

# Grade 6

## Computing Systems CS

### D. Devices D

- 1 Evaluate existing computing devices and make recommendations for improvements to design based on analysis of personal interactions and how others interact with the devices 6.CS.D.01
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### HS. Hardware & Software HS

- 1 Identify ways that hardware and software are combined and work synchronously to collect, store, retrieve, and exchange data. 6.CS.HS.01
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### T. Troubleshooting T

- 1 Troubleshoot problems with computing devices and networked components (e.g. peripherals, routers, cables, etc.). 6.CS.T.01
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## Networks and the Internet NI

### NCO. Network Communication & Organization NCO

- 1 Model a simple protocol for transferring information, using packets, across networks and the internet 6.NI.NCO.01
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### C. Cybersecurity C

- 1 Identify existing cybersecurity concerns with the internet, its connected devices (i.e. IoT) and the systems it uses. 6.NI.C.01
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## Data Analysis DA

### S. Storage S

- 1 Identify multiple encoding schemes that can be used to represent the same data. 6.DA.S.01
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### CVT. Collection, Visualization & Transformation CVT

- 1 Collect data using computational tools and transform the data to make it more useful. 6.DA.CVT.01
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### IM. Inference & Models IM

- 1 Identify relevant data points and use models and simulations to formulate, refine, and test hypotheses. 6.DA.IM.01
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## Algorithms and Programming AP

### A. Algorithms A

- 1 Use an existing algorithm or pseudocode to solve a problem. 6.AP.A.01

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**V. Variables** v

- 1 Decide when and how to declare and name new variables. 6.AP.V.01
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**C. Control** c

- 1 Develop secure programs that utilize combinations of loops, conditionals, and the manipulation of variables representing different data types. 6.AP.C.01
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**M. Modularity** m

- 1 Decompose problems and subproblems into parts to facilitate the secure design, implementation, and review of programs. 6.AP.M.01
  - 2 Identify and use functions within a program to repeat instructions. 6.AP.M.02
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**PD. Program Development** PD

- 1 Seek and incorporate feedback from team members to refine the solution to a problem. 6.AP.PD.01
  - 2 Incorporate existing code, media, and libraries into original programs from secure sources, and give appropriate attribution. 6.AP.PD.02
  - 3 Test and refine existing and original programs. 6.AP.PD.03
  - 4 Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts. 6.AP.PD.04
  - 5 Document programs in order to make them easier to understand, test, and debug. 6.AP.PD.05
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**Impacts of Computing** IC**C. Culture and Diversity** c

- 1 Identify tradeoffs associated with computing technologies that affect people's everyday activities and future opportunities (e.g., college acceptances, career choices that include security clearances). 6.IC.C.01
  - 2 Identify issues of bias and accessibility that occur in the design of existing computing technologies. 6.IC.C.02
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**SI. Social Interactions** SI

- 1 Describe and use safe, appropriate, and responsible practices when participating online (e.g., discussion groups, blogs, social networking sites) to maintain a clean record for post-secondary choices that require security clearances and background checks. 6.IC.SI.01
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**SLE. Safety, Law & Ethics** SLE

- 1 Differentiate between appropriate and inappropriate content on the internet, and identify unethical and illegal online behavior and consequences. 6.IC.SLE.01