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EiE® Computer Science Essentials™ Grades 1 – 5
Alignment to CSTA K–12 Computer Science Standards

EiE Computer Science Essentials™

K–2 CSTA	Level 1A	Prep Lesson (all grades)	Grade 1 Program-ming Robots	Grade 2 Creating Animations	Grade 3 Building Automated Systems	Grade 4 Designing Computer Games	Grade 5 Analyzing Digital Images
1A-CS-01	Select and operate appropriate software to perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.			●			
1A-CS-02	Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).	●					
1A-CS-03	Describe basic hardware and software problems using accurate terminology	●	●	●			
1A-NI-04	Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized access					●	●
1A-DA-05	Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data	●	●	●			
1A-DA-06	Collect and present the same data in various visual formats						
1A-DA-07	Identify and describe patterns in data visualizations, such as charts or graphs, to make predictions.						
1A-AP-08	Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks	●	●	●			
1A-AP-09	Model the way programs store and manipulate data by using numbers or other symbols to represent information.		●	●			

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1A-AP-10	Develop programs with sequences and simple loops, to express ideas or address a problem.		●	●			
1A-AP-11	Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.		●	●			
1A-AP-12	Develop plans that describe a program's sequence of events, goals, and expected outcomes.		●	●			
1A-AP-13	Give attribution when using the ideas and creations of others while developing programs.			●			
1A-AP-14	Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.		●	●			
1A-AP-15	Using correct terminology, describe steps taken and choices made during the iterative process of program development.		●	●			
1A-IC-16	Compare how people live and work before and after the implementation or adoption of new computing technology.	●	●	●	●	●	●
1A-IC-17	Work respectfully and responsibly with others online			●	●	●	●
1A-IC-18	Keep login information private, and log off of devices appropriately.			●	●	●	●

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3–5 CSTA	Level 1B	Prep Lesson (all grades)	Gr 1 Program-ming Robots	Gr 2 Creating Animations	Gr 3 Building Automated Systems	Gr 4 Designing Computer Games	Gr 5 Analyzing Digital Images
1B-CS-01	Describe how internal and external parts of computing devices function to form a system.	●			●		
1B-CS-02	Model how computer hardware and software work together as a system to accomplish tasks.	●			●		
1B-CS-03	Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.				●		
1B-NI-04	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.						
1B-NI-05	Discuss real-world cybersecurity problems and how personal information can be protected.						
1B-DA-06	Organize and present collected data visually to highlight relationships and support a claim.						●
1B-DA-07	Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea.				●		●
1B-AP-08	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.					●	
1B-AP-09	Create programs that use variables to store and modify data. Variables are used to store and modify data.					●	●
1B-AP-10	Create programs that include sequences, events, loops, and conditionals.				●	●	●

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3–5 CSTA	Level 1B	Prep Lesson (all grades)	Gr 1 Program-ming Robots	Gr 2 Creating Animations	Gr 3 Building Automated Systems	Gr 4 Designing Computer Games	Gr 5 Analyzing Digital Images
1B-AP-11	Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.			●	●	●	●
1B-AP-12	Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.			●		●	●
1B-AP-13	Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.				●	●	●
1B-AP-14	Observe intellectual property rights and give appropriate attribution when creating or remixing programs.					●	●
1B-AP-15	Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.				●	●	●
1B-AP-16	Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.			●	●	●	●
1B-AP-17	Describe choices made during program development using code comments, presentations, and demonstrations.				●	●	●
1B-IC-18	Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.	●					
1B-IC-19	Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.				●	●	

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1B-IC-20	Seek diverse perspectives for the purpose of improving computational artifacts.				●	●	●
1B-IC-21	Use public domain or creative commons media, and refrain from copying or using material created by others without permission.						

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Key to Computer Science Teachers Association (CSTA) K–12 Learning Standards Identifiers

Level	Framework Concept	Number	Computer Science K–12 Learning Standard
Grades 3-5	Algorithms and Programming	09	Create programs that use variables to store and modify data.
1B	**AP**	**09**	**Identifier: 1B-AP-09**

The identifier code corresponds to: **Level – Concept – Number**
1B-AP-09

Identifier Code	Levels
1A	Grades K–2
1B	Grades 3–5
2	Grades 6–8
3A	Grades 9–10
3B	Grades 11–12

Identifier Code	Concepts
CS	Computing Systems
NI	Networks and the Internet
DA	Data and Analysis
AP	Algorithms and Programming
IC	Impacts of Computing

The 7 core practices of computer science describe the *behaviors and ways of thinking that computationally literate students use* to fully engage in today's data-rich and interconnected world.

Identifier Code	Practices
P1	Fostering an Inclusive Computing Culture
P2	Collaborating
P3	Recognizing and Defining Computational Problems
P4	Developing and Using Abstractions
P5	Creating Computational Artifacts
P6	Testing and Refining
P7	Communicating about Computing

Computer Science Teachers Association K–12 Computer Science Standards (2017) Retrieved from http://www.csteachers.org

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