Computer Science and Digital Fluency Learning Standards

Standards at a Glance Grades 7-8

Impacts of Computing

Subconcept	Standard
Society	**7-8.IC.1** Compare and contrast tradeoffs associated with computing technologies that affect individuals and society.
	7-8.IC.2 Evaluate the impact of laws or regulations on the development and use of computing technologies and digital information.
Ethics	**7-8.IC.3** Identify and discuss issues of ethics surrounding computing technologies and current events.
	7-8.IC.4 Identify and discuss issues related to the collection and use of public and private data.
	7-8.IC.5 Analyze potential sources of bias that could be introduced to complex computer systems and the potential impact of these biases on individuals.
Accessibility	**7-8.IC.6** Assess the accessibility of a computing device or software application in terms of user needs.
Career Paths	**7-8.IC.7** Explore a range of computer science-related career paths.

Computational Thinking

Subconcept	Standard
Modeling and Simulation	**7-8.CT.1** Compare the results of alternative models or simulations to determine and evaluate how the input data and assumptions change the results.
Data Analysis and Visualization	**7-8.CT.2** Collect and use digital data in a computational artifact.
	7-8.CT.3 Refine and visualize a data set in order to persuade an audience.
Abstraction and Decomposition	**7-8.CT.4** Write a program using functions or procedures whose names or other documentation convey their purpose within the larger task.
	7-8.CT.5 Identify multiple similar concrete computations in a program, then create a function to generalize over them using parameters to accommodate their differences.
Algorithms and Programming	**7-8.CT.6** Design, compare and refine algorithms for a specific task or within a program.
	7-8.CT.7 Design or remix a program that uses a variable to maintain the current value of a key piece of information.
	7-8.CT.8 Develop or remix a program that effectively combines one or more control structures for creative expression or to solve a problem.
	7-8.CT.9 Read and interpret code to predict the outcome of various programs that involve conditionals and repetition for the purposes of debugging.
	7-8.CT.10 Document the iterative design process of developing a computational artifact that incorporates user feedback and preferences.

Networks & System Design

Subconcept	Standard
Hardware and Software	**7-8.NSD.1** Design a user interface for a computing technology that considers usability, accessibility, and desirability.
	7-8.NSD.2 Design a project that combines hardware and software components.
	7-8.NSD.3 Identify and fix problems with computing devices and their components using a systematic troubleshooting method or guide.
Networks and the Internet	**7-8.NSD.4** Design a protocol for transmitting data through a multi-point network.
	7-8.NSD.5 Summarize how remote data is stored and accessed in a network.

Cybersecurity

Subconcept	Standard
Risks	**7-8.CY.1** Determine the types of personal information and digital resources that an individual may have access to that needs to be protected.
Safeguards	**7-8.CY.2** Describe physical, digital, and behavioral safeguards that can be employed in different situations.
	7-8.CY.3 Describe trade-offs of implementing specific security safeguards.
	7-8.CY.4 Describe the limitations of cryptographic methods.
Response	**7-8.CY.5** Describe actions to be taken before and after an application or device reports a security problem or performs unexpectedly.

Digital Literacy

Subconcept	Standard
Digital Use	**7-8.DL.1** Type on a keyboard while demonstrating proper keyboarding technique, with increased speed and accuracy.
	7-8.DL.2 Communicate and collaborate with others using a variety of digital tools to create and revise a collaborative product.
	7-8.DL.3 Compare types of search tools, choose a search tool for effectiveness and efficiency, and evaluate the quality of search tools based on returned results.
	7-8.DL.4 Select and use digital tools to create, revise, and publish digital artifacts.
	7-8.DL.5 Transfer knowledge of technology in order to explore new technologies.
Digital Citizenship	**7-8.DL.6** Explain the connection between the persistence of data on the Internet, personal online identity, and personal privacy.
	7-8.DL.7 Describe safe, appropriate, positive, and responsible online behavior and identify strategies to combat negative online behavior.