Massachusetts Digital Literacy and Computer Science

Grades K, 1, 2

Adopted 2016

Computing and Society

a. Safety and Security K-2.CAS.A

1. Demonstrate proper ergonomics (e.g., body position, stretching) when using devices. K-2.CAS.A.1
2. Use electrical devices safely and in moderation (e.g., unplug devices by pulling the plug rather than the cord, do not mix water/food and electric devices, avoid gaming and walking). K-2.CAS.A.2
3. Care for devices appropriately (e.g., handling devices gently, completely shutting down devices when not in use, storing devices in the appropriate container). K-2.CAS.A.3
4. Explain that a password helps protect the privacy of information. K-2.CAS.A.4
5. Identify safe and unsafe examples of online communications. K-2.CAS.A.5
6. Explain why we keep personal information (e.g., name, location, phone number, home address) private. K-2.CAS.A.6
7. Identify which personal information (e.g., user name or real name, school name or home address) should and should not be shared online and with whom. K-2.CAS.A.7
8. Explain why it is necessary to report inappropriate electronic content or contact. K-2.CAS.A.8

b. Ethics and Laws K-2.CAS.B

1. Define good digital citizenship as using technology safely, responsibly, and ethically. K-2.CAS.B.1
2. Demonstrate responsible use of computers, peripheral devices, and resources as outlined in school rules (Acceptable Use Policy [AUP] for K-2). K-2.CAS.B.2
3. Explain that most digital artifacts have owners. K-2.CAS.B.3
4. Explain the importance of giving credit to media creators/owners when using their work. K-2.CAS.B.4

c. Interpersonal and Societal Impact K-2.CAS.C

1. Identify and describe how people (e.g., students, parents, policemen) use many types of technologies in their daily work and personal lives. K-2.CAS.C.1
2. Recognize when the purpose of content is to provide information or to influence you to act. K-2.CAS.C.2

Digital Tools and Collaboration

a. Digital Tools K-2.DTC.A

1. Operate a variety of digital tools (e.g., open/close, find, save/print, navigate, use input/output devices). K-2.DTC.A.1
2. Identify, locate, and use letters, numbers, and special keys on a keyboard (e.g., Space Bar, Shift, Delete). K-2.DTC.A.2
3. Create a simple digital artifact. K-2.DTC.A.3
4. Use appropriate digital tools individually and collaboratively to create, review, and revise simple artifacts that include text, images and audio. K-2.DTC.A.4

b. Collaboration and Communication K-2.DTC.B

1. Collaboratively use digital tools and media resources to communicate key ideas and details in a way that informs, persuades, and/or entertains. K-2.DTC.B.1
2. Use a variety of digital tools to exchange information and feedback with teachers. K-2.DTC.B.2
3. Use a variety of digital tools to present information to others. K-2.DTC.B.3

c. Research K-2.DTC.C

1. Conduct basic keyword searches to gather information from teacher-provided digital sources (e.g., online library catalog, databases). K-2.DTC.C.1
2. Create an artifact individually and collaboratively that answers a research question, while clearly expressing thoughts and ideas. K-2.DTC.C.2
3. Acknowledge and name sources of information or media (e.g., title of book, author of book, website). K-2.DTC.C.3

Computing Systems

a. Computing Devices K-2.CS.A

1. Identify different kinds of computing devices in the classroom and other places (e.g., laptops, tablets, smart phones, desktops). K-2.CS.A.1
2. Identify visible components of computing devices (e.g., keyboard, screen, monitor, printer, pointing device). K-2.CS.A.2
3. Explain that computing devices function when applications, programs, or commands are executed. K-2.CS.A.3
4. Operate a variety of computing systems (e.g., turn on, use input/output devices such as a mouse, keyboard, or touch screen; find, navigate, launch a program). K-2.CS.A.4

b. Human and Computer Partnerships K-2.CS.B

1. Explain that computing devices are machines that are not alive, but can be used to help humans with tasks. K-2.CS.B.1
2. Recognize that some tasks are best completed by humans and others by computing devices (e.g., a human might be able to rescue someone in a normal environment, but robots would be better to use in a dangerous environment). K-2.CS.B.2
3. Recognize that different tools can solve the same problem (e.g., pen and paper, calculators, and smart phones can all be used to solve simple mathematical problems) K-2.CS.B.3

c. Networks K-2.CS.C

1. Explain that networks link computers and devices locally and around the world allowing people to access and communicate information. K-2.CS.C.1

d. Services K-2.CS.D

1. No standards at this level. K-2.CS.D.1

Computational Thinking

a. Abstraction K-2.CT.A

1. List the attributes of a common object, for example, cars have a color, type (e.g., pickup, van, sedan), number of seats, etc. K-2.CT.A.1

b. Algorithms K-2.CT.B

1. Define an algorithm as a sequence of defined steps. K-2.CT.B.1
2. Create a simple algorithm, individually and collaboratively, without using computers to complete a task (e.g., making a sandwich, getting ready for school, checking a book out of the library). K-2.CT.B.2
3. Enact an algorithm using tangible materials (e.g., manipulatives, your body) or present the algorithm in a visual medium (e.g., storyboard). K-2.CT.B.3

c. Data K-2.CT.C

1. Identify different kinds of information (e.g., text, charts, graphs, numbers, pictures, audio, video, collections of objects.) K-2.CT.C.1
2. Identify, research, and collect information on a topic, issue, problem, or question using age-appropriate digital technologies. K-2.CT.C.2
3. Individually and collaboratively propose a solution to a problem or question based on an analysis of information. K-2.CT.C.3
4. Individually and collaboratively create information visualizations (e.g., charts, infographics). K-2.CT.C.4
5. Explain that computers can save information as data that can be stored, searched, retrieved, and deleted. K-2.CT.C.5

d. Programming and Development K-2.CT.D

1. Define a computer program as a set of commands created by people to do something. K-2.CT.D.1
2. Explain that computers only follow the program's instructions. K-2.CT.D.2
3. Individually or collaboratively create a simple program using visual instructions or tools that do not require a textual programming language (e.g., "unplugged" programming activities, a block-based programming language). K-2.CT.D.3

e. Modeling and Simulation K-2.CT.E

1. Describe how models represent a real-life system (e.g., globe, map, solar system, digital elevation model, weather map). K-2.CT.E.1
2. Define simulation and identify the concepts illustrated by a simple simulation (e.g., growth and health, butterfly life cycle). K-2.CT.E.2