Colorado Computer Science

Grade 1

Computational Thinking

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

1 An algorithm is a set of steps for a specific purpose and can be modified. CS.1.1.1

- a Create and follow algorithms (sets of step-by-step instructions) to complete tasks. CS.1.1.1.A
- b Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. CS.1.1.1.B
- c Using correct terminology, describe steps taken, and choices made during the process of program development and revision. CS.1.1.1.C

2 Systematically analyze a problem using decomposition and abstraction to formulate a solution.

2 Complex problems can be broken into smaller parts to facilitate solving the problem. CS.1.1.2

- a Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. CS.1.1.2.A

3 Represent and analyze data in order to generate new knowledge and capability.

3 Data is information that can be collected, stored, and represented in a variety of ways. CS.1.1.3

- a Find, add, change, and delete information using a computing device and define the information stored as data. CS.1.1.3.A
- b Collect and present the same data in various visual formats. CS.1.1.3.B
- c Describe patterns in data using visual representations such as charts or graphs, to make predictions. CS.1.1.3.C
- d Use numbers or other symbols to represent information and describe that this is similar to how computer programs represent information. CS.1.1.3.D

Computing Systems and Networks

4 Use systems thinking to describe networks and common software and hardware components.

1 Computing systems rely on both hardware and software, that can be local or accessed remotely. CS.1.2.1

a Describe basic hardware and software problems using accurate terminology. CS.1.2.1.A

b Describe the difference between online and local use of computing devices. CS.1.2.1.B

c Recognize that equipment is needed to access a network. CS.1.2.1.C

Computer Programming

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

1 A computer program is a sequence of steps that is expressed in a computer programming language so that a computer can follow and perform the steps. CS.1.3.1

a Use appropriate software to perform a variety of tasks. CS.1.3.1.A

b Develop programs with sequences to express ideas or address a problem. CS.1.3.1.B

c Cite sources when using the ideas and creations of others while developing programs. CS.1.3.1.C

Digital Citizenship

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

1 Digital citizenship plays a role in our everyday lives both in person and online. CS.1.6.1

a Explain that there are rules for interacting online that are intended to keep people safe. CS.1.6.1.A

b Differentiate between appropriate and inappropriate online behavior. CS.1.6.1.B