PLTW Launch Science Standards Guide

Florida State Academic Standards for Science | K-5

PLTW Launch Modules have been thoughtfully connected to Florida Standards for Florida educators. Each grade level has been connected to the PLTW Launch Modules that are the “best-fit” for the Florida State Academic Standards for Science. 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.

PLTW LAUNCH

Kindergarten

		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
Life Science	SC.K.L.14.1 Recognize the five senses and related body parts.						
	SC.K.L.14.3 Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.						
Physical Science	SC.K.P.10.1 Observe that things that make sound vibrate.						
Nature of Science	SC.K.N.1.1 Collaborate with a partner to collect information.						
	SC.K.N.1.2 Make observations of the natural world and know that they are descriptors collected using the five senses.						
	SC.K.N.1.3 Keep records as appropriate -- such as pictorial records -- of investigations conducted.						
	SC.K.N.1.4 Observe and create a visual representation of an object which includes its major features.						
	SC.K.N.1.5 Recognize that learning can come from careful observation.						

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1st Grade

		Animal Adaptations	Designs Inspired by Nature	Living Things: Needs and Impacts (K)	Pushes and Pulls (K)	Light: Observing the Sun, Moon, and Stars	The Changing Earth (2)	Animated Storytelling
Life Science	SC.1.L.14.1 Make observations of living things and their environment using the five senses.	■						
	SC.1.L.14.2 Identify the major parts of plants, including stem, roots, leaves, and flowers.		■					
	SC.1.L.16.1 Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population.		■					
	SC.1.L.17.1 Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.			■				
Physical Science	SC.1.P.12.1 Demonstrate and describe the various ways that objects can move, such as in a straight line, zigzag, back-and-forth, round-and-round, fast, and slow.				■			
	SC.1.P.13.1 Demonstrate that the way to change the motion of an object is by applying a push or a pull.				■			
	SC.1.P.8.1 Sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light), texture, and whether objects sink or float.	■						
Earth and Space Science	SC.1.E.5.1 Observe and discuss that there are more stars in the sky than anyone can easily count and that they are not scattered evenly in the sky.					■		
	SC.1.E.5.4 Identify the beneficial and harmful properties of the Sun.					■		
	SC.1.E.6.3 Recognize that some things in the world around us happen fast and some happen slowly.						■	
Nature of Science	SC.1.N.1.1 Raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.	■	■	■	■	■	■	■
	SC.1.N.1.3 Keep records as appropriate - such as pictorial and written records - of investigations conducted.	■	■	■	■	■	■	■

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2nd Grade

		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
Life Science	SC.2.L.16.1 Observe and describe major stages in the life cycles of plants and animals, including beans and butterflies.	■				
	SC.2.L.17.1 Compare and contrast the basic needs that all living things, including humans, have for survival.	■	■			
	SC.2.L.17.2 Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs.		■			
Physical Science	SC.2.P.13.2 Demonstrate that magnets can be used to make some things move without touching them.			■		
	SC.2.P.8.1 Observe and measure objects in terms of their properties, including size, shape, color, temperature, weight, texture, sinking or floating in water, and attraction and repulsion of magnets.				■	
	SC.2.P.8.2 Identify objects and materials as solid, liquid, or gas.				■	
	SC.2.P.8.4 Observe and describe water in its solid, liquid, and gaseous states.				■	
Nature of Science	SC.2.N.1.1 Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations.	■	■	■	■	■
	SC.2.N.1.5 Distinguish between empirical observation (what you see, hear, feel, smell, or taste) and ideas or inferences (what you think).			■	■	
	SC.2.N.1.6 Explain how scientists alone or in groups are always investigating new ways to solve problems.			■	■	

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3rd Grade

		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
Physical Science	SC.3.P.10.2 Recognize that energy has the ability to cause motion or create change.					
	SC.3.P.10.3 Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another.					
	SC.3.P.10.4 Demonstrate that light can be reflected, refracted, and absorbed.					
	SC.3.P.8.3 Compare materials and objects according to properties such as size, shape, color, texture, and hardness.					
Nature of Science	SC.3.N.1.1 Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.					
	SC.3.N.1.3 Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted.					
	SC.3.N.1.6 Infer based on observation.					
	SC.3.N.1.7 Explain that empirical evidence is information, such as observations or measurements, that is used to help validate explanations of natural phenomena.					
	SC.3.N.3.1 Recognize that words in science can have different or more specific meanings than their use in everyday language; for example, energy, cell, heat/cold, and evidence.					
	SC.3.N.3.2 Recognize that scientists use models to help understand and explain how things work.					

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4th Grade

		Variation of Traits (3)	Ecosystems: Flow of Matter and Energy (5)	Environmental Changes	Patterns in the Universe (5)	Earth: Past, Present, and Future	Input/Output: Human Brain	Input/Output: Computer Systems
Life Science	SC.4.L.16.2 Explain that although characteristics of plants and animals are inherited, some characteristics can be affected by the environment.	■						
	SC.4.L.16.3 Recognize that animal behaviors may be shaped by heredity and learning.	■						
	SC.4.L.17.2 Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.		■					
	SC.4.L.17.3 Trace the flow of energy from the Sun as it is transferred along the food chain through the producers to the consumers.		■					
	SC.4.L.17.4 Recognize ways plants and animals, including humans, can impact the environment.		■	■				
Earth and Space Science	SC.4.E.5.1 Observe that the patterns of stars in the sky stay the same although they appear to shift across the sky nightly, and different stars can be seen in different seasons.				■			
	SC.4.E.5.2 Describe the changes in the observable shape of the moon over the course of about a month.				■			
	SC.4.E.5.3 Recognize that Earth revolves around the Sun in a year and rotates on its axis in a 24-hour day.				■			
	SC.4.E.5.4 Relate that the rotation of Earth (day and night) and apparent movements of the Sun, Moon, and stars are connected.				■			
	SC.4.E.6.4 Describe the basic differences between physical weathering (breaking down of rock by wind, water, ice, temperature change, and plants) and erosion (movement of rock by gravity, wind, water, and ice).					■		
Nature of Science	SC.4.N.1.1 Raise questions about the natural world, use appropriate reference materials that support understanding to obtain information (identifying the source), conduct both individual and team investigations through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.	■	■	■	■	■	■	■
	SC.4.N.1.3 Explain that science does not always follow a rigidly defined method (“the scientific method”) but that science does involve the use of observations and empirical evidence.	■	■	■	■	■	■	■
	SC.4.N.1.4 Attempt reasonable answers to scientific questions and cite evidence in support.	■	■	■	■	■	■	■
	SC.4.N.1.5 Compare the methods and results of investigations done by other classmates.				■			
	SC.4.N.1.6 Keep records that describe observations made, carefully distinguishing actual observations from ideas and inferences about the observations.	■	■	■	■	■	■	■

PLTW LAUNCH

5th Grade

		Organisms: Structure and Function (4)	Energy Exploratoin (4)	Earth's Water and Interconnected Systems	Matter: Properties and Reactions	Earth: Human Impact and Natural Disasters	Robotics and Automation	Robotics and Automation: Challenge	Infection: Detection	Infection: Modeling and Simulation
Life Science	SC.5.L.17.1 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.									
Physical Science	SC.5.P.10.1 Investigate and describe some basic forms of energy, including light, heat, sound, electrical, chemical, and mechanical.									
	SC.5.P.10.2 Investigate and explain that energy has the ability to cause motion or create change.									
	SC.5.P.10.4 Investigate and explain that electrical energy can be transformed into heat, light, and sound energy, as well as the energy of motion.									
	SC.5.P.13.1 Identify familiar forces that cause objects to move, such as pushes or pulls, including gravity acting on falling objects.									
	SC.5.P.13.3 Investigate and describe that the more mass an object has, the less effect a given force will have on the object's motion.									
	SC.5.P.13.4 Investigate and explain that when a force is applied to an object but it does not move, it is because another opposing force is being applied by something in the environment so that the forces are balanced.									
	SC.5.P.8.1 Compare and contrast the basic properties of solids, liquids, and gases, such as mass, volume, color, texture, and temperature.									
	SC.5.P.8.2 Investigate and identify materials that will dissolve in water and those that will not and identify the conditions that will speed up or slow down the dissolving process.									
	SC.5.P.8.3 Demonstrate and explain that mixtures of solids can be separated based on observable properties of their parts such as particle size, shape, color, and magnetic attraction.									
	SC.5.P.8.4 Explore the scientific theory of atoms (also called atomic theory) by recognizing that all matter is composed of parts that are too small to be seen without magnification.									
Earth and Space Science	SC.5.E.7.1 Create a model to explain the parts of the water cycle. Water can be a gas, a liquid, or a solid and can go back and forth from one state to another.									
	SC.5.E.7.2 Recognize that the ocean is an integral part of the water cycle and is connected to all of Earth's water reservoirs via evaporation and precipitation processes.									
	SC.5.E.7.7 Design a family preparedness plan for natural disasters and identify the reasons for having such a plan.									
Nature of Science	SC.5.N.1.1 Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.									
	SC.5.N.1.3 Recognize and explain the need for repeated experimental trials.									
	SC.5.N.1.4 Identify a control group and explain its importance in an experiment.									