

Computer Science and Digital Fluency Learning Standards

Standards at a Glance

Grades 4-6

Impacts of Computing



Subconcept	Standard
Society	4-6.IC.1 Describe computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.
	4-6.IC.2 Explain how laws impact the use of computing technologies and digital information.
Ethics	4-6.IC.3 Explain current events that involve computing technologies.
	4-6.IC.4 Identify public and private digital spaces.
	4-6.IC.5 Explain who has access to data in different digital spaces.
Accessibility	4-6.IC.6 Explain how computer systems play a role in human decision-making.
Career Paths	4-6.IC.7 Identify a diverse range of role models in computer science.

Computational Thinking



Subconcept	Standard
Modeling and Simulation	4-6.CT.1 Develop a computational model of a system that shows changes in output when there are changes in inputs.
Data Analysis and Visualization	4-6.CT.2 Collect digital data related to a real-life question or need.
	4-6.CT.3 Visualize a simple data set in order to highlight relationships and persuade an audience.
Abstraction and Decomposition	4-6.CT.4 Decompose a problem into smaller named tasks, some of which can themselves be decomposed into smaller steps.
	4-6.CT.5 Identify and name a task within a problem that gets performed multiple times while solving that problem, but with slightly different concrete details each time.
Algorithms and Programming	4-6.CT.6 Compare two or more algorithms and discuss the advantages and disadvantages of each for a specific task.
	4-6.CT.7 Identify pieces of information that might change as a program or process runs.
	4-6.CT.8 Develop algorithms or programs that use repetition and conditionals for creative expression or to solve a problem.
	4-6.CT.9 Explain each step of an algorithm or program that includes repetition and conditionals for the purposes of debugging.
	4-6.CT.10 Describe the steps taken and choices made to design and develop a solution using an iterative design process.

Networks & System Design



Subconcept	Standard
Hardware and Software	4-6.NSD.1 Propose improvements to the design of a computing technology based on an analysis of user interactions with that technology.
	4-6.NSD.2 Model how computer hardware and software work together as a system to accomplish tasks.
	4-6.NSD.3 Determine potential solutions to solve hardware and software problems using common troubleshooting strategies.
Networks and the Internet	4-6.NSD.4 Model how data is structured to transmit through a network.
	4-6.NSD.5 Describe that data can be stored locally or remotely in a network.

Cybersecurity



Subconcept	Standard
Risks	4-6.CY.1 Explain why different types of information might need to be protected.
Safeguards	4-6.CY.2 Describe common safeguards for protecting personal information.
	4-6.CY.3 Describe trade-offs between allowing information to be public and keeping information private and secure.
	4-6.CY.4 Model and explain the purpose of simple cryptographic methods.
Response	4-6.CY.5 Explain suspicious activity of applications and devices.

Digital Literacy



Subconcept	Standard
Digital Use	4-6.DL.1 Type on a keyboard while demonstrating proper keyboarding technique.
	4-6.DL.2 Select appropriate digital tools to communicate and collaborate while learning with others.
	4-6.DL.3 Conduct and refine advanced multi-criteria digital searches to locate content relevant to varied learning goals.
	4-6.DL.4 Use a variety of digital tools and resources to create and revise digital artifacts.
	4-6.DL.5 Identify common features of digital technologies.
Digital Citizenship	4-6.DL.6 Describe persistence of digital information and explain how actions in online spaces can have consequences.
	4-6.DL.7 Identify and describe actions in online spaces that could potentially be unsafe or harmful.