New York Computer Science & Digital Fluency

Grades 4-6

Impacts of Computing 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.1
2. Explain how laws impact the use of computing technologies and digital information. 4-6.IC.2
3. Explain current events that involve computing technologies. 4-6.IC.3
4. Explain who has access to data in different digital spaces. 4-6.IC.4
5. Explain how computer systems play a role in human decision-making. 4-6.IC.5
6. Identify and explain ways to improve the accessibility and usability of a computing device or software application for the diverse needs and wants of users. 4-6.IC.6
7. Identify a diverse range of role models in computer science. 4-6.IC.7

Computational Thinking CT

1. Develop a computational model of a system that shows changes in output when there are changes in inputs. 4-6.CT.1
2. Collect digital data related to a real life question or need. 4-6.CT.2
3. Visualize a simple data set in order to highlight relationships and persuade an audience. 4-6.CT.3
4. Decompose a problem into smaller named tasks, some of which can themselves be decomposed into smaller steps. 4-6.CT.4
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. 4-6.CT.5
6. Compare two or more algorithms and discuss the advantages and disadvantages of each for a specific task 4-6.CT.6
7. Identify pieces of information that might change as a program or process runs. 4-6.CT.7
8. Develop algorithms or programs that use repetition and conditionals for creative expression or to solve a problem. 4-6.CT.8

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	9 Explain each step of an algorithm or program that includes repetition and conditionals for the purposes of debugging. 4-6.CT.9
	10 Describe the steps taken and choices made to design and develop a solution using an iterative design process. 4-6.CT.10
Networks & System Design NSD	1 Propose improvements to the design of a computing technology based on an analysis of user interactions with that technology. 4-6.NSD.1
	2 Model how computer hardware and software work together as a system to accomplish tasks. 4-6.NSD.2
	3 Determine potential solutions to solve hardware and software problems using common troubleshooting strategies. 4-6.NSD.3
	4 Model how data is structured to transmit through a network. 4-6.NSD.4
	5 Describe that data can be stored locally or remotely in a network. 4-6.NSD.5
Cybersecurity CY	1 Explain why different types of information might need to be protected. 4-6.CY.1
	2 Describe common safeguards for protecting personal information. 4-6.CY.2
	3 Describe trade-offs between allowing information to be public and keeping information private and secure. 4-6.CY.3
	4 Model and explain the purpose of simple cryptographic methods. 4-6.CY.4
	5 Explain suspicious activity of applications and devices. 4-6.CY.5
Digital Literacy DL	1 Type on a keyboard while demonstrating proper keyboarding technique. 4-6.DL.1
	2 Select appropriate digital tools to communicate and collaborate while learning with others. 4-6.DL.2
	3 Conduct and refine advanced multicriteria digital searches to locate content relevant to varied learning goals. 4-6.DL.3
	4 Use a variety of digital tools and resources to create and revise digital artifacts. 4-6.DL.4
	5 Identify common features of digital technologies. 4-6.DL.5
	6 Describe persistence of digital information and explain how actions in online spaces can have consequences. 4-6.DL.6
	7 Identify and describe actions in online spaces that could potentially be unsafe or harmful. 4-6.DL.7