or solutions.	6-8.KC.3.a. Students demonstrate and practice the ability to effectively use research strategies to locate appropriate digital resources in support of their learning. 6-8.KC.3.b. Students practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility, and relevance. 6-8.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. 6-8.KC.3.d. Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.	9-12.KC.3.a. Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits. 9-12.KC.3.b. Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources. 9-12.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. 9-12.KC.3.d. Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.
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Innovative Designer

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions.

K-2.ID.4.a. With guidance from an educator, students ask questions, suggest solutions, test ideas to solve problems, and share their learning.

K-2.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.

K-2.ID.4.c. Students use a design process to develop ideas or creations and test their designs and redesign them if necessary.

K-2.ID.4.d. Students demonstrate perseverance when working to complete a challenging task.

3-5.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.

3-5.ID.4.b. Students use digital and non-digital tools to plan and manage a design process.

3-5.ID.4.c. Students engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays.

3-5.ID.4.d. Students demonstrate perseverance when working with open-ended problems.

6-8.ID.4.a. Students engage in a design process and employ it to generate ideas, create innovative products, or solve authentic problems.

6-8.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.

6-8.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.

6-8.ID.4.d. Students demonstrate an ability to persevere and handle greater ambiguity as they work to solve open-ended problems.

9-12.ID.4.a. Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.

9-12.ID.4.b. Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

9-12.ID.4.c. Students develop, test, and refine prototypes as part of a cyclical design process.

9-12.ID.4.d. Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.

Computational Thinker

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

K-2.CT.5.a. With guidance from an educator, students identify a problem and select appropriate technology tools to explore and find solutions.

K-2.CT.5.b. With guidance from an educator, students analyze age-appropriate data and look for similarities to identify patterns and categories.

K-2.CT.5.c. With guidance from an educator, students break a problem into parts and identify ways to solve the problem.

K-2.CT.5.d. Students understand how technology is used to make a task easier or repeatable and can identify real-world examples.

3-5.CT.5.a. Students explore or solve problems by selecting technology for data analysis, modeling, and algorithmic thinking, with guidance from an educator.

3-5.CT.5.b. Students select effective technology to represent data.

3-5.CT.5.c. Students break down problems into smaller parts, identify key information, and propose solutions.

3-5.CT.5.d. Students understand and explore basic concepts related to automation, patterns, and algorithmic thinking.

6-8.CT.5.a. Students practice defining problems to solve by computing for data analysis, modeling, or algorithmic thinking.

6-8.CT.5.b. Students find or organize data and use technology to analyze and represent it to solve problems and make decisions.

6-8.CT.5.c. Students break problems into component parts, identify key pieces, and use that information to problem-solve.

6-8.CT.5.d. Students demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions.

9-12.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.

9-12.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.

9-12.CT.5.c. Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

9-12.CT.5.d. Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Creative Communicator

Students communicate clearly and express themselves creatively for a variety of purposes, such as AI prompt engineering, using platforms, tools, styles, formats, and digital media appropriate to their goals.

K-2.CC.6.a. With guidance from an educator, students choose different tools for creating something new or for communicating with others. K-2.CC.6.b. Students use digital tools to create original works. K-2.CC.6.c. With guidance from an educator, students share ideas in multiple ways — visual, audio, etc. K-2.CC.6.d. With guidance from an educator, students select technology to share their ideas with different people.	3-5.CC.6.a. Students recognize and utilize the features and functions of a variety of creation or communication tools. 3-5.CC.6.b. Students create original works and learn strategies for remixing or repurposing to create new artifacts. 3-5.CC.6.c. Students create digital artifacts to communicate ideas visually and graphically. 3-5.CC.6.d. Students learn about audiences and consider their expected audience when creating digital artifacts and presentations.	6-8.CC.6.a. Students select appropriate platforms and tools to create, share, and communicate their work effectively. 6-8.CC.6.b. Students create original works or responsibly repurpose other digital resources into new creative works. 6-8.CC.6.c. Students communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, etc. 6-8.CC.6.d. Students publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences.	9-12.CC.6.a. Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication. 9-12.CC.6.b. Students create original works or responsibly repurpose or remix digital resources into new creations. 9-12.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. 9-12.CC.6.d. Students publish or present content that customizes the message and medium for their intended audiences.
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Global Collaborator

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

K-2.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.

K-2.GC.7.b. With guidance from an educator, students use technology to communicate with others and to look at problems from different perspectives.

K-2.GC.7.c. With guidance from an educator, students take on different team roles and use age-appropriate technologies to complete projects.

K-2.GC.7.d. With guidance from an educator, students use age-appropriate technologies to work together to understand problems and suggest solutions.

3-5.GC.7.a. Students use digital tools to work with friends and people from different backgrounds or cultures.

3-5.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.

3-5.GC.7.c. Students perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem.

3-5.GC.7.d. Students work with others using collaborative technologies to explore local and global issues.

6-8.GC.7.a. Students use digital tools to interact with others to develop a richer understanding of different perspectives and cultures.

6-8.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.

6-8.GC.7.c. Students determine their role in a team to meet goals based on their knowledge of technology and content and personal preference.

6-8.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.

9-12.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.

9-12.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.

9-12.GC.7.c. Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

9-12.GC.7.d. Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Acknowledgments

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The Stakeholder Group provided partnership, direction, and guidance for Ohio's Learning Standards for Technology. The individuals and organizations recognized in the following pages were critical in the adoption of the standards.

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