PLTW Launch Computer Science Standards Guide

Florida's State Academic Standards for Computer Science | K-5

PLTW Launch Modules have been thoughtfully connected to the FL State Academic Standards for use by Forida educators. Each grade level shows the PLTW Launch Modules that are the "best-fit" for the Science standards; for consistency, the same modules are used in this guide. When grade level suggestions vary from the intended grade level it is shown like this: ***Light and Sound (1)*** to indicate that the module was originally developed for use in 1st Grade.

Florida educators also have the flexibility to utilize the PLTW Launch Modules in the grade level that works best for their students.

Please note: The information included in this document is subject to change. As with all course materials, we will continue to update as more information becomes available.

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Kindergarten Computer Science

		Life Science: Living and Nonliving Things (PK)	Light and Sound (1)	Sunlight and Weather	Structure and Function: Exploring Design	Structure and Function: Human Body	Animals and Algorithms
Communication and Collaborations	**Develop an understanding of collaborative conversations** SC.K.CC.1.1 Provide positive feedback.	✓	✓	✓	✓	✓	✓
Personal Health and Safety	**Determine safe Internet practices** SC.K.HS.1.3 Discuss that a password helps protect the privacy of information.	✓	✓	✓	✓	✓	✓
	SC.K.HS.1.4 Explain that some information is private and should not be shared online or in person.	✓	✓	✓	✓	✓	✓
Computing Components	**Identify computer components** SC.K.CO.1.3 Identify tools used for creative expression.						✓
	SC.K.CO.1.4 Create a project that expresses thoughts and ideas.		✓				✓
Programming and Software Engineering	**Recognize that tasks are completed in a sequential order.** SC.K.PE.1.1 Discuss how a computer program is a set of instructions made by people to show a computer how to complete a task.						✓
	SC.K.PE.1.2 Develop a series of steps to complete a task. Example: Students brainstorm how to make a sandwich.						✓
	Identify data SC.K.PE.2.1 Recognize different types of data.			✓			
	SC.K.PE.2.2 Use different data representations to make comparisons.			✓			
	Introduce problem-solving SC.K.PE.3.1 Arrange or sort information.						✓
	SC.K.PE.3.2 Solve problems involving logical order thinking or sequencing with or without technology.	✓	✓	✓	✓	✓	✓
	SC.K.PE.3.3 Observe patterns of daily life and routines.			✓			✓
	SC.K.PE.3.4 Create and use repeating patterns using letters, numbers or symbols.						✓
Technological Impact	**Introduce the technological progress** SC.K.TI.1.1 Explore the use of technology in daily life.						✓

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1st Grade Computer Science

		Animal Adaptations	Designs Inspired by Naure	Living Things: Needs and Impacts (K)	Pushes and Pulls (K)	Light: Observing the Sun, Moon, and Stars	The Changing Earth (2)	Animated Storytelling
Communication and Collaborations	**Communicate information both individually and collaboratively.** SC.1.CC.1.1 Communicate and collaborate with teachers and other students with and without the use of technology.	✓	✓	✓	✓	✓	✓	✓
Computing Components	**Differentiate and utilize computer components** SC.1.CO.1.1 Recognize and operate different types of computer components.	✓	✓	✓	✓	✓	✓	✓
	SC.1.CO.1.2 Create and review projects using digital tools.		✓			✓		✓
	SC.1.CO.1.3 Identify tools that can be used for data collection.					✓		
	SC.1.CO.1.5 Demonstrate how to complete a task using a digital device.					✓	✓	✓
Programming and Software Engineering	**Demonstrate that coding is developing a set of instructions** SC.1.PE.1.1 Explain that a computer program can only follow a set of instructions made by people to complete a task.							✓
	SC.1.PE.2.3 Recognize the type of data needed to be collected and use it to solve a specific problem using models.				✓	✓		
	Recognize problem-solving strategies SC.1.PE.3.1 Create a pattern that can be repeated to complete a task.		✓					✓
	SC.1.PE.3.2 Extend a repeated pattern.		✓					✓
Technological Impact	**Comparing technological progress over time** SC.1.TI.1.2 Explore that individuals can use computing technology at home to perform many important tasks and functions.					✓		
	Recognize the importance of accurate information SC.1.TI.2.1 Identify why personal information should be kept private.	✓	✓	✓	✓	✓	✓	✓

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2nd Grade Computer Science

		Life Cycles and Survival (3)	Living Things: Diversity of Life	Stability and Motion: Forces and Interactions (3)	Materials Science: Properties of Matter	Grids and Games
Communication and Collaborations	**Communicate information with digital tools** SC.2.CC.1.4 Identify concepts illustrated by a simple simulation.	✓				
Personal Health and Safety	**Determine safe and unsafe Internet practices.** SC.2.HS.1.2 Demonstrate why personal or family member login usernames, passcodes, passwords and secure logins should not be shared with other people.	✓	✓	✓	✓	✓
	SC.2.HS.1.3 Discuss the difference between weak and strong passwords.	✓	✓	✓	✓	✓
	Discuss the development of healthy digital practices. SC.2.HS.2.1 Identify healthy digital use habits.					✓
Computing Components	**Evaluate computer components** SC.2.CO.1.5 Create and present a digital product.		✓		✓	
Programming and Software Engineering	**Introduce conditional logic** SC.2.PE.1.1 Construct code segments using tools that do not require a textual programming language.					✓
	Sort types of data SC.2.PE.2.2 Explore dividing a collection of data or objects into like groups.	✓	✓			
	SC.2.PE.2.3 Create data visualizations.		✓			
	Model problem-solving strategies SC.2.PE.3.1 Create a repeatable pattern, with or without technology, to solve a problem. Example: Use a word processor to create a repeated pattern using letters.					✓
	SC.2.PE.3.2 Develop a plan that could be used to create a story					✓
	SC.2.PE.3.4 Solve questions using models, simulations or data.	✓	✓		✓	
Technological Impact	**Identify technological progress.** SC.2.TI.1.1 Recognize that people use computing technology in the workplace or school to perform many important tasks and functions. Example: Interview family members to determine how they use technology in their work environment.					✓
	SC.2.TI.1.2 Recognize that people use computing technology at home to perform many important tasks and functions.					✓

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3rd Grade Computer Science

		Waves and the Properties of Light (4)	Materials Science: Form and Function (2)	Stability and Motion: Science of Flight	Weather: Factors and Hazards	Programming Patterns
Communication and Collaborations	**Assess how communication and collaboration are beneficial** SC.3.CC.1.1 Describe how collaborating with others can be beneficial to a project.	✓	✓	✓	✓	✓
	SC.3.CC.1.2 Use feedback from peers to make revisions using technology.	✓	✓	✓	✓	✓
	Identify uses of technology and responsible uses of modern communication SC.3.CC.2.2 Describe responsible uses of modern communication media and devices.	✓	✓	✓	✓	✓
Personal Health and Safety	**Determine safe and healthy Internet practices.** SC.3.HS.1.3 Explain what actions should be taken if students are either victims or witnesses of cyberbullying or harassment.	✓	✓	✓	✓	✓
	Explain healthy digital practices SC.3.HS.2.2 Demonstrate the use of healthy digital habits.	✓	✓	✓	✓	✓
Computing Components	**Differentiate and evaluate computer components** SC.3.CO.1.5 Use digital tools for sharing information.	✓	✓	✓	✓	✓
Programming and Software Engineering	**Explore coding concepts** SC.3.PE.1 Explore using graphics, blocks or visual cues to design a program.					✓
	SC.3.PE.2 Create a program that includes user choices based on defined conditions.					✓
	Organize types of data SC.3.PE.2.2 Compile data collected and draw conclusions based on trends			✓	✓	
	SC.3.PE.2.3 Analyze data for trends.			✓	✓	
	Develop problem-solving strategies SC.3.PE.3.2 Demonstrate how programs written differently can have the same outcome.					✓
	SC.3.PE.3.3 Use graphical programming or visual cues to represent a set of instructions (algorithm) that includes repetition.					✓

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4th Grade Computer Science

		Variation of Traits (3)	Ecosystems: Flow of Matter and Energy (5)	Environmental Changes (3)	Patterns in the Universe (5)	Earth: Past, Present, and Future	Input/Output: Human Brain	Input/Output: Computer Systems
Communication and Collaborations	**Demonstrate effective communication both individually and collaboratively.** SC.4.CC.1.1 Demonstrate ways that technology can foster teamwork. Example: Students can collaborate on geometric software to explore angle measures.	✓	✓	✓	✓	✓	✓	✓
	SC.4.CC.1.2 Demonstrate collaboration and problem-solving.	✓	✓	✓	✓	✓	✓	✓
	SC.4.CC.1.3 Discuss ways that collaboration can lead to innovation.	✓	✓	✓	✓	✓	✓	✓
	SC.4.CC.1.4 Explain why providing and receiving feedback from others can improve performance for projects.	✓	✓	✓	✓	✓	✓	✓
	Evaluate digital information resources SC.4.CC.2.1 Gather information from a variety of digital resources.		✓		✓	✓		
	SC.4.CC.2.2 Organize information from digital resources		✓		✓	✓		
Technological Impact	**Practice safe and healthy Internet practices** SC.4.HS.1.4 Identify the legal and social consequences of cyberbullying.	✓	✓	✓	✓	✓	✓	✓
	Explore the mental and physiological effects of digital device use. SC.4.HS.2.1 Identify the impact of digital device usage on behavior.							✓
Computing Components	**Introduce foundational computer literacy skills** SC.4.CO.1.2 Create and edit multimedia artifacts using digital tools.					✓		✓
	SC.4.CO.1.3 Publish multimedia artifacts using digital tools based on feedback.					✓		✓
	SC.4.CO.1.5 Troubleshoot digital problems that may occur during daily use.	✓	✓	✓	✓	✓	✓	✓
	SC.4.CO.1.7 Compare hardware and software.							✓
Programming and Software Engineering	**Explain the purpose of coding** SC.4.PE.1.2 Create a condition that will modify a situation or value in the program.							✓
	Classify visual representations of data SC.4.PE.2.1 Collect, organize and graph data.	✓	✓	✓	✓	✓	✓	✓
	SC.4.PE.3.2 Create a list of steps (algorithm) to solve a real-world problem.							✓
Technological Impact	**Research a period of technological progress** SC.4.TI.1.2 Explore and identify the functions of adaptive technologies and how they have changed over time.							✓

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5th Grade Computer Science

		Organisms: Structure and Function (4)	Energy Exploration (4)	Matter: Properties and Reactions	Earth's Water and Interconnected Systems	Earth: Human Impact and Natural Disasters (4)	Robotics and Automation	Robotics and Automation: Challenge	Infection: Detection	Infection: Modeling and Simulation
Communication and Collaborations	**Demonstrate effective communication** SC.5.CC.1.2 Demonstrate ways with or without technology that collaborating with others can support problem solving.	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SC.5.CC.1.3 Revise and refine thinking based on peer feedback.	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Utilize information gathered using digital resources SC.5.CC.2.1 Research and use information gathered from digital resources.	✓	✓	✓	✓	✓				
	SC.5.CC.2.2 Support ideas using collected evidence through research.	✓	✓	✓	✓	✓				
Personal Health and Safety	**Discuss the impact of digital media and communication** SC.5.HS.3.1 Explain the impact of digital media, communication and the consequences of cyberbullying and harassment.	✓	✓	✓	✓	✓	✓	✓	✓	✓
Computing Components	**Apply foundational computer literacy skills** SC.5.CO.1.2 Create a digital project that answers a research question, clearly communicating thoughts and ideas.	✓				✓				✓
Programming and Software Engineering	SC.5.PE.1.4 Detect and correct program errors.							✓		✓
	SC.5.PE.2.2 Identify data types and data structures.									✓
	Demonstrate problem-solving strategies SC.5.PE.3.1 Identify the concepts illustrated by a simulation that offers problems and solutions.									✓
	SC.5.PE.3.2 Solve problems using digital graphic organizers.			✓						
Technological Impact	**Present periods of technological progress** SC.5.TI.1.1 Explain how access to technology helps empower individuals and groups.									✓
	SC.5.TI.1.2 Explore various technology-related career paths.									✓