Florida Computer Science

Grade 7

Communication and Collaboration Strand

1 **Demonstrate the understanding of collaborative tools.** SC.7.CC.1

- 1 Apply multimedia tools for local and global group collaboration. SC.7.CC.1.1
- 2 Identify productivity tools for collaboration. SC.7.CC.1.2
- 3 Identify individual roles within a collaborative team. SC.7.CC.1.3

2 **Synthesize information to create unique artifacts.** SC.7.CC.2

- 1 Organize compiled information using a digital tool. SC.7.CC.2.1
- 2 Analyze one's own ideas with research-based information to create a unique digital artifact. SC.7.CC.2.2

Personal Health and Safety Strand

1 **Analyze Internet practices.** SC.7.HS.1

- 1 Explain the possible consequences of cyberbullying. SC.7.HS.1.1
- 2 Discuss the impact of online disinhibition on individuals and society. SC.7.HS.1.2
- 3 Interpret writings and communications using terminology. SC.7.HS.1.3
- 4 Categorize potential dangers to an individual's safety and security. Example: Create a graphic organizer to sort information security, network security and physical security into categories. SC.7.HS.1.4
- 5 Recognize the importance of reporting suspicious behavior encountered on the Internet. SC.7.HS.1.5
- 6 Compare the risks and benefits of accessing the Internet. SC.7.HS.1.6
- 7 Examine safe practices for technology use. SC.7.HS.1.7

2 **Explain the mental and physiological effects of digital device use.** SC.7.HS.2

- 1 Identify the digital practices that may affect your physical and mental wellbeing. SC.7.HS.2.1

3 **Discuss the impact of digital footprints.** SC.7.HS.3

- 1 Discuss how device usage can affect sleeping patterns. SC.7.HS.3.1
- 2 Discuss the potential risks of device addiction and how to prevent it. SC.7.HS.3.2
- 3 Explain the possible consequences of cyberbullying and inappropriate use of digital media and communication on personal life and society. SC.7.HS.3.3

Computing Components Strand

1. **Develop foundational computer literacy fluency.** SC.7.CO.1
   1. Identify the kinds of content associated with different file types. SC.7.CO.1.1
   2. Differentiate between different file types. SC.7.CO.1.2
   3. Describe the relationship between hardware and software. SC.7.CO.1.3
   4. Utilize a set of websites to find information for a given topic. SC.7.CO.1.4
   5. Utilize government websites to facilitate civic engagement. SC.7.CO.1.5
   6. Describe strategies for determining the reliability of resources or information on the Internet. SC.7.CO.1.6

2. **Draw connections between hardware components.** SC.7.CO.2
   1. Explain the difference between wired, local area, wireless and mobile networks. SC.7.CO.2.1
   2. Identify and describe the function of the main internal parts of a basic computing device. SC.7.CO.2.2
   3. Explore devices that contain firmware. SC.7.CO.2.3
   4. Explain the connection of natural resources on the manufacturing of computer hardware components. SC.7.CO.2.4

3. **Draw connections between software components.** SC.7.CO.3
   1. Differentiate between desktop applications and software as a service (SaaS). SC.7.CO.3.1

Programming and Software Engineering Strand

1. **Construct coding segments for a purpose.** SC.7.PE.1
   1. Create a function for a specific purpose. SC.7.PE.1.1
   2. Write a code segment that will explore a list using iteration. SC.7.PE.1.2
   3. Develop a logical expression using operator precedence. SC.7.PE.1.3
   4. Develop an arithmetic expression using operator precedence. SC.7.PE.1.4
   5. Identify the types and uses of variables in a program. SC.7.PE.1.5
   6. Develop problem solutions using a block programming language. SC.7.PE.1.6
   7. Create online content using advanced design tools. SC.7.PE.1.7
   8. Identify different types of programming errors. SC.7.PE.1.8
   9. Debug a program using iterative development. Example: How is the iterative development of a computer program and an essay alike and different? Example: Create a series of steps that you can repeat over and over to help find errors in a computer program. SC.7.PE.1.9
   10. Write a code segment that will explore a list using iteration. SC.7.PE.1.10
   11. Create iterative and non-iterative structures in a code segment. SC.7.PE.1.11

2 **Use data to make predictions.** SC.7.PE.2

1 Predict outputs while showing an understanding of inputs. SC.7.PE.2.1

2 Analyze digital data within a database. SC.7.PE.2.2

3 **Apply computational thinking to programming.** SC.7.PE.3

1 Define parameters for individual and collaborative projects using Boolean logic. SC.7.PE.3.1

2 Modify and create a simulation to analyze and illustrate a concept in depth. SC.7.PE.3.2

3 Use modeling and simulations to test scientific hypotheses. SC.7.PE.3.3

4 Define the concept of a class related to object-oriented programming. SC.7.PE.3.4

5 Identify the purpose of indexing the order of elements in a list. SC.7.PE.3.5

6 Perform program tracing to predict the behavior of programs. Example: Students received a program to randomize passwords. The students must read through the program and interpret the logic for each section of the program and write them out in their own words predicting what each section will do. SC.7.PE.3.6

7 Identify the types and uses of variables in a program. SC.7.PE.3.7

4 **Explain the phases of the software development life cycle.** SC.7.PE.4

1 Define the phases of the software development life cycle. SC.7.PE.4.1

Technological Impact Strand

1 **Research the relationship between consumerism and technological advancements.** SC.7.TI.1

1 Discuss the ways that technology has increased the capacity for communication within a community. SC.7.TI.1.1

2 Evaluate the responsible and irresponsible use of information on collaborative projects. SC.7.TI.1.2

3 Identify how media is used to influence information. SC.7.TI.1.3

4 Analyze technology-related career paths. SC.7.TI.1.4

5 Summarize the historical impact of digital media and communication. SC.7.TI.1.5

6 Explore the innovation of computer components. SC.7.TI.1.6

2 **Recognize the regulations surrounding the use of information.** SC.7.TI.2

1 Describe legal and ethical behaviors when using information and technology and describe the consequences of misuse. SC.7.TI.2.1

2 Describe and model responsible use of modern communication media and devices. SC.7.TI.2.2

3 Recognize the legal use of modern communication media and devices. SC.7.TI.2.3

4 Explore the ethical use of collected data. SC.7.TI.2.4

5 Explain how copyright law and licensing protect the owner of intellectual property. SC.7.TI.2.5

Emerging Technology Strand

1 **Recognize emerging technologies that impact daily life.** SC.7.ET.1

1 Investigate the latest technologies and the potential they have to improve our lives at home, work and in society. SC.7.ET.1.1

2 Explore emerging technologies that have the potential to impact education. SC.7.ET.1.2

2 **Recognize Artificial Intelligence (AI) and its applications.** SC.7.ET.2

1 Explore future technologies and the role artificial intelligence (AI) may play. SC.7.ET.2.1

3 **Recognize characteristics of robotics.** SC.7.ET.3

1 Describe ways in which adaptive technologies can assist users in their daily lives. SC.7.ET.3.1

2 Identify ways humans interact with computers. SC.7.ET.3.2

3 Identify ways humans interact with hardware components. SC.7.ET.3.3

Cyber Security Strand

1 **Describe the physical security of devices.** SC.7.CS.1

1 Describe data in its three states and potential threats to each state. SC.7.CS.1.1

2 Explain the concept of access control and how to limit access to authorized users. SC.7.CS.1.2

3 Examine the basics of cybersecurity needs for business, government and organizations. SC.7.CS.1.3

4 List and define the elements of the confidentiality, integrity and availability (CIA) triad. SC.7.CS.1.4

5 Explain components of access control. SC.7.CS.1.5

6 Identify the characteristics of strong versus weak passwords in data and identity security. SC.7.CS.1.6

7 Explain the proper use and operation of security technologies. SC.7.CS.1.7

8 Identify actions that protect electronic devices. SC.7.CS.1.8

2 **Investigate the interactions of network devices.** SC.7.CS.2

1 Define the Internet of Things (IoT). SC.7.CS.2.1

3 **Explore the attributes of social engineering.** SC.7.CS.3

1 Identify the types of cyberattacks. SC.7.CS.3.1

2 Explore social engineering attacks. SC.7.CS.3.2

3 Identify data vulnerabilities. SC.7.CS.3.3