Louisiana Computer Science

Grade 6 through Grade 8

Computing Systems

1 Hardware and Software M.CS.1

- A Analyze the functions and interactions of core components within a computer system. M.CS.1A
- B Explain how hardware and software components work together to perform specific tasks. M.CS.1B

2 Troubleshooting M.CS.2

- A Evaluate possible solutions to a hardware or software problem. M.CS.2A

Networks and the Internet

1 Hardware and Network Communication M.NI.1

- A Analyze the various structures and functions of a network. M.NI.1A
- B Identify and differentiate the protocols utilized in data sharing across networks. M.NI.1B

2 Cybersecurity M.NI.2

- A Analyze threats and vulnerabilities to information security for individuals and organizations. M.NI.2A
- B Explain how physical and digital security practices and measures proactively address threats to users, data, and devices within and across networks. M.NI.2B

Data and Analysis

1 Data Representation M.DA.1

- A Analyze and explain the connection between data sets and graphical representations. M.DA.1A
- B Evaluate the most efficient and effective ways to arrange, collect, and visually represent data to inform others. M.DA.1B

2 Data Collection M.DA.2

- A Compare and contrast how data is collected using computational and non-computational tools and processes. M.DA.2A
- B Analyze scenarios and computing systems to determine the appropriate data entry format for specific tasks. M.DA.2B

3 Data Storage M.DA.3

- A Propose methods to back up data safely and the appropriate practices for data risk management. M.DA.3A
- B Describe how different representations of real-world phenomena, such as letters, numbers, and images are encoded as data. M.DA.3B

4 Visualizations and Transformations M.DA.4

- A Utilize tools and techniques to locate, collect, and create visualizations of large-scale data sets. M.DA.4A
- B Collect and transform data using computational tools to make functional and reliable data for use in hypothesis testing. M.DA.4B

5 Inference and Models M.DA.5

- A Refine computational models based on data generated by the models. M.DA.5A
- B Describe and evaluate the accuracy of a modeled system by comparing the generated results with observed data from the system the data represents. M.DA.5B

Algorithms and Programming

1 Variables and Algorithms M.AP.1

- A Evaluate and use naming conventions for variables to accurately communicate the variables' meaning to other users and programmers. M.AP.1A
- B Evaluate algorithms in terms of efficiency, correctness, and clarity. M.AP.1B
- C Compare and contrast data constants and variables. M.AP.1C

2 Control Structures M.AP.2

- A Explain the functions of various control structures. Compare and contrast examples of control structure types. M.AP.2A
- B Design and iteratively develop programs that combine control structures into advanced control structures. M.AP.2B

3 Modularity M.AP.3

- A Decompose problems to facilitate program design, implementation, and review. M.AP.3A
- B Create procedures with parameters to organize code and promote reusability. M.AP.3B

4 Program Development M.AP.4

- A Seek and incorporate feedback from peers to employ user-centered design solutions. M.AP.4A
- B Use applicable industry practices to test, debug, document, and peer review code. M.AP.4B
- C Develop computational artifacts by working as a team, distributing tasks, and maintaining an iterative project timeline. M.AP.4C
- D Incorporate existing resources into original programs and give the proper attributions. M.AP.4D
- E Systematically test, document outcomes, and refine programs using a range of test cases. M.AP.4E

Impacts of Computing

1 Intellectual Achievements M.IC.1

- A Identify foundational computational advancements through the use of the technology innovation cycle. M.IC.1A
- B Plan and devise new ideas and solutions for problems with inspiration from previous discoveries in computational knowledge. M.IC.1B

2 Social Interaction M.IC.2

- A Develop and propose norms for informal versus formal online communications. M.IC.2A
- B Analyze communication technologies and then describe how the technology's use influences individuals and society. M.IC.2B
- C Generate designs that increase the accessibility and usability of technology for various groups of users. M.IC.2C

3 Laws, Safety, and Industry Practices M.IC.3

- A Identify applicable laws that impact personal, industry, or business computing practices. M.IC.3A
- B Recommend and propose computing-use guidelines to maintain a user's personal safety, privacy, and well-being. M.IC.3B
- C Describe and categorize factors that affect user's access to computing resources locally, nationally, and globally. M.IC.3C