

Seven Strands for Advancing Digital Age Learning - (3, 4, 5)

ISTE-S (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.
1.1. Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.	1.1.1. Describe how to write a goal. 1.1.2. Choose a goal that interests you. 1.1.3. Use technology to demonstrate that goal. 1.1.4. Use technology to receive feedback from classmates in order to improve learning.
1.2. Build networks and customize their learning environments in ways that support the learning process.	1.2.1. Students learn to engage in positive, safe, legal and ethical behavior when using technology. 1.2.2. Model online Netiquette when participating in online social interactions or when using networked devices. 1.2.3. Demonstrate how to share learning opportunities with others.
1.3. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.	1.3.1. Students are able to transfer their knowledge to explore emerging technologies. 1.3.2. Students behave positively when using technology. 1.3.3. Students use learning based software that reinforces classroom curriculum. 1.3.4 Use software that gives students immediate feedback so that real-time corrections can be made by students.
1.4. Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.	1.4.1. Demonstrate how a current technology works. 1.4.2. Learn to troubleshoot problems that arise. 1.4.3. Research new technologies and describe the purpose of one new technology. 1.4.4. Draw a plan of a new technology that could be used in the future.

<p style="text-align: center;">ISTE – S (2) Digital Citizen</p>	<p>Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.</p>
<p>2.1. Cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.</p>	<p>2.1.1. Explain how to use a password. 2.1.2. Discuss why passwords shouldn't be shared. 2.1.3. Discuss how you feel when someone sends you a mean email message. 2.1.4. Explain what you should do if you receive a mean email.</p>
<p>2.2. Engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.</p>	<p>2.2.1. Describe what it means to behave positively when using technology. 2.2.2. List ways to stay safe when using technology. 2.2.3. Discuss why it is important not to send mean or hurtful email to a classmate. 2.2.4. Explain what you should do if you receive an email for someone you don't know.</p>
<p>2.3. Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p>	<p>2.3.1. Explain why it's not acceptable to use someone else's work that is posted on the Internet without their permission. 2.3.2. Describe how a citation is used. 2.3.3. Research a topic and write a summary that includes a citation.</p>
<p>2.4. Manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.</p>	<p>2.4.1. Explain why you have to update your devices. 2.4.2. Research and describe what two-factor authentication is. 2.4.3. Learn how to turn on and off permissions on devices.</p>

<p align="center">ISTE-S (3) Knowledge Constructor</p>	<p>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.</p>
<p>3.1. Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.</p>	<p>3.1.1. Name places where you can find information. 3.1.2. Explain how to find a topic in a paper library. 3.1.3. Explain how to find a topic in a digital library. 3.1.4. Choose a topic to research. 3.1.5. Locate topic information and resources.</p>
<p>3.2. Evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.</p>	<p>3.2.1. Use information from multiple resources. 3.2.2. Evaluate information to determine if it relates to the lesson. 3.2.3. Choose a topic and explain your perspective. 3.2.2. Take a class poll and discuss the results.</p>
<p>3.3. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.</p>	<p>3.3.1. Sort information into themes. 3.3.2. Choose and organize information from digital resources. 3.3.3. Gather information and select themes in ways that are meaningful and shareable. 3.3.4. Read the first part of a story then write a conclusion to complete the story. 3.3.5. Compare your story's ending to another classmate's story.</p>
<p>3.4. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.</p>	<p>3.4.1. Discuss and provide examples of current events. 3.4.2. Locate a resource that reports the details of a current event. 3.4.3. Make suggestions how to resolve a real-world problem that happened recently.</p>

<p style="text-align: center;">ISTE-S (4) Innovative Designer</p>	<p>Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.</p>
<p>4.1. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.</p>	<p>4.1.1. Use a series of steps to solve a problem 4.1.2. Design a solution. 4.1.3. Test the solution to determine if it's sound. 4.1.4. Amend and repeat process if solution doesn't work. 4.1.5. Apply learned knowledge to solve other problems.</p>
<p>4.2. Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.</p>	<p>4.2.1. Make artifacts created by new methods, original thinking or improvements to an existing artifact. 4.2.2.. Explore 3D printing, computer programs, robotics, simulations, virtual representations, prototypes, etc. as possible ways to design objects.</p>
<p>4.3. Develop, test and refine prototypes as part of a cyclical design process.</p>	<p>4.3.1. Brainstorm steps to solve a problem and design a solution. 4.3.2. Test prototype. 4.3.3. Modify prototype as needed. 4.3.4. Test prototype until problem is solved</p>
<p>4.4. Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p>	<p>4.4.1. Discuss more than one solution to a problem. 4.4.2. Explain how there can be no solution to a problem. 4.4.3. Draw a picture that demonstrates a problem and its solution. 4.4.4. Explain a problem you had and how you fixed it.</p>

<p style="text-align: center;">ISTE-S (5) Computational Thinker</p>	<p style="text-align: center;">Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.</p>
<p>5.1. Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.</p>	<p>5.1.1. Discuss what data is and how it can be used. 5.1.2. Build a model of a process using a flowchart. 5.1.3. Demonstrate how the model can be used to solve problems. 5.1.4. Create a step by step process to solve a real problem.</p>
<p>5.2. Collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making</p>	<p>5.2.1. Collect data. 5.2.2. Draw a diagram that represents the data. 5.2.3. Manipulate the data in different ways to represent a number. 5.2.4. Write a statement that supports the format you used to show the data.</p>
<p>5.3. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.</p>	<p>5.3.1. Discuss a problem. 5.3.2. Break the problem in to its parts. 5.3.3. Decide what is the problem is asking. 5.3.4. Draw a model that shows the problem. 5.3.5. Write or draw a solution for the problem.</p>
<p>5.4. Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p>	<p>5.4.1. Explain what it means to be automated. 5.4.2. Plan a step-by-step process to build an object. 5.4.3. Write the plan 5.4.4. Build the object using the plan.</p>

<p style="text-align: center;">ISTE-S (6) Creative Communicator</p>	<p>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.</p>
<p>6.1. Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.</p>	<p>6.1.1. Use a digital camera to tell a story. 6.1.2. Take pictures that will illustrate the main idea of the story. 6.1.3. Collaborate with a classmate to write the narrative for the story. 6.1.4. Present your story to the class.</p>
<p>6.2. Create original works or responsibly repurpose or remix digital resources into new creations.</p>	<p>6.2.1. Choose a topic and create a digital story. 6.2.2. Use a digital tool/software to design pictures. 6.2.3. Add sound to the story. 6.2.4. Share your work with classmates.</p>
<p>6.3. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.</p>	<p>6.3.1. Choose a topic that you know very well. 6.3.2. Write a summary of facts about the topic to communicate to classmates. 6.3.3. Choose a media tool to create a presentation, Canva, Emaze, Focusky, Google Slides, Keynote, PowToon, Prezi, SlideDog, Sway, or Visme. 6.3.4. Share the presentation with others.</p>
<p>6.4. Publish or present content that customizes the message and medium for their intended audiences.</p>	<p>6.4.1. Choose your favorite holiday. 6.4.2. Research information about that holiday. 6.4.3. Create a flyer that explains the origin of that holiday. 6.4.4. Share the flyer information with others.</p>

ISTE-S (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.
7.1. 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.	6.1.1. Use the Internet to research customs in various regions of the United States. 6.1.2. Choose a state other than Pennsylvania to research. 6.1.3. Collect information about the chosen state such as the state nick-name, state flower, state flag, etc., or other interesting facts. 6.1.4. Use presentation software to share information about the state.
7.2. Use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.	6.2.1. Identify a problem in your school or neighborhood. 6.2.2. Discuss who in your school, neighborhood, or state could help resolve the problem. 6.2.3. Make your own suggestions how to solve the problem. 6.2.4. Listen to other solutions from your classmates. 6.2.5. Choose a solution that you believe will solve the problem. 6.2.6. Write an email with details of the problem. 6.2.7. Send the email to the person who can help fix the problem.
7.3. Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.	6.3.1. Work in groups. 6.3.2. Choose a spokesperson for the group. 6.3.3. Take turns speaking. 6.3.4. Be kind when talking about someone's work. 6.3.5. Help others who need help.
7.4. Explore local and global issues and use collaborative technologies to work with others to investigate solutions.	6.4.1. Use the Internet to find a local or global issue. 6.4.2. Identify the local issue and write a sentence describing the issue. 6.4.3. Identify the global issue and write a sentence describing the issue. 6.4.4. Form teams to create a solution for the local issue. 6.4.5. Form teams to create a solution for the global issue. 6.4.6. Create a digital presentation to share your solutions.