

Florida Computer Science Standards Alignment with CodeX Curriculum

	Unit 1	Unit 2	Unit 3
Communication and Collaboration			
SC.68.CS-CC.1.1 Demonstrate an ability to communicate appropriately through various online tools.			
SC.68.CS-CC.1.2 Apply productivity and or multimedia tools for local and global group collaboration.			
SC.68.CS-CC.1.3 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.			
Communication Systems and Computing			
SC.68.CS-CS.1.1 Examine connections between elements of mathematics and computer science including binary numbers, logic, sets, and functions.			
SC.68.CS-CS.1.2 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.			
SC.68.CS-CS.1.3 Evaluate what kinds of real-world problems can be solved using modeling and simulation.			
SC.68.CS-CS.1.4 Interact with content-specific models and simulations to support learning, research and problem solving (e.g., immigration, international trade, invasive species).			
SC.68.CS-CS.2.1 Create, modify, and use a database (e.g., define field formats, adding new records, manipulate data) to analyze data and propose solutions for a task/problem, individually and collaboratively.			
SC.68.CS-CS.2.2 Solve real-life issues in science and engineering (i.e., generalize a solution to openended problems) using computational thinking skills.	[1]		
SC.68.CS-CS.2.3 Perform a variety of operations such as sorting, filtering, and searching in a database.			
SC.68.CS-CS.2.4 Organize and display information in a variety of ways such as number formats (e.g., scientific notation, percentages, and exponents), charts, tables and graphs.			
SC.68.CS-CS.2.5 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.			
SC.68.CS-CS.2.6 Create a program that implements an algorithm to achieve a given goal, individually and collaboratively.			
SC.68.CS-CS.2.7 Design solutions that use repetition and two-way selection (e.g., for, while, if/else).	[2]		
SC.68.CS-CS.2.8 Recognize that boundaries need to be taken into account for an algorithm to produce correct results.			
SC.68.CS-CS.2.9 Identify simple data types and data structures.	[3]		
SC.68.CS-CS.2.10 Recognize that more than one algorithm can solve a given problem.			
SC.68.CS-CS.2.11 Predict outputs while showing an understanding of inputs.			
SC.68.CS-CS.2.12 Select the 'best' algorithm based on a given criteria (e.g., time, resource, and accessibility) to solve a problem, individually and collaboratively.			
SC.68.CS-CS.2.13 Explore a problem domain using iterative development and debugging.	[4]		
SC.68.CS-CS.2.14 Perform program tracing to predict the behavior of programs.	[5]		
SC.68.CS-CS.3.1 Explain why different file types exist (e.g., formats for word processing, images, music, and three-dimensional drawings).			
SC.68.CS-CS.3.2 Identify the kinds of content associated with different file types.			

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SC.68.CS-CS.3.3 Integrate information from multiple file formats into a single artifact.			
SC.68.CS-CS.4.1 Identify and describe the function of the main internal parts of a basic computing device (e.g., motherboard, hard drive, Central Processing Unit -CPU).			
SC.68.CS-CS.4.2 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).			
SC.68.CS-CS.4.3 Describe the relationships between hardware and software (e.g., BIOS, operating systems and firmware).			
SC.68.CS-CS.4.4 Identify and describe the use of sensors, actuators, and control systems in an embodied system (e.g., a robot, an e-textile, installation art, and a smart room).			
SC.68.CS-CS.4.5 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).			
SC.68.CS-CS.4.6 Describe the essential characteristics of a software artifact.			
SC.68.CS-CS.4.7 Describe the major components and functions of computer systems and networks.			
SC.68.CS-CS.4.8 Identify software used to support specialized forms of human-computer interaction.			
SC.68.CS-CS.5.1 Describe how information, both text and non-text, is translated and communicated between digital computers over a computer network.			
SC.68.CS-CS.5.2 Explain the difference between physical (wired), local area wireless, and mobile networks.			
SC.68.CS-CS.5.3 Identify the major components of a network.			
SC.68.CS-CS.6.1 Explain why some tasks can be accomplished more easily by computers.			
SC.68.CS-CS.6.2 Describe how humans and machines interact to accomplish tasks that cannot be accomplished by either alone.			
SC.68.CS-CS.6.3 Identify novel ways humans interact with computers, including software, probes, sensors, and handheld devices.			
SC.68.CS-CS.6.4 Describe ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).			
SC.68.CS-CS.6.5 Identify factors that distinguish humans from machines.			
SC.68.CS-CS.6.6 Design and demonstrate the use of a device (e.g., robot, e-textile) to accomplish a task, individually and collaboratively.			
Computer Practices and Programming			
SC.68.CS-CP.1.1 Define parameters for individual and collaborative projects using Boolean logic (e.g., using "not", "or", "and").			
SC.68.CS-CP.1.2 Select and use data-collection technology (e.g., probes, handheld devices, geographic mapping systems and output from multiple runs of a computer program) to gather, view, organize, analyze, and report results for content-related problems, individually and collaboratively.			
SC.68.CS-CP.2.1 Develop problem solutions using visual representations of problem states, structures and data.			
SC.68.CS-CP.2.2 Evaluate the logical flow of a step-by-step program by acting it out through computerfree activities.			
SC.68.CS-CP.2.3 Develop problem solutions using a block programming language, including all of the following: looping behavior, conditional statements, expressions, variables, and functions.			

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SC.68.CS-CP.2.4 Develop problem solutions using a programming language, including all of the following: looping behavior, conditional statements, expressions, variables, and functions.	[6]		
SC.68.CS-CP.3.1 Select appropriate tools and technology resources to accomplish a variety of tasks and solve problems.			
SC.68.CS-CP.3.2 Create online content (e.g., webpage, blog, digital portfolio, multimedia), using advanced design tools.			
SC.68.CS-CP.3.3 Create an artifact (independently and collaboratively) that answers a research question and communicates results and conclusions.			
Personal, Community, Global, and Ethical Impact			
SC.68.CS-PC.1.1 Recognize and describe legal and ethical behaviors when using information and technology and describe the consequences of misuse.			
SC.68.CS-PC.1.2 Describe and use safe and appropriate practices when participating in online communities (e.g., discussion groups, blogs, and social networking sites).			
SC.68.CS-PC.1.3 Evaluate the proper use and operation of security technologies (e.g., passwords, virus protection software, spam filters, pop-up blockers, and cookies).			
SC.68.CS-PC.1.4 Recognize the impacts and consequences of plagiarism on the development of creative works, projects, publications and online content.			
SC.68.CS-PC.2.1 Analyze the positive and negative impacts of computing, social networking and web technologies on human culture.			
SC.68.CS-PC.2.2 Explain the possible consequences of cyberbullying and inappropriate use of social media on personal life and society.			
SC.68.CS-PC.2.3 Describe the influence of access to information technologies over time and the effects those changes have had on education, the workplace, and the global society.			
SC.68.CS-PC.2.4 Describe how the unequal net-neutrality and distribution of computing resources in a global economy raises issues of equity, access, and power.			
SC.68.CS-PC.2.5 Describe ways in which adaptive technologies can assist users with special needs to function in their daily lives.			
SC.68.CS-PC.2.6 Identify and discuss the technology skills needed in the workplace.			
SC.68.CS-PC.2.7 Interpret writings and/or communications which use developmentally appropriate terminology.			
SC.68.CS-PC.2.8 Identify interdisciplinary careers that are enhanced by computer science.			
SC.68.CS-PC.3.1 Answer research questions using digital information resources.			
SC.68.CS-PC.3.2 Analyze how media and technology can be used to distort, exaggerate, or misrepresent information.			
SC.68.CS-PC.3.3 Describe strategies for determining the reliability of resources or information on the Internet.			
SC.68.CS-PC.3.4 Identify peer reviewed resources and understand the need for peer review.			
SC.68.CS-PC.3.5 Identify resources such as city, state, and federal government websites and explain that these resources can be used for communication between citizens and government.			
SC.68.CS-PC.4.1 Explain the guidelines for the fair use of downloading, sharing or modifying of digital materials.			
SC.68.CS-PC.4.2 Explain how copyright law and licensing protect the owner of intellectual properties.			
SC.68.CS-PC.4.3 Explain the possible consequences of violating intellectual property law.			

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SC.68.CS-PC.4.4 Identify threats and actions that protect devices from viruses, intrusion, vandalism, and other malicious activities.			
SC.68.CS-PC.4.5 Demonstrate compliance with the school's Acceptable Use Policy.			
SC.68.CS-PC.4.6 Generate text and non-text citations using digital citation tool.			

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Communication and Collaboration			
SC.912.CS-CC.1.1 Evaluate modes of communication and collaboration.			
SC.912.CS-CC.1.2 Select appropriate tools within a project environment to communicate with project team members.			
SC.912.CS-CC.1.3 Collect, analyze, and present information using a variety of computing devices (e.g., probes, sensors, and handheld devices).			
SC.912.CS-CC.1.4 Develop a collaborative digital product using collaboration tools (e.g., version control systems and integrated development environments).			
SC.912.CS-CC.1.5 Communicate and publish key ideas and details to a variety of audiences using digital tools and media-rich resources.			
SC.912.CS-CC.1.6 Identify how collaboration influences the design and development of software artifacts.			
SC.912.CS-CC.1.7 Evaluate program designs and implementations written by others for readability and usability.			
Communication Systems and Computing			
SC.912.CS-CS.1.1 Analyze data and identify real-world patterns through modeling and simulation.			
SC.912.CS-CS.1.2 Formulate, refine, and test scientific hypotheses using models and simulations.			
SC.912.CS-CS.1.3 Explain how data analysis is used to enhance the understanding of complex natural and human systems.			
SC.912.CS-CS.1.4 Compare techniques for analyzing massive data collections.			
SC.912.CS-CS.1.5 Represent and understand natural phenomena using modeling and simulation.			
SC.912.CS-CS.2.1 Explain intractable problems and understand that problems exist that are computationally unsolvable (e.g., classic intractable problems include the Towers of Hanoi and the Traveling Salesman Problem -TSP).			
SC.912.CS-CS.2.2 Describe the concept of parallel processing as a strategy to solve large problems.			
SC.912.CS-CS.2.3 Demonstrate concurrency by separating processes into threads of execution and dividing data into parallel streams.			
SC.912.CS-CS.2.4 Divide a complex problem into simpler parts by using the principle of abstraction to manage complexity (i.e., by using searching and sorting as abstractions) using predefined functions and parameters, classes, and methods.			
SC.912.CS-CS.2.5 Evaluate a classical algorithms and implement an original algorithm.			
SC.912.CS-CS.2.6 Evaluate various data types and data structures.	[7]		
SC.912.CS-CS.2.7 Explain how sequence, selection, iteration, and recursion are building blocks of algorithms.			
SC.912.CS-CS.2.8 Decompose a problem by defining new functions and classes.		[8]	
SC.912.CS-CS.2.9 Evaluate ways to characterize how well algorithms perform and that two algorithms can perform differently for the same task.			
SC.912.CS-CS.2.10 Design and implement a simple simulation algorithm to analyze, represent, and understand natural phenomena.			
SC.912.CS-CS.2.11 Evaluate algorithms by their efficiency, correctness, and clarity (e.g., by analyzing and comparing execution times, testing with multiple inputs or data sets, and by debugging).			
SC.912.CS-CS.2.12 Compare and contrast simple data structures and their uses.			

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SC.912.CS-CS.2.13 Explain how automated software testing can reduce the cost of the testing effort.			
SC.912.CS-CS.2.14 Explain what tools are applied to provide automated testing environments.			
SC.912.CS-CS.3.1 Describe digital tools or resources to use for a real-world task based on their efficiency and effectiveness.			
SC.912.CS-CS.3.2 Evaluate different file types for different purposes (e.g., word processing, images, music, and three-dimensional drawings).			
SC.912.CS-CS.4.1 Describe a software development process that is used to solve problems at different software development stages (e.g., design, coding, testing, and verification).			
SC.912.CS-CS.4.2 Describe the organization of a computer and identify its principal components by name, function, and the flow of instructions and data between components (e.g., storage devices, memory, CPU, graphics processors, IO and network ports).			
SC.912.CS-CS.4.3 Differentiate between multiple levels of hardware and software (such as CPU hardware, operating system, translation, and interpretation) that support program execution.			
SC.912.CS-CS.4.4 Evaluate various forms of input and output (e.g., IO and storage devices and digital media).			
SC.912.CS-CS.4.5 Develop and evaluate criteria for purchasing or upgrading computer system hardware (e.g., Wi-Fi, mobile devices, home and office machines).			
SC.912.CS-CS.4.6 Develop criteria for selecting appropriate hardware and software when solving a specific real-world problem (such as business, educational, personal).			
SC.912.CS-CS.4.7 Develop a software artifact (independently and collaboratively) in phases (or stages) according to a common software development methodology (e.g., Waterfall or Spiral model).			
SC.912.CS-CS.4.8 Evaluate the basic components of computer networks.			
SC.912.CS-CS.4.9 Analyze historical trends in hardware and software to assess implications on computing devices for the future			
SC.912.CS-CS.5.1 Identify and select the most appropriate file format based on trade-offs (e.g., open file formats, text, proprietary and binary formats, compression and encryption formats).			
SC.912.CS-CS.5.2 Describe the issues that impact network functionality (e.g., latency, bandwidth, firewalls and server capability).			
SC.912.CS-CS.5.3 Describe common network protocols, such as IP, TCP, SMTP, HTTP, and FTP, and how these are applied by client-server and peer-to-peer networks.			
SC.912.CS-CS.6.1 Describe the unique features of computers embedded in mobile devices and vehicles.			
SC.912.CS-CS.6.2 Describe the common physical and cognitive challenges faced by users when learning to use software and hardware.			
SC.912.CS-CS.6.3 Describe the process of designing software to support specialized forms of human/computer interaction.			
SC.912.CS-CS.6.4 Explain the notion of intelligent behavior through computer modeling and robotics.			
SC.912.CS-CS.6.5 Describe common measurements of machine intelligence (e.g., Turing test).			
SC.912.CS-CS.6.6 Describe a few of the major branches of artificial intelligence (e.g., expert systems, natural language processing, machine perception, machine learning).Design and demonstrate the use of a device (e.g., robot, e-textile) to accomplish a task, individually and collaboratively.			
SC.912.CS-CS.6.7 Describe major applications of artificial intelligence and robotics, including, but not limited to, the medical, space, and automotive fields.			

Computer Practices and Programming

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SC.912.CS-CP.1.1 Evaluate effective uses of Boolean logic (e.g., using “not”, “or”, “and”) to refine searches for individual and collaborative projects.			
SC.912.CS-CP.1.2 Perform advanced searches to locate information and/or design a data-collection approach to gather original data (e.g., qualitative interviews, surveys, prototypes, and simulations).			
SC.912.CS-CP.1.3 Analyze and manipulate data collected by a variety of data collection techniques to support a hypothesis.			
SC.912.CS-CP.1.4 Collect real-time data from sources such as simulations, scientific and robotic sensors, and device emulators, using this data to formulate strategies or algorithms to solve advanced problems.			
SC.912.CS-CP.2.1 Explain the program execution process (by an interpreter and in CPU hardware)			
SC.912.CS-CP.2.2 Design and implement a program using global and local scope.			
SC.912.CS-CP.2.3 Implement a program using an industrial-strength integrated development environment.			
SC.912.CS-CP.2.4 Facilitate programming solutions using application programming interfaces (APIs) and libraries.	[9]		
SC.912.CS-CP.2.5 Explain the role of an API in the development of applications and the distinction between a programming language’s syntax and the API.			
SC.912.CS-CP.2.6 Describe a variety of commonly used programming languages.			
SC.912.CS-CP.2.7 Classify programming languages by paradigm and application domain (e.g., imperative, functional, and logic languages) and evaluate their application to domains such as web programming, symbolic processing and data/numerical processing.			
SC.912.CS-CP.3.1 Create a computational artifact, individually and collaboratively, followed by reflection, analysis, and iteration (e.g., data-set analysis program for science and engineering fair, capstone project that includes a program, term research project based on program data).			
SC.912.CS-CP.3.2 Create mobile computing applications and/or dynamic web pages through the use of a variety of design and development tools, programming languages, and mobile devices/emulators.			
Personal, Community, Global, and Ethical Impact			
SC.912.CS-PC.1.1 Compare and contrast appropriate and inappropriate social networking behaviors.			
SC.912.CS-PC.1.2 Describe and demonstrate ethical and responsible use of modern communication media and devices.			
SC.912.CS-PC.1.3 Evaluate the impacts of irresponsible use of information (e.g., plagiarism and falsification of data) on collaborative projects.			
SC.912.CS-PC.1.4 Explain the principles of cryptography by examining encryption, digital signatures, and authentication methods (e.g., explain why and how certificates are used with “https” for authentication and encryption).			
SC.912.CS-PC.1.5 Implement an encryption, digital signature, or authentication method.			
SC.912.CS-PC.1.6 Describe computer security vulnerabilities and methods of attack, and evaluate their social and economic impact on computer systems and people.			
SC.912.CS-PC.2.1 Describe how the Internet facilitates global communication.			
SC.912.CS-PC.2.2 Identify ways to use technology to support lifelong learning.			
SC.912.CS-PC.2.3 Discuss and analyze the impact of values and points of view that are presented in media messages (e.g., racial, gender, and political).			
SC.912.CS-PC.2.4 Analyze the positive and negative impacts of technology on popular culture and personal life.			
SC.912.CS-PC.2.5 Construct strategies to combat cyberbullying or online harassment.			

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SC.912.CS-PC.2.6 Describe the impact of computing on business and commerce (e.g., automated inventory processing, financial transactions, e-commerce, virtualization, and cloud computing).			
SC.912.CS-PC.2.7 Describe how technology has changed the way people build and manage organizations and how technology impacts personal life.			
SC.912.CS-PC.2.8 Evaluate ways in which adaptive technologies may assist users with special needs.			
SC.912.CS-PC.2.9 Explain how societal and economic factors are affected by access to critical information.			
SC.912.CS-PC.2.10 Describe and evaluate the challenges (e.g., political, social, and economic) in providing equal access and distribution of technology in a global society.			
SC.912.CS-PC.2.11 Construct writings and/or communications using developmentally appropriate terminology.			
SC.912.CS-PC.2.12 Explore a variety of careers to which computing is central.			
SC.912.CS-PC.2.13 Predict future careers and the technologies that may exist based on current technology trends.			
SC.912.CS-PC.3.1 Evaluate the quality of digital resources for reliability (i.e., currency, relevancy, authority, accuracy, and purpose of digital information).			
SC.912.CS-PC.3.2 Evaluate the accuracy, relevance, comprehensiveness, appropriateness, and bias of electronic information resources.			
SC.912.CS-PC.3.3 Conduct research using peer reviewed articles, newspapers, magazine articles, and online books			
SC.912.CS-PC.3.4 Analyze and evaluate public/government resources and describe how using these resources for communication can affect change.			
SC.912.CS-PC.4.1 Describe how different types of software licenses (e.g., open source and proprietary licenses) can be used to share and protect intellectual property.			
SC.912.CS-PC.4.2 Explain how access to information may not include the right to distribute the information.			
SC.912.CS-PC.4.3 Describe differences between open source, freeware, and proprietary software licenses, and how they apply to different types of software.			
SC.912.CS-PC.4.4 Describe security and privacy issues that relate to computer networks.			
SC.912.CS-PC.4.5 Identify computer-related laws and analyze their impact on digital privacy, security, intellectual property, network access, contracts, and harassment.			
SC.912.CS-PC.4.6 Describe security and privacy issues that relate to computer networks including the permanency of data on the Internet, online identity, and privacy.			
SC.912.CS-PC.4.7 Evaluate and use digital citation tools to cite sources.			
SC.912.CS-PC.4.8 Describe the impact of government regulation on privacy and security.			

[1] These could be covered in the remixes.

[2] 4.7 begins the use of if else statements

6.4 begins the use of while loops

[3] 4.2 discusses data types

[4] 3.5 introduces the debugger

[5] Code Tracing is introduced in the teachers' manual

[6] All of our missions starting in mission 4 remixes have you to develop problem solutions

[7] Mission 4 begins the introduction of data types

[8] Mission 9 has you begin to create and call your own functions

[9] all of our missions use libraries and explain them