

## The VRFA is strongly aligned to the Florida Computer Science standards for Grades 6-8.

- M1 Module 1: Jumping Right In
- M2 Module 2: Making an Arcade Game
- M3 Module 3: Cryptography
- M4 Module 4: Introduction to Unity
- M5 Module 5: VR Village

### Florida Computer Science Standards Grades 6 through 8

### Benchmark Code

### VRFA Course Reference

#### Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION AND COLLABORATION

##### Standard 1: Communication and collaboration

<ul style="list-style-type: none"> <li>• Apply productivity and or multimedia tools for local and global group collaboration.</li> </ul>	SC.68.CS-CC.1.2	M1 M2 M3 M4 M5
<ul style="list-style-type: none"> <li>• Design, develop, and publish a collaborative digital product using a variety of digital tools and media-rich resources that demonstrate and communicate concepts to inform, persuade, and/or entertain.</li> </ul>	SC.68.CS-CC.1.3	M2 M5

#### Body of Knowledge: COMPUTER SCIENCE - COMMUNICATION SYSTEMS AND COMPUTING

##### Standard 1: Modeling and simulations

<ul style="list-style-type: none"> <li>• Examine connections between elements of mathematics and computer science including binary numbers, logic, sets, and functions.</li> </ul>	SC.68.CS-CS.1.1	M1 M2 M3
<ul style="list-style-type: none"> <li>• Create or modify and use a simulation to analyze and illustrate a concept in depth (i.e., use a simulation to illustrate a genetic variation), individually and collaboratively.</li> </ul>	SC.68.CS-CS.1.2	M4 M5
<ul style="list-style-type: none"> <li>• Evaluate what kinds of real-world problems can be solved using modeling and simulation.</li> </ul>	SC.68.CS-CS.1.3	M4
<ul style="list-style-type: none"> <li>• Interact with content-specific models and simulations to support learning, research and problem solving (e.g., immigration, international trade, invasive species).</li> </ul>	SC.68.CS-CS.1.4	M5

##### Standard 2: Problem solving and Algorithms

<ul style="list-style-type: none"> <li>• Recognize that more than one algorithm can solve a given problem.</li> </ul>	SC.68.CS-CS.2.10	M3
<ul style="list-style-type: none"> <li>• Predict outputs while showing an understanding of inputs.</li> </ul>	SC.68.CS-CS.2.11	M3
<ul style="list-style-type: none"> <li>• Select the 'best' algorithm based on a given criteria (e.g., time, resource, and accessibility) to solve a problem, individually and collaboratively.</li> </ul>	SC.68.CS-CS.2.12	M3 M5
<ul style="list-style-type: none"> <li>• Explore a problem domain using iterative development and debugging.</li> </ul>	SC.68.CS-CS.2.13	M1 M2 M3
<ul style="list-style-type: none"> <li>• Perform program tracing to predict the behavior of programs.</li> </ul>	SC.68.CS-CS.2.14	M2 M3
<ul style="list-style-type: none"> <li>• Solve real-life issues in science and engineering (i.e., generalize a solution to open-ended problems) using computational thinking skills.</li> </ul>	SC.68.CS-CS.2.2	M3
<ul style="list-style-type: none"> <li>• Decompose a problem and create a function for one of its parts at a time (e.g., video game, robot obstacle course, making dinner), individually and collaboratively.</li> </ul>	SC.68.CS-CS.2.5	M2 M3
<ul style="list-style-type: none"> <li>• Create a program that implements an algorithm to achieve a given goal, individually and collaboratively.</li> </ul>	SC.68.CS-CS.2.6	M3

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### Standard 2: Problem solving and Algorithms (continued)

- Design solutions that use repetition and two-way selection (e.g., for, while, if/else).
- Recognize that boundaries need to be taken into account for an algorithm to produce correct results.
- Identify simple data types and data structures.

SC.68.CS-CS.2.7

M1 M2 M3

SC.68.CS-CS.2.8

M2 M3

SC.68.CS-CS.2.9

M2 M3

### Standard 3: Digital tools

- Explain why different file types exist (e.g., formats for word processing, images, music, and three-dimensional drawings).
- Identify the kinds of content associated with different file types.
- Integrate information from multiple file formats into a single artifact.

SC.68.CS-CS.3.1

M2 M4 M5

SC.68.CS-CS.3.2

M2 M4 M5

SC.68.CS-CS.3.3

M2

### Standard 4: Hardware and software

- Identify and describe the function of the main internal parts of a basic computing device (e.g., motherboard, hard drive, Central Processing Unit -CPU).
- Describe the main functions of an operating system and explain how an operating system provides user and system services (e.g., user interface, IO device management, task management).
- Describe the relationships between hardware and software (e.g., BIOS, operating systems and firmware).
- Evaluate a hardware or software problem and construct the steps involved in diagnosing and solving the problem (e.g., power, connections, application window or toolbar, cables, ports, network resources, video, and sound).
- Describe the essential characteristics of a software artifact.
- Identify software used to support specialized forms of human-computer interaction.

SC.68.CS-CS.4.1

M1

SC.68.CS-CS.4.2

M1

SC.68.CS-CS.4.3

M1

SC.68.CS-CS.4.5

M2 M3

SC.68.CS-CS.4.6

M2 M5

SC.68.CS-CS.4.8

M4 M5

### Standard 5: Network systems

- Describe how information, both text and non-text, is translated and communicated between digital computers over a computer network.

SC.68.CS-CS.5.1

M2 M3

### Standard 6: Human – Computer interactions and Artificial Intelligence

- Explain why some tasks can be accomplished more easily by computers.
- Describe how humans and machines interact to accomplish tasks that cannot be accomplished by either alone.
- Identify novel ways humans interact with computers, including software, probes, sensors, and handheld devices.
- Identify factors that distinguish humans from machines.

SC.68.CS-CS.6.1

M1 M3

SC.68.CS-CS.6.2

M1 M3 M5

SC.68.CS-CS.6.3

M5

SC.68.CS-CS.6.5

M1 M3

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### Body of Knowledge: COMPUTER SCIENCE - COMPUTER PRACTICES AND PROGRAMMING

#### Standard 1: Data analysis

- Define parameters for individual and collaborative projects using Boolean logic (e.g., using “not”, “or”, “and”).

SC.68.CS-CP.1.1

M2 M3

#### Standard 2: Computer programming basics

- Develop problem solutions using visual representations of problem states, structures and data.

SC.68.CS-CP.2.1

M1 M2 M3

#### Standard 3: Programming applications

- Select appropriate tools and technology resources to accomplish a variety of tasks and solve problems.
- Create an artifact (independently and collaboratively) that answers a research question and communicates results and conclusions.

SC.68.CS-CP.3.1

M1 M2 M3 M4 M5

SC.68.CS-CP.3.3

M3 M5

### Body of Knowledge: COMPUTER SCIENCE - PERSONAL, COMMUNITY, GLOBAL, AND ETHICAL IMPACT

#### Standard 1: Responsible use of technology and information

- Recognize and describe legal and ethical behaviors when using information and technology and describe the consequences of misuse.
- Describe and use safe and appropriate practices when participating in online communities (e.g., discussion groups, blogs, and social networking sites).
- Evaluate the proper use and operation of security technologies (e.g., passwords, virus protection software, spam filters, pop-up blockers, and cookies).
- Recognize the impacts and consequences of plagiarism on the development of creative works, projects, publications and online content.

SC.68.CS-PC.1.1

M1 M5

SC.68.CS-PC.1.2

M1

SC.68.CS-PC.1.3

M1

SC.68.CS-PC.1.4

M1 M5

#### Standard 2: The impact of computing resources on local and global society

- Analyze the positive and negative impacts of computing, social networking and web technologies on human culture.
- Explain the possible consequences of cyberbullying and inappropriate use of social media on personal life and society.
- Describe ways in which adaptive technologies can assist users with special needs to function in their daily lives.
- Identify and discuss the technology skills needed in the workplace.
- Interpret writings and/or communications which use developmentally appropriate terminology.
- Identify interdisciplinary careers that are enhanced by computer science.

SC.68.CS-PC.2.1

M5

SC.68.CS-PC.2.2

M1

SC.68.CS-PC.2.5

M5

SC.68.CS-PC.2.6

M1 M2 M3 M4 M5

SC.68.CS-PC.2.7

M1 M2 M3 M4 M5

SC.68.CS-PC.2.8

M5



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### Standard 3: Evaluation of digital information resources

• Answer research questions using digital information resources.	SC.68.CS-PC.3.1	M2
• Analyze how media and technology can be used to distort, exaggerate, or misrepresent information.	SC.68.CS-PC.3.2	M2
• Describe strategies for determining the reliability of resources or information on the Internet.	SC.68.CS-PC.3.3	M2
• Identify peer reviewed resources and understand the need for peer review.	SC.68.CS-PC.3.4	M1 M2

### Standard 4: Security, privacy, information sharing, ownership, licensure and copyright

• Explain the guidelines for the fair use of downloading, sharing or modifying of digital materials.	SC.68.CS-PC.4.1	M2
• Explain how copyright law and licensing protect the owner of intellectual properties.	SC.68.CS-PC.4.2	M2
• Explain the possible consequences of violating intellectual property law.	SC.68.CS-PC.4.3	M2
• Identify threats and actions that protect devices from viruses, intrusion, vandalism, and other malicious activities.	SC.68.CS-PC.4.4	M2
• Demonstrate compliance with the school's Acceptable Use Policy.	SC.68.CS-PC.4.5	M1 M2 M3 M4 M5