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

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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

Skip to main content

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

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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