

Grade 5

Computational Thinking

1 Develop, utilize, and evaluate algorithms, to model and solve problems.

- 1** Algorithms can be created, tested, and improved. [CS.5.1.1](#)
 - a** Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies. [CS.5.1.1.A](#)
 - b** Compare multiple algorithms for the same task and determine which is the most appropriate. [CS.5.1.1.B](#)
 - c** Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. [CS.5.1.1.C](#)
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2 Systematically analyze a problem using decomposition and abstraction to formulate a solution.

- 2** Complex problems can be broken into smaller parts to facilitate the program development process. [CS.5.1.2](#)
 - a** Decompose (breakdown) problems into smaller, manageable subproblems to facilitate the program development process. [CS.5.1.2.A](#)
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Computing Systems and Networks

5 Develop systems solutions from a set of specifications to complete a design process.

- 1** When designing or improving computational artifacts, the designer should consider various perspectives. [CS.5.2.1](#)
 - a** Seek diverse perspectives for the purpose of improving computational artifacts. [CS.5.2.1.A](#)
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Computer Programming

7 Design and create programs, individually and collaboratively, for a variety of disciplines.

- 1 Computer programs can include a variety of components that can be created and revised collaboratively over time to improve and expand the function of the program. **CS.5.3.1**
 - a Create programs that use variables to store and modify data. **CS.5.3.1.A**
 - b Create programs that include sequences, events, loops, and conditionals. **CS.5.3.1.B**
 - c Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. **CS.5.3.1.C**
 - d Use an iterative process to plan the development of a program by including others' perspectives and considering diverse viewpoints. **CS.5.3.1.D**
 - e Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development. **CS.5.3.1.E**
 - f Describe choices made during program development using code comments, presentations, and demonstrations. **CS.5.3.1.F**
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Artificial Intelligence (AI)

12 Explain how AI tools work and how they are built.

- 1 AI systems can express information through a variety of ways and can perform tasks they were not explicitly programmed to perform through machine learning **CS.5.5.1**
 - a Give examples of intelligent vs. non intelligent machines and discuss what makes a machine intelligent. **CS.5.5.1.A**
 - b Identify problems as either classification problems or search problems. **CS.5.5.1.B**
 - c Identify patterns in labeled data and determine the features that predict labels. **CS.5.5.1.C**
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Digital Citizenship

13 Practice responsible, ethical, and safe use of computing technology and the internet.

- 1 Cyberbullying is the use of digital devices, sites, and apps to intimidate, harm, and/or upset someone. **CS.5.6.1**
 - a Recognize similarities and differences between in-person bullying, cyberbullying, and being mean. **CS.5.6.1.A**
 - b Identify strategies for dealing with cyberbullying and ways they can be an upstander for those being bullied. **CS.5.6.1.B**
 - c Explain how certain policies and laws are created to guide online interactions. **CS.5.6.1.C**