

Standard Course of Study Alignment

Computer Science (2020)



Legend

•	The standard is clearly addressed by program activities.
-	This standard potentially could be addressed as part of FIRST® LEGO® League Discover either by actions that the coach or teacher takes when working with the students or by conditions established by the program.

Grades K-2

Concepts	Addressed
Computing Systems	
K2-CS-01 Choose appropriate devices to perform a variety of classroom tasks.	-
K2-CS-02 Describe the function of common physical components of computing systems (hardware) with appropriate terminology.	-
K2-CS-03 Operate appropriate software to perform a variety of tasks.	-
K2-CS-04 Describe basic hardware and software problems with accurate terminology.	-
Networks & The Internet	
K2-NI-01 Illustrate how information is broken down into smaller pieces and can be reassembled.	-
K2-NI-02 Apply knowledge of what passwords are and why we use strong passwords to protect devices and information from unauthorized access.	-
K2-NI-03 Discover your digital footprint and how personal information can be protected.	-
Data & Analysis	
K2-DA-01 Store, copy, search, retrieve, modify, and delete information using a computing device.	-
K2-DA-02 Define information stored on a computing device as data.	-
K2-DA-03 Collect and present the same data in various visual formats.	-
K2-DA-04 Make predictions with patterns in data visualizations.	-
Algorithms & Programming	
K2-AP-01 Model daily processes with algorithms to complete tasks.	•
K2-AP-02 Demonstrate how programs store and manipulate data by using numbers or other symbols to represent information.	•
K2-AP-03 Develop programs with sequences and simple loops to express ideas or address a problem.	•
K2-AP-04 Decompose the steps needed to solve a problem into a precise sequence of instructions.	•
K2-AP-05 Develop plans that describe a program's sequence of events, goals, and expected outcomes.	•
K2-AP-06 Give attribution when using the ideas and creations of others while developing programs.	-
K2-AP-07 Identify and debug errors in an algorithm or program that includes sequences and simple loops.	•
K2-AP-08 Using correct terminology, describe steps taken and choices made during the iterative process of program development.	•
Impacts of Computing	
K2-IC-03 Work respectfully and responsibly with others online.	-
K2-IC-04 Model responsible login and logoff procedures on all devices.	-

Grades 3-5

Concepts	Addressed
Computing Systems	
35-CS-01 Evaluate the features available on digital devices to perform a variety of classroom tasks.	-
35-CS-02 Model how computer hardware and software work together as a system to accomplish tasks.	-
35-CS-03 Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.	-
Networks & The Internet	
35-NI-01 Model how information is broken down into smaller pieces, transmitted as packets through multiple devices over networks and the Internet, and reassembled at the destination.	-
35-NI-02 Explain your digital footprint and how personal information can be protected.	-
Data & Analysis	
35-DA-01 Identify the type of data encoded in a file based on file extension.	-
35-DA-02 Illustrate the process of file management and version control.	-
35-DA-03 Organize and present collected data visually to highlight relationships and support a claim.	-
35-DA-04 Communicate using data to highlight or predict outcomes.	-
Algorithms & Programming	
35-AP-01 Create multiple algorithms for the same task to determine which is the most accurate and efficient.	●
35-AP-02 Create programs that use variables to store and modify data.	●
35-AP-03 Construct programs that include sequences.	●
35-AP-04 Construct programs using simple loops.	●
35-AP-05 Construct programs that implement conditionals.	-
35-AP-06 Decompose problems into smaller, manageable, subproblems to facilitate the program development process.	●
35-AP-07 Modify, remix, or incorporate portions of an existing program into one's own work.	●
35-AP-08 Apply an iterative process to the development of a program by including diverse perspectives and considering user preferences.	●
35-AP-09 Give appropriate attribution when creating or remixing programs while respecting intellectual property rights.	-
35-AP-10 Identify and debug errors in an algorithm or program to ensure it runs as intended.	●
35-AP-11 Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.	●
35-AP-12 Describe choices made during program development using code comments, presentations, and demonstrations.	●
Impacts of Computing	
35-IC-01 Compare computing technologies that have changed the world and how they both influence and are influenced by cultural practices.	-
35-IC-02 Explore the tools that can be used to improve accessibility and usability of technology products for the diverse needs and wants of users.	-
35-IC-03 Seek diverse perspectives with collaboration for the purpose of improving computational artifacts.	-
35-IC-04 Exhibit positive digital citizenship and social responsibility in online interactions.	-
35-IC-05 Utilize public domain or creative commons media, and refrain from copying or using material created by others without permission.	-