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** Explain who has access to data in different digital spaces. **4-6.IC.5** Explain how computer systems play a role in human decision-making.
Accessibility	**4-6.IC.6** Identify and explain ways to improve the accessibility/usability of a computing device/software application for the diverse needs and wants of users.
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.