Computer Science Standards

Grade 5

# **Computing Systems**

# **Devices**

* 5.CS.D.01 Define, discuss, and model how computer hardware and software work together as a system to accomplish tasks (e.g., input, output, processor, sensors, and storage).

# **Hardware and Software**

* 5.CS.HS.01 Define, discuss, and model how information flows through hardware and software to accomplish tasks such as converting a word to binary.

# **Troubleshooting**

* 5.CS.T.01 Identify, discuss, and apply strategies for solving simple hardware and software problems that may occur using everyday use (e.g., rebooting the device; checking the power; force shut down of an application).

# **Network and the Internet**

# **Network Communication and Organization**

* 5.NI.NCO.01 Recognize, explain, and model how information is broken down into packets (smaller pieces), transmitted between devices, and reassembled.

# **Cybersecurity**

* 5.NI.C.01 Discuss real‐world cybersecurity problems and how personal information can be protected. Discussion topics could be based on current events related to cybersecurity or topics that are applicable to students.

# **Data Analysis**

# **Storage**

* 5.DA.S.01 Using correct terminology explain why various types of files differ in size (e.g., video, images and documents).

# **Collection, Visualization and Transformation**

* 5.DA.CVT.01 Collect, organize, interpret, and display data to highlight relationships and support a claim.

# **Inference and Models**

* 5.DA.IM.01 Use data to highlight or propose cause and effect relationships, predict outcomes, or communicate an idea.

# **Algorithms and Programming**

# **Algorithms**

* **5..AP.A.01** Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

# **Variables**

* 5.AP.V.01 Create programs that use variables to store and modify grade level appropriate data.

# **Control**

# **Modularity**

* 5.AP.M.01 Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.

# **Program Development**

* 5.AP.PD.01 Define the concept of abstraction and create increasingly complex programs.
* 5.AP.PD.02 Observe intellectual property rights and give appropriate credit when creating or remixing programs.

# **Community, Global and Ethical Impacts**

# **Culture**

* 5.CGEI.C.01 Discuss ongoing trends in technologies that have changed the world, and express how those trends influence and are influenced by cultural practices.
* 5.CGEI.C.02 Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.

# **Social Interactions**

* 5.CGEI.SI.01 Develop a code of conduct, explain, and practice grade‐level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior.
* 5.CGEI.SI.02 As a team, collaborate with outside resources (other grade levels, online collaborative spaces) to include diverse perspectives to improve computational products.

# **Safety, Law and Ethics**

* 5.CGEI.SLE.01 Observe intellectual property rights, give appropriate credit when using resources and consider the licenses on computational artifacts while using resources.