AR CS Standards 4th Grade

4th Grade	Strand: Computational Thinking and Problem Solving	Content Cluster 1: Students will analyze problem-solving strategies.	CT.1.4.1 Examine the process of problem solving and how it applies to algorithmic problem solving
4th Grade	Strand: Computational Thinking and Problem Solving	Content Cluster 2: Students will analyze connections between elements of mathematics and computer science.	CT.2.4.1 Examine the relative position of objects using angles within a program (e.g., 30 degree turn)
4th Grade	Strand: Computational Thinking and Problem Solving	Content Cluster 3: Students will solve problems cooperatively and collaboratively.	CT.3.4.1 Construct innovative solutions to problems of increasing complexity collaboratively
4th Grade	Strand: Data and Information	Content Cluster 4: Students will analyze various ways in which data is represented.	D.4.4.1 Compare the representation of existing data in multiple formats
4th Grade	Strand: Data and Information	Content Cluster 4: Students will analyze various ways in which data is represented.	D.4.4.2 Use 0's and 1's to represent data (e.g., encode and decode a word with 0's and 1's)
4th Grade	Strand: Data and Information	Content Cluster 5: Students will collect, arrange, and represent data.	D.5.4.1 Compare and use appropriate tools to collect data
4th Grade	Strand: Data and Information	Content Cluster 5: Students will collect, arrange, and represent data.	D.5.4.2 Collect and arrange data logically based on multiple characteristics in teams and individually
4th Grade	Strand: Data and Information	Content Cluster 5: Students will collect, arrange, and represent data.	D.5.4.3 Compare different ways to visually represent data with pictographs, bar graphs, and line plots
4th Grade	Strand: Data and Information	Content Cluster 6: Students will interpret and analyze data and information.	D.6.4.1 Explore graphs as models for data analysis
4th Grade	Strand: Algorithms and Programs	Content Cluster 7: Students will create, evaluate, and modify algorithms	A.7.4.1 Create and follow algorithms to accomplish a task or solve a problem
4th Grade	Strand: Algorithms and Programs	Content Cluster 7: Students will create, evaluate, and modify algorithms	A.7.4.2 Compare and contrast algorithms of appropriate complexity

4th Grade	Strand: Algorithms and Programs	Content Cluster 7: Students will create, evaluate, and modify algorithms	A.7.4.3 Identify and correct multiple errors within an algorithm that accomplishes a task or solves a problem
4th Grade	Strand: Algorithms and Programs	Content Cluster 7: Students will create, evaluate, and modify algorithms	A.7.4.4 Design and test algorithms of appropriate complexity collaboratively using technology
4th Grade	Strand: Algorithms and Programs	Content Cluster 8: Students will create programs to solve problems.	A.8.4.1 Use a visual block-based programming language individually and collaboratively to solve problems of increasing complexity
4th Grade	Strand: Computers and Communications	Content Cluster 9: Students will analyze the utilization of computers.	CC.9.4.1 Identify a variety of careers that require computing and technology
4th Grade	Strand: Computers and Communications	Content Cluster 9: Students will analyze the utilization of computers.	CC.9.4.2 Recognize that computers perform actions or outputs based on input by humans (e.g., using a video game controller, typing and using a mouse)
4th Grade	Strand: Computers and Communications	Content Cluster 10: Students will utilize appropriate digital tools for various applications.	CC.10.4.1 Demonstrate an appropriate level of proficiency with keyboards and other input/output devices
4th Grade	Strand: Computers and Communications	Content Cluster 10: Students will utilize appropriate digital tools for various applications.	CC.10.4.2 Recognize the expense of the equipment and how care and protection of the computers can prolong use and save the cost of purchasing new equipment, therefore benefiting all students
4th Grade	Strand: Computers and Communications	Content Cluster 10: Students will utilize appropriate digital tools for various applications.	CC.10.4.3 Demonstrate touch typing techniques, not looking at fingers, while increasing speed and maintaining accuracy
4th Grade	Strand: Computers and Communications	Content Cluster 10: Students will utilize appropriate digital tools for various applications.	CC.10.4.4 Practice proper keyboarding technique: ● posture ● elbows down ● body centered in front of keyboard
4th Grade	Strand: Computers and Communications	Content Cluster 11: Students will analyze various components and functions of computers	CC.11.4.1 Use productivity technology tools for writing, communicating, and publishing activities

4th Grade	Strand: Computers and Communications	Content Cluster 11: Students will analyze various components and functions of computers	CC.11.4.2 Identify that information can be transmitted using computing devices via a network
4th Grade	Strand: Computers and Communications	Content Cluster 11: Students will analyze various components and functions of computers	CC.11.4.3 Identify a variety of computing devices that execute programs using processors (e.g., digital watch, home appliances, vehicles)
4th Grade	Strand: Computers and Communications	Content Cluster 11: Students will analyze various components and functions of computers	CC.11.4.4 Apply strategies for solving simple hardware and software problems that may occur during use
4th Grade	Strand: Community, Global, and Ethical Impacts	Content Cluster 12: Students will analyze appropriate uses of technology.	CGE.12.4.1 Identify and discuss positive and negative impacts of technology on the daily life of individuals and society
4th Grade	Strand: Community, Global, and Ethical Impacts	Content Cluster 12: Students will analyze appropriate uses of technology.	CGE.12.4.2 Discuss basic issues related to the appropriate use of technology and information, and the consequences of inappropriate use
4th Grade	Strand: Community, Global, and Ethical Impacts	Content Cluster 12: Students will analyze appropriate uses of technology.	CGE.12.4.3 Identify and discuss attributes of credible, unbiased, electronic information sources
4th Grade	Strand: Community, Global, and Ethical Impacts	Content Cluster 12: Students will analyze appropriate uses of technology.	CGE.12.4.4 Demonstrate an understanding of ethical issues in copyright, fair use, and intellectual property in various media