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THE GOAL FOR EACH STUDENT IS PROFICIENCY IN ALL REQUIREMENTS AT CURRENT AND PREVIOUS GRADES.	Unit 1	Unit 2	Unit 3
Computational Thinking and Problem Solving			
CT.1.5.1 Demonstrate basic steps of algorithmic problem solving with or without a computer.	[1]		
CT.2.5.1 Compare and contrast the relative positions of objects using ordered pairs within a program (e.g., battleships, block-based programming, treasure maps).			
CT.3.5.1 Evaluate effective ways that collaboration can support problem solving and innovation.			
Data and Information			
D.4.5.1 Illustrate how different kinds of data can be represented.			
D.4.5.2 Recognize that binary is a way of representing data using only two options (e.g., on/off).			
D.5.5.1 Evaluate, select, and use appropriate tools to collect data.			
D.5.5.2 Identify the characteristics (e.g., collection environment, units of measure, input method) of the collected data.			
D.5.5.3 Evaluate the most effective ways to collect, arrange, and visually represent data.			
D.6.5.1 Explore various models and simulations (e.g., ecosystems, epidemics, molecular dynamics) to support learning and research.			
Algorithms and Programs			
A.7.5.1 Create algorithms to solve a problem.	[2]		
A.7.5.2 Compare and contrast algorithms of appropriate complexity.			
A.7.5.3 Identify and correct multiple errors within an algorithm that solves a problem.	[3]		
A.7.5.4 Design and test algorithms of appropriate complexity collaboratively.			
A.8.5.1 Use a visual block-based and/or textbased programming language programming language individually and collaboratively to solve problems of increasing complexity.	[4]		
Computers and Communications			
CC.9.5.1 Examine the range and types of careers that require computing and technology.			
CC.9.5.2 Discuss ways that a human creates input for a desired output through a device (e.g., texting, changing device settings).			
CC.10.5.1 Demonstrate an appropriate level of proficiency with keyboards and other input/output devices (e.g., printer, student response systems, texting/instant messaging, voice assist).			
CC.10.5.2 Recognize the expense of the equipment, how care and protection of the computers can prolong use and save the cost of purchasing new equipment, therefore benefiting all students.			
CC.10.5.3 Demonstrate touch typing techniques, not looking at keyboard, while increasing speed and maintaining accuracy.			
CC.10.5.4 Practice proper keyboarding technique: posture, elbows down, and body centered in front of keyboard.			
CC.11.5.1 Use and evaluate productivity technology tools (e.g., word processing, spreadsheet, presentation software) for effectiveness in writing, communication, and publishing activities.			
CC.11.5.2 Identify that information can be transmitted using many computing devices via a network.			
CC.11.5.3 Describe the unique features of a variety of computing devices that execute programs using processors (e.g., mobile devices, automobiles, airplanes).			
CC.11.5.4 Apply strategies for solving simple hardware and software problems that may occur during use. (e.g., refresh the webpage, restart the device).			
Community, Global, and Ethical Impacts			
CGE.12.5.1 Explain positive and negative impact of technology (e.g., mobile computing and communication, web technologies, digital security, virtualization) on the daily life of individuals and society.			
CGE.12.5.2 Demonstrate an understanding of the appropriate use of technology and information and the consequences of inappropriate use.			
CGE.12.5.3 Compare the credibility, bias, accuracy, and relevance of electronic information sources.			
GCE.12.5.4 Demonstrate an understanding of ethical issues in copyright, fair use, and intellectual property in various media (e.g., music, graphics, video, etc.).			
GCE.12.5.5 Discuss the impact of access to computing resources.			

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Computational Thinking and Problem Solving			
CT.1.6.1 Select basic steps to solve algorithmic problems.	[5]		
CT.2.6.2 Discuss binary numbers, logic, sets, and functions and their application to computer science.			
CT.2.6.3 Describe events as subsets of a sample set identifying unions, intersections, and complements (e.g., describing information sorted with a Venn diagram).			
CT.2.6.4 Select variables that appropriately represent data.	[6]		
CT.3.6.1 Analyze appropriate collaborative behaviors (e.g., providing useful feedback, integrating feedback, understanding and accepting multiple perspectives, using socialization) to solve problems .			
Data and Information			
D.4.6.1 Represent a variety of data in multiple formats,			
D.4.6.2 Discuss how and why binary is used to represent data in a computer.			
D.5.6.1 Collect data using a variety of tools (e.g., analog, digital).	[7]		
D.5.6.2 Describe the characteristics (e.g., collection environment, units of measure, input method) of the collected data.			
D.5.6.3 Evaluate the most effective ways to collect, arrange, and visually represent data.			
D.6.5.1 Explore various models and simulations (e.g., ecosystems, epidemics, molecular dynamics) to support learning and research.			
D.6.6.1 Compare various problems that can be solved using modeling and simulation.			
Algorithms and Programs			
A.7.6.1 Create algorithms to solve problems and evaluate their effectiveness.	[8]		
A.7.6.2 Compare and contrast algorithms of appropriate complexity.			
A.7.6.3 Identify and correct errors within multiple algorithms.	[9]		
A.7.6.4 Design and test algorithms of appropriate complexity collaboratively.			
A.8.6.1 Use a visual block-based and/or textbased programming language programming language individually and collaboratively to solve problems of increasing complexity.	[10]		
Computers and Communications			
CC.9.6.1 Investigate a career that requires computing and technology.			
CC.9.6.2 Identify what distinguishes humans from machines focusing on human intelligence versus machine intelligence (e.g., robot motion, speech and language understanding, and computer vision).			
CC.10.6.1 Demonstrate an appropriate level of proficiency with keyboards and other input/output devices (e.g., printer, student response systems, texting/instant messaging, voice assist).			
CC.10.6.2 Recognize the expense of the equipment, how care and protection of the computers can prolong use and save the cost of purchasing new equipment, therefore benefiting all students.			
CC.10.6.3 Demonstrate touch typing techniques while increasing speed and maintaining accuracy.			
CC.10.6.4 Practice proper keyboarding technique: posture, elbows down, and body centered in front of keyboard.			
CC.11.6.1 Apply productivity/multimedia tools to support communication throughout the curriculum.			
CC.11.6.2 Describe how information can be transmitted by many computing devices via a network.			
CC.11.6.4 Apply strategies for solving simple hardware and software problems that may occur during use.			
Community, Global, and Ethical Impacts			
CGE.12.6.1 Demonstrate an understanding of positive and negative impact of technology (e.g., mobile computing and communication, web technologies, digital security, virtualization) on the daily life of individuals and society.			
CGE.12.6.2 Discuss the difference between appropriate, legal, and ethical uses of technology.			
CGE.12.6.3 Demonstrate an understanding of the credibility, bias, accuracy, relevance, age appropriateness, and comprehensiveness of electronic information sources.			
GCE.12.6.4 Demonstrate ethical uses in copyright, fair use, and intellectual property in various media (e.g., music, graphics, video, etc.).			
GCE.12.6.5 Demonstrate an understanding of the impact of access to computing resources.			

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THE GOAL FOR EACH STUDENT IS PROFICIENCY IN ALL REQUIREMENTS AT CURRENT AND PREVIOUS GRADES.	Unit 1	Unit 2	Unit 3
Computational Thinking and Problem Solving			
CT.1.7.1 Evaluate basic steps of algorithmic problem solving to design solutions.	[11]		
CT.1.7.2 Compare and contrast examples of high level and low level programming languages.			
CT.2.7.2 Examine binary numbers, logic, sets, and functions and their application to computer science.			
CT.2.7.3 Create compound statements that represent unions, intersections, and complements using OR, AND, and NOT (e.g., writing statements from information sorted with a Venn diagram).			
CT.2.7.4 Construct expressions and equations.	[12]		
CT.3.7.1 Demonstrate appropriate collaborative behaviors (e.g., providing useful feedback, integrating feedback, understanding and accepting multiple perspectives, using socialization) to solve problems .			
Data and Information			
D.4.7.1 Evaluate the effectiveness of visual representations of data.			
D.4.7.2 Discuss how American Standard Code for Information Interchange (ASCII) codes represent data in a computer.			
D.5.7.1 Collect data from multiple sources using a variety of tools (e.g., analog, digital).	[13]		
D.5.7.2 Analyze the quality of collected data, based on its characteristics (e.g., temperatures gathered at different scale) to determine the value provided to the user.			
D.5.7.3 Evaluate the most effective ways to collect, arrange, and visually represent data.			
D.6.7.1 Evaluate the effectiveness of a model/simulation with a peer.			
D.6.7.2 Examine techniques for creating models and simulations to be used for data analysis.			
Algorithms and Programs			
A.7.7.1 Create algorithms to solve problems and evaluate their effectiveness using constraints (e.g., solution time, maximum number of steps).	[14]		
A.7.7.2 Compare and contrast algorithms of appropriate complexity.			
A.7.7.3 Identify and correct multiple errors within a program.	[15]		
A.7.7.4 Design and test algorithms of appropriate complexity collaboratively.			
A.8.7.1 Use a visual block-based and/or textbased programming language programming language individually and collaboratively to solve problems of increasing complexity.	[16]		
Computers and Communications			
CC.9.7.1 Describe how computer science enhances other career fields.			
CC.9.7.2 Describe ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).			
CC.10.7.1 Demonstrate an appropriate level of proficiency with keyboards and other input/output devices (e.g., printer, student response systems, texting/instant messaging, voice assist).			
CC.10.7.2 Recognize the expense of the equipment, how care and protection of the computers can prolong use and save the cost of purchasing new equipment, therefore benefiting all students.			
CC.10.7.3 Demonstrate touch typing techniques while increasing speed and maintaining accuracy.			
CC.10.7.4 Practice proper keyboarding technique: posture, elbows down, and body centered in front of keyboard.			
CC.11.7.1 Apply productivity/multimedia tools to support communication throughout the curriculum.			
CC.11.7.2 Identify major components and functions of computer systems and networks.			
CC.11.7.4 Apply strategies for identifying and solving routine hardware and software problems that occur during everyday computer use.			
Community, Global, and Ethical Impacts			
CGE.12.7.1 Analyze changes in technology over time and the effects those changes have on the daily life of individuals and society.			
CGE.12.7.2 Demonstrate an understanding between appropriate, legal, and ethical uses of technology.			
CGE.12.7.3 Evaluate and discuss the credibility, bias, accuracy, relevance, age appropriateness, comprehensiveness, of electronic information sources concerning real-world problems.			
GCE.12.7.4 Demonstrate ethical uses in copyright, fair use, and intellectual property in various media (e.g., music, graphics, video, etc.).			
GCE.12.7.5 Demonstrate an understanding of the impact of access to computing resources on a global economy.			

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Computational Thinking and Problem Solving			
CT.1.8.1 Solve algorithmic problems of increasing complexity.	[17]		
CT.1.8.2 Investigate the notion of hierarchy in computing including high level languages, translations, instruction sets, and logic circuits.			
CT.2.8.2 Evaluate the relationship between binary and hexadecimal representations.			
CT.2.8.3 Create events as subsets of a sample set using logic (e.g., OR, AND, NOT, NOR, XOR).			
CT.2.8.4 Create a function, method, or similar construct with given parameters to be used within a computer program.	[18]		
CT.3.8.1 Demonstrate appropriate collaborative behaviors (e.g., providing useful feedback, integrating feedback, understanding and accepting multiple perspectives, using socialization) to solve problems of increasing complexity.			
Data and Information			
D.4.8.1 Create and analyze data representations of various artifacts.			
D.4.8.2 Discuss how and why hexadecimal codes are used to represent data in a computer.			
D.5.8.1 Critique data from multiple sources using a variety of tools (e.g., analog, digital).	[19]		
D.5.8.2 Collect data to be used for quality analysis.			
D.5.8.3 Evaluate the most effective ways to collect, arrange, and visually represent data.			
D.6.8.1 Analyze the degree to which a computer model accurately represents an actual situation.			
D.6.8.2 Create a model and/or simulation to be used for data analysis.			
Algorithms and Programs			
A.7.8.1 Create algorithms to solve problems of increasing complexity and evaluate their effectiveness using constraints (e.g., solution time, maximum number of steps).	[20]		
A.7.8.2 Compare and contrast algorithms of appropriate complexity.			
A.7.8.3 Identify and correct multiple errors within multiple programs.	[21]		
A.7.8.4 Design and test algorithms of appropriate complexity collaboratively using technology.			
A.8.8.1 Create a program individually and collaboratively using a text-based programming language.	[22]		
Computers and Communications			
CC.9.8.1 Predict the role of computer science in future careers.			
CC.9.8.2 Compare and contrast human intelligence and computer intelligence (e.g., emotional decision making versus logical decisions, common sense, literal versus abstract).			
CC.10.8.1 Demonstrate an appropriate level of proficiency with keyboards and other input/output devices (e.g., printer, student response systems, texting/instant messaging, voice assist).			
CC.10.8.2 Recognize the expense of the equipment, how care and protection of the computers can prolong use and save the cost of purchasing new equipment, therefore benefiting all students.			
CC.10.8.3 Demonstrate touch typing techniques while increasing speed and maintaining accuracy.			
CC.10.8.4 Practice proper keyboarding technique: posture, elbows down, and body centered in front of keyboard.			
CC.11.8.1 Design, develop, and publish/present products (e.g., videos, podcasts, websites) using technology resources that demonstrate and communicate curriculum concepts.			
CC.11.8.2 Describe major components and functions of computer systems and networks.			
CC.11.8.4 Apply strategies for identifying and solving routine hardware and software problems that occur during everyday computer use.			
Community, Global, and Ethical Impacts			
CGE.12.8.1 Analyze positive and negative impacts (e.g., workforce, economy, education, culture, environment) of technology on the world.			
CGE.12.8.2 Analyze the difference between appropriate, legal, and ethical uses of technology.			
CGE.12.8.3 Apply strategies for determining the reliability of information found on the Internet.			
GCE.12.8.4 Analyze ethical issues that relate to copyright, fair use and intellectual property in various media (e.g., music, graphics, video, etc.).			
GCE.12.8.5 Analyze the impact of the availability to computing resources on accessing critical information.			

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	Unit 1	Unit 2	Unit 3
The computer science 7-8 coding block is designed to be taught during a standalone block of time over a minimum of four to five weeks.			
Students will examine and formulate algorithms that solve specific problems.			
CT.1.B.1 Examine traditional programming algorithms, including searches and sorts.			
CT.1.B.2 Describe the steps needed to efficiently solve a problem.	[23]		
CT.1.B.3 Manually test algorithms with sample data to observe accuracy of anticipated output.			
Students will create programs that solve problems.			
A.2.B.1 Implement the following programming concepts: data types, variable declaration and initialization, assignment statements, conditional branching (e.g., if, if-else, multi-branch), iteration (e.g., while, do-while, for).	[24]		
A.2.B.2 Create a program using a text-based programming language.	[25]		
Students will analyze, test, and debug computer programs.			
A.3.B.1 Explain the logic involved in how a computer program executes.	[26]		
A.3.B.2 Utilize basic documentation/comments (e.g., program headers, pseudocode).	[27]		
A.3.B.3 Test a computer program with data and evaluate output for accuracy.			
A.3.B.4 Find and debug errors in a computer program.	[28]		

[1] Flowcharts are introduced in teachers' manual

[2] Begins with Mission 3 when you need to solve the delay problem so you can see all pixels

[3] Debugger is introduced in 3.5 for students to use to find and fix their errors

[4] Remixes cover this

[5] Pseudocodes are used to determine the steps your code will take in order to solve the problem

[6] 3.8 begins the use of variables

[7] The use of our different sensors and user choice with button presses

[8] Begins with Mission 3 when you need to solve the delay problem so you can see all pixels

[9] Debugger is introduced in 3.5 for students to use to find and fix their errors

[10] Remixes cover this

[11] Pseudocodes are used to determine the steps your code will take in order to solve the problem

[12] Mission 4 begins the use of expressions and equations

[13] The use of our different sensors and user choice with button presses

[14] Begins with Mission 3 when you need to solve the delay problem so you can see all pixels

[15] Debugger is introduced in 3.5 for students to use to find and fix their errors

[16] Remixes cover this

[17] Pseudocodes are used to determine the steps your code will take in order to solve the problem

[18] Mission 4 begins the use of functions

[19] The use of our different sensors and user choice with button presses

[20] Begins with Mission 3 when you need to solve the delay problem so you can see all pixels

[21] Debugger is introduced in 3.5 for students to use to find and fix their errors

[22] Remixes cover this

[23] This is covered with pseudocodes which are discussed in the Teachers' manual

[24] Mission 4 begins the use of data types, if-else statements, while statements, etc.

[25] All of our lessons are text based programs

[26] This is accomplished in the Code Tracing Charts, Flowcharts, and pseudocodes

[27] Pseudocodes are discussed in the teachers' manual and comments begin on lesson 5.5

[28] Debugger is introduced 3.5