Design Technology
AY 24-25

STRAND	STANDARDS/SKILLS (International Society for Technology in Education – ISTE)		5th	6th	7th	8th
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.	1.1a Learning Goals Students set learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process to improve learning outcomes.	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.	With guidance, develop personal learning goals, explore and experiment with different technology tools to achieve them, and begin to reflect on progress, identifying successes and areas for growth.	Set learning goals, evaluate and select appropriate technology tools to support goal achievement, and reflect on progress by identifying strategies that worked well and areas that require improvement.	Independently, 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.
		1.1b Customized Learning Environments Students build networks and customize their learning environments in ways that support the learning process.	Build a network of experts and peers within school policy and customize their environments to enhance their learning, with the oversight and support of an educator.	With guidance, explore and develop online networks within school policy, and begin to personalize learning environments with educator support to enhance learning.	Engage with online networks within school policy and refine their learning environments to better support their learning, with educator support.	Independently identify and develop online networks within school policy and customize their learning environments in ways that support their learning, in collaboration with an educator.
		1.1c Feedback to Improve Practice Students use technology to seek feedback that informs	Seek feedback from both people and features embedded in digital tools	With guidance, use feedback from people and embedded digital tool features to	Seek feedback from both people and embedded digital tools to refine their	Actively and independently seek performance feedback from people,

		and improves their practice and to demonstrate their learning in a variety of ways.	and use age-appropriate technology to share learning.	improve their learning process, and begin selecting technology tools to share their learning in different ways.	learning and make intentional choices about technology tools to demonstrate their learning with educator input.	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.
		1.1d Technology Fundamentals Students understand fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring emerging technologies.	Explore age-appropriate technologies and begin to transfer their learning to different tools or learning environments.	With guidance, navigate a variety of technologies and apply previously learned skills to new tools or learning environments.	Adapt to different technologies and transfer their knowledge and skills to explore new tools, with educator support as needed.	Independently be able to navigate a variety of technologies and transfer their knowledge and skills to learn how to use new technologies.
Digital Citizen	Students recognize the responsibilities and opportunities for contributing to their digital communities.	1.2.a Digital Footprint 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.	Demonstrate an understanding of the role an online identity plays in the digital world and learn the permanence of their decisions when interacting online.	With guidance, develop awareness of their digital identity and reputation, and begin making responsible choices when interacting online, recognizing that digital actions have lasting effects.	Manage their digital identity within school policy, making informed decisions about their online interactions while demonstrating an understanding of the long-term impact of their digital footprint,	Independently manage their digital identities and reputations within school policy, including demonstrating an understanding of how digital actions are never fully erasable.

					with educator input.	
		1.2.b Online Interactions Students demonstrate empathetic, inclusive interactions online and use technology to responsibly contribute to their communities.	Practice and encourage others in safe, legal and ethical behavior when using technology and interacting online, with guidance from an educator.	With guidance, demonstrate safe, legal, and ethical behavior when using technology and interacting online, beginning to take responsibility for their digital actions and encouraging peers to do the same.	Apply safe, legal, and ethical practices when using technology and interacting online, making informed choices and promoting responsible digital behavior with educator input.	Independently demonstrate and advocate for positive, safe, legal and ethical habits when using technology and when interacting with others online.
		1.2.c Safeguard Well-being Students safeguard their well-being by being intentional about what they do online and how much time they spend online.	Learn about, demonstrate and encourage respect for intellectual property with both print and digital media when using and sharing the work of others.	With guidance, apply an understanding of intellectual property, including copyright, permission, and fair use, by properly citing and attributing sources when using and sharing print and digital media.	Demonstrate respect for intellectual property by consistently applying copyright, permission, and fair use principles when creating and sharing media, with educator input.	Independently 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.
		1.2.d Digital Privacy Students take action to protect their digital privacy on devices and	Demonstrate an understanding of what personal data is, how to keep	With guidance, explain what personal data is, how to protect it online, and	Apply strategies to keep personal data private and secure, demonstrating	Independently demonstrate an understanding of what personal data is and how to

		manage their personal data and security while online.	it private and how it might be shared online.	recognize basic security measures such as strong passwords and secure websites (HTTPS). Begin exploring how personal data can be collected and used.	an understanding of security measures such as encryption, passwords, and cookies. With educator input, explore how data-collection technologies function and their implications.	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.
Knowledge Constructor	Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.	1.3.a Effective Research Strategies Students use effective research strategies to find resources that support their learning needs, personal interests and creative pursuits.	Collaborate with a teacher to employ appropriate research techniques to locate digital resources that will help them in their learning process.	With guidance, apply research strategies to find reliable digital resources, beginning to evaluate their credibility and relevance to their learning.	Utilize research strategies to locate and assess digital resources for credibility, accuracy, and relevance, with educator input.	Independently demonstrate and practice the ability to effectively utilize research strategies to locate appropriate digital resources in support of their learning.
		1.3.b Evaluate Information Students evaluate the accuracy, validity, bias, origin, and relevance of digital content.	Learn how to evaluate sources for accuracy, perspective, credibility and relevance.	With guidance, apply strategies to evaluate digital resources for accuracy, perspective, credibility, and relevance, identifying potential bias or misinformation.	Assess digital resources for accuracy, perspective, credibility, and relevance, refining their ability to distinguish between reliable and unreliable sources, with educator input.	Independently practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility, and relevance.

		1.3.c Curate Information Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.	Using a variety of strategies to organize information and make meaningful connections between resources.	With guidance, locate and collect resources from different sources and begin organizing them using appropriate digital tools to support their learning.	Gather and categorize resources from multiple sources, using digital tools to organize assets effectively for different learning tasks, with educator input.	Independently locate and collect resources from a variety of sources and organize assets into collections for a wide range of projects and purposes.
		1.3.d Explore Real-World Issues Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.	Explore real-world problems and issues and collaborate with others to find answers or solutions.	With guidance, explore real-world problems and issues, and begin to actively investigate potential solutions, while collaborating with peers and seeking information from various sources.	Explore real-world issues and problems, analyze potential solutions, and work collaboratively with others to pursue a deeper understanding and possible solutions, with educator input.	Independently explore real-world issues and problems and actively pursue an understanding of them and solutions for them.
Innovative Designer	Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.	1.4.a Design Process Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.	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.	With guidance, engage in a design process to generate ideas, consider possible solutions, and plan how to create innovative products or solve problems, refining and iterating	Engage in a design process, generating ideas, analyzing solutions, and creating innovative products or solving problems, while reflecting on and refining the process with educator input.	Independently engage in a design process and employ it to generate ideas, create innovative products or solve authentic problems.

				through the process.		
		1.4.b Design Constraints Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.	Use digital and non-digital tools to plan and manage a design process.	With guidance, select and use appropriate digital tools to support a design process, beginning to recognize the constraints, trade-offs, and risks involved.	Select and use digital tools to support a design process, while considering the constraints, trade-offs, and risks involved, with periodic educator input.	Independently select and use digital tools to support a design process and expand their understanding to identify constraints and trade-offs and to weigh risks.
		1.4.c Prototypes Students develop, test and refine prototypes as part of a cyclical design process.	Engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays.	With guidance, apply a design process to develop, test, and refine prototypes, recognizing how trial and error can lead to improvement.	Engage in a design process to develop, test, and revise prototypes, analyzing failures as opportunities for refinement and improvement, with educator input.	Independently 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.
		1.4.d Open-Ended Problems Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems	Demonstrate perseverance when working with open-ended problems.	With guidance, demonstrate perseverance by exploring multiple approaches to solving open-ended problems, beginning to navigate uncertainty and adjust strategies as needed.	Apply perseverance when solving open-ended problems, managing ambiguity and refining their approaches with educator input.	Independently demonstrate an ability to persevere and handle greater ambiguity as they work to solve 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	1.5.a Problem Definitions Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.	Explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking, with guidance from an educator.	With guidance, define problems and begin using technology to analyze data, create models, and apply algorithmic thinking to explore possible solutions.	Define problems and apply data analysis, modeling, and algorithmic thinking to develop potential solutions, with educator input.	Independently practice defining problems to solve by computing for data analysis, modeling or algorithmic thinking.
		1.5.b Data Sets 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.	Select effective technology to represent data.	With guidance, find and organize data, then use technology to represent it in meaningful ways to support problem-solving and decision-making.	Collect, organize, and analyze data using technology, refining how it is represented to enhance understanding and decision-making, with educator input.	Independently find or organize data and use technology to analyze and represent it to solve problems and make decisions.
		1.5.c Decompose Problems Students break problems into component parts, extract key information and develop descriptive models to understand complex systems or facilitate problem-solving.	Break down problems into smaller parts, identify key information and propose solutions.	With guidance, break problems into component parts, analyze key information, and explore multiple possible solutions.	Deconstruct problems into component parts, assess key information, and apply logical reasoning to develop and refine solutions, with educator input.	Independently break problems into component parts, identify key pieces and use that information to problem solve.

		1.5.d Algorithmic Thinking Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.	Understand and explore basic concepts related to automation, patterns and algorithmic thinking.	With guidance, apply algorithmic thinking to recognize patterns and begin designing simple automated solutions.	Use algorithmic thinking to create and refine automated solutions, understanding how automation improves efficiency, with educator input.	Independently demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions.
Creative Communicator	Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.	1.6.a Choose Platforms or Tools Students choose the appropriate platforms and digital tools for meeting the desired objectives of their creation or communication.	Students explore and identify various digital tools, using teacher-selected platforms to create and share simple projects.	Students compare digital tools, begin independently selecting appropriate ones for tasks, and collaborate using digital platforms.	Students evaluate and justify their choice of digital tools based on purpose and audience, integrating multiple tools for effective communication.	Students strategically select, combine, and refine digital tools to enhance communication, considering impact, audience, and feedback.
		1.6.b Original and Remixed Works Students create original works or responsibly repurpose or remix digital resources into new creations.	Students create original digital works using basic tools and responsibly modify existing resources with teacher guidance.	Students combine and modify digital resources to create original works while understanding basic copyright and attribution principles.	Students remix and adapt digital content creatively, applying ethical considerations and proper attribution.	Students produce complex original works by strategically repurposing and integrating digital resources while demonstrating a strong understanding of copyright and fair use.
		1.6.c Communicate Complex Ideas Students use digital tools to visually	Students use basic digital tools to create simple visual representations of ideas, such as charts,	Students select appropriate digital tools to organize and present information visually,	Students design visually engaging digital presentations, incorporating multiple	Students strategically integrate advanced visual tools and design principles to

		communicate complex ideas to others.	drawings, or slideshows.	enhancing clarity and audience understanding.	elements (e.g., images, infographics, animations) to communicate complex ideas effectively.	create polished, professional-quality digital communications tailored to specific audiences.
		1.6.d Customize the Message Students publish or present content that customizes the message and medium for their intended audiences.	Students create and share digital content using basic tools, considering the audience with teacher guidance.	Students choose appropriate digital formats to present information, adjusting content to suit different audiences.	Students refine their messages by tailoring language, visuals, and digital platforms to effectively engage specific audiences.	Students strategically customize both message and medium, ensuring clarity, impact, and audience engagement in professional-quality digital presentations.
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.	1.7.a Global Connections Students use digital tools to connect with peers from a variety of backgrounds recognizing diverse viewpoints and broadening mutual understanding.	Use digital tools to work with friends and people from different backgrounds or cultures.	With guidance, use digital tools to collaborate with others from diverse backgrounds and begin exploring different perspectives through digital interactions.	Use digital tools to engage with people from diverse backgrounds, actively seeking to understand and appreciate different perspectives and cultures, with educator input.	Independently use digital tools to interact with others to develop a richer understanding of different perspectives and cultures.
		1.7.b Multiple Viewpoints Students use collaborative technologies to work with others, including peers, experts and community members, to examine issues and	Use collaborative technologies to connect with others, including peers, experts and community members, to explore different points of view on various topics.	With guidance, use collaborative technologies to engage with peers, experts, and community members, beginning to investigate issues and problems from	Use collaborative technologies to connect with others, including peers, experts, and community members, to discuss issues, analyze problems, and develop a	Independently use collaborative technologies to connect with others, including peers, experts and community members, to learn about issues and problems or to

		problems from multiple viewpoints.		multiple perspectives.	broader perspective, with educator input.	gain broader perspective.
		1.7.c Project Teams Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.	Perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem.	With guidance, identify and take on different roles within a team, using technology to collaborate effectively and contribute to achieving a shared goal.	Select and adapt their role within a team based on their strengths, knowledge of technology, and project needs, with educator input.	Independently determine their role on a team to meet goals, based on their knowledge of technology and content, as well as personal preference.
		1.7.d Local and Global Issues Students explore local and global issues, and use collaborative technologies to work with others to investigate solutions.	Work with others using collaborative technologies to explore local and global issues.	With guidance, use collaborative technologies to engage with others in discussing and researching local and global issues, beginning to consider possible solutions.	Use collaborative technologies to work with others in analyzing local and global issues, actively contributing to discussions and exploring potential solutions, with educator input.	Independently select collaborative technologies and use them to work with others to investigate and develop solutions related to local and global issues.