# PLTW Launch Science Standards Guide

North Carolina Science Standards | K-5

PLTW Launch Modules have been thoughtfully connected to standards for North Carolina educators. Each grade level has been connected to the PLTW Launch Modules that are the "best-fit" for the North Carolina Science Standards. 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.

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

PLTW LAUNCH Kindergarten
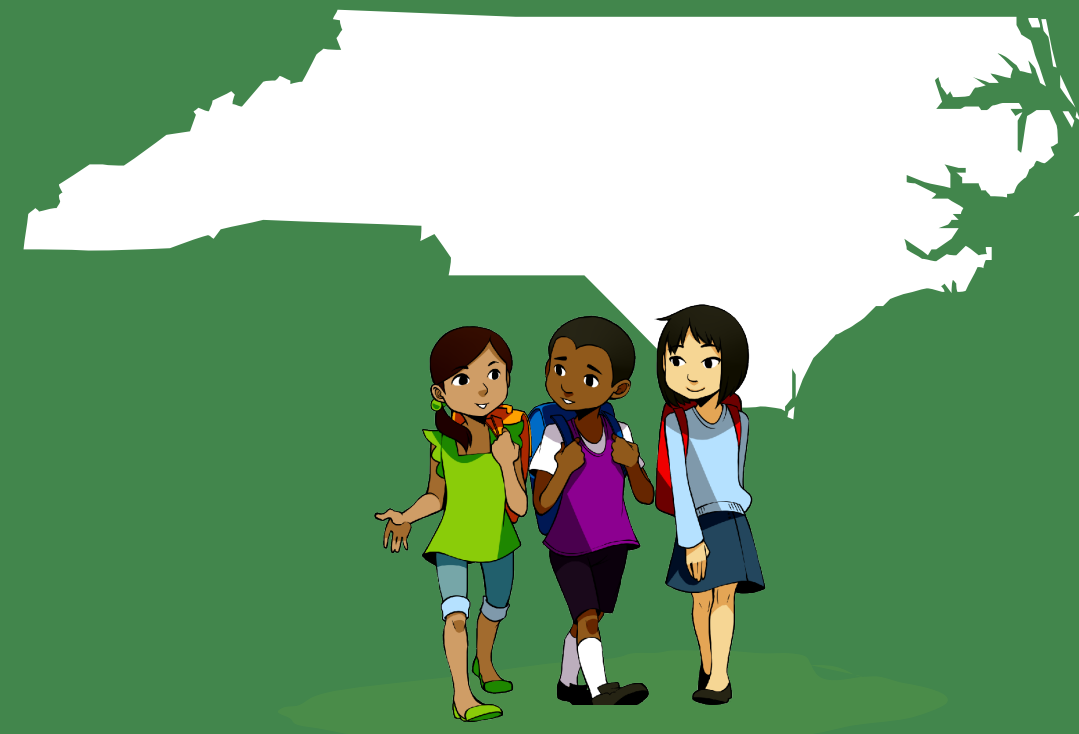
		Structure and Function: Exploring Design	Spatial Sense and Coding (PK)	Living and Nonliving Things (PK)	Animal Adaptations (1)	Designs Inspired by Nature (1)	Sunlight and Weather	Structure and Function: Human Body	Animals and Algorithms
Physical Science	PS.K.1.2 Engage in argument from evidence to summarize how different materials (clay, wood, cloth, paper, etc.) are used based on their physical properties.	●							
	PS.K.2.1 Use models to compare the relative position of various objects observed in the classroom and outside using position words such as: in front of, behind, between, on top of, under, above, below, beside.		●						
Life Science	LS.K.1.1 Engage in argument from evidence to summarize the characteristics of living organisms and nonliving things in terms of their: structure, growth, changes, movement, basic needs.			●					
	LS.K.1.2 Use models to exemplify how animals use their body parts to obtain food and other resources, protect themselves, and move from place to place.				●				
	LS.K.2.1 Analyze and interpret data to compare the characteristics of different types of the same animal to determine individual similarities and differences.					●			
	LS.K.2.2 Analyze and interpret data to compare the characteristics of different types of the same plant to determine individual similarities and differences.					●			
Earth and Space Science	ESS.K.1.1 Analyze and interpret data to compare changes in the environment due to weather.						●		
	ESS.K.1.2 Use mathematics and computational thinking to summarize daily weather conditions noting changes that occur from day to day and throughout the year.						●		
	ESS.K.1.3 Obtain, evaluate and communicate information to compare weather patterns that occur from season to season.						●		

PLTW LAUNCH
1st Grade

		Pushes and Pulls (K)	Living Things: Needs and Impacts (K)	Living Things: Diversity of Life (2)	Light: Observing the Sun, Moon, and Stars	Animated Storytelling
Physical Science	PS.1.1.1 Use models to explain the effect of a push or pull on the motion of an object, with or without contact.	■				
	PS.1.1.2 Carry out investigations to compare the effects of a given force on the motion of an object.	■				
Life Science	LS.1.1.1 Obtain, evaluate and communicate information to summarize the needs of different plants and animals.		■			
	LS.1.1.2 Analyze and interpret data to compare how the needs of plants and animals can be met in different environments.		■	■		
Earth and Space Science	ESS.1.1.1 Use models to recognize differences in the features of the day and night sky and apparent movement of objects across the sky as observed from Earth.				■	
	ESS.1.1.2 Analyze and interpret data to recognize patterns of observable changes in the moon's appearance from day to day.				■	

PLTW LAUNCH
2nd Grade

		Light and Sound (1)	Life Cycles and Survival (3)	Variation of Traits (3)	Weather: Factors and Hazards (3)	Materials Science: Form and Function	Grids and Games
Physical Science	PS.2.2.1 Carry out investigations to illustrate how sound is produced by vibrating objects and columns of air.	✓					
	PS.2.2.2 Use models to summarize the relationship between sound and how sounds are produced and detected by parts of the body that vibrate.	✓					
Life Science	LS.2.1.1 Use models to summarize the life cycle of animals including: birth, developing into an adult, reproducing, aging and death.		✓				
	LS.2.1.2 Obtain, evaluate and communicate information to compare life cycles of different animals.		✓				
	LS.2.2.1 Obtain, evaluate, and communicate information to summarize ways in which animals closely resemble their parents and ways they are different.			✓			
	LS.2.2.2 Analyze and interpret data to illustrate variations among offspring of the same parents.			✓			
Earth and Space Science	ESS.2.1.2 Use mathematics and computational thinking to summarize weather conditions (temperature, wind direction, wind speed, precipitation).				✓		
	ESS.2.1.3 Carry out investigations to collect data and compare weather patterns that occur over time and relate observable patterns to time of day and time of year.				✓		
	ESS.2.1.4 Obtain, evaluate and communicate information to recognize the tools scientists use for observing, recording, and predicting weather changes from day to day and during the season.				✓		

PLTW LAUNCH
3rd Grade

		Materials Science: Properties of Matter (2)	Stability and Motion: Forces and Interactions	Stability and Motion: Science of Flight	The Changing Earth (2)	Programming Patterns
Physical Science	PS.3.1.1 Engage in argument from evidence to infer that air is a substance that surrounds us, takes up space, and has mass.	■				
	PS.3.1.2 Carry out investigations to classify solids, liquids, and gases based on their basic properties.	■				
	PS.3 1.3 Engage in argument from evidence to explain observable changes to the properties of matter when heated or cooled.		■			
	PS.3.2.1 Carry out investigations to infer changes in speed or direction resulting from forces acting on an object.			■		
Earth and Space Science	ESS.3.2.1 Use models to compare Earth's saltwater and freshwater features (including oceans, seas, rivers, lakes, ponds, streams, and glaciers).				■	
	ESS.3.2.2 Use models to compare Earth's land features (including volcanoes, mountains, valleys, canyons, caverns, and islands).				■	

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PLTW LAUNCH — 4th Grade

	Energy Exploration	Waves and the Properties of Light	Organisms: Structure and Function	Input/Output: Human Brain	Environmental Changes (3)	Earth: Past, Present, and Future	Earth: Human Impact and Natural Disasters	Input/Output: Computer Systems
Physical Science — PS.4.2.1 Ask questions to identify basic forms of energy (light, sound, heat, and electrical) that cause motion or create change.	■							
PS.4.2.2 Use models to explain a simple electrical circuit and the necessary components.	■							
PS.4.3.1 Carry out investigations to infer the path light travels from a light source to a mirror and how it is reflected (by the mirror) using different angles.		■						
PS.4.3.2 Carry out investigations to explain how light is refracted and absorbed.		■						
Life Science — LS.4.1.1 Use models to explain that plants and animals have external structures that function to support survival.			■					
LS.4.1.2 Use models to explain that animals receive different types of information through their senses, process the information, and respond to the information in different ways.				■				
LS.4.1.3 Engage in argument from evidence to explain how differences among animals of the same population sometimes gives individuals an advantage in surviving and reproducing in changing habitats.						■		
LS.4.2.1 Analyze and interpret data to compare fossils to one another and living organisms.						■		
LS.4.2.2 Analyze and interpret data to explain how fossils suggest ideas about Earth's early environment.						■		
Earth and Space Science — ESS.4.2.3 Use models to explain changes in Earth's surface over time (to include slow changes of erosion and weathering, and fast changes of earthquakes, landslides, and volcanic activity).							■	
ESS.4.3.3 Obtain, evaluate and communicate information to compare solutions to environmental problems impacting plants and animals.					■			■

PLTW LAUNCH
5th Grade

	Matter: Properties and Reactions	Ecosystems: Flow of Matter and Energy	Earth's Water and Interconnected Systems	Patterns in the Universe	Robotics and Automation	Robotics and Automation: Challenge	Infection: Detection	Infection: Simulation and Modeling
Physical Science — PS 5.1.2 Carry out investigations to explain whether the mixing of two or more substances results in new substances.	■							
Life Science — LS.5.2.2 Use models to classify organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers .		■						
LS.5.2.3 Use models to infer the effects that may result from the interconnected relationships of plants and animals to their ecosystem.		■						
Earth and Space Science — ESS.5.1.4 Use models to explain how the sun's energy drives the processes of the water cycle (including evaporation, transpiration, condensation, precipitation).			■					