

Florida Science Curriculum Framework

Grades 1-2

Reference	Benchmark	Wetlands	Rainforest
	Students will:		
SC.B.1.1.5	know that every human action requires energy that comes from food.	Food Web, Organisms	
SC.D.1.1.2	know that life occurs on or near the surface of the Earth in land, air, and water.	Organisms, Migration	Organisms, Niches
SC.D.2.1.1	understand that people influence the quality of life of those around them.		
SC.F.1.1.1	know the basic needs of all living things.	Organisms	Organisms
SC.F.1.1.3	describe how organisms change as they grow and mature.		
SC.F.1.1.4	understand that structures of living things are adapted to their function in specific environments.		
SC.F.1.1.5	compare and describes the structural characteristics of plants and animals.		
SC.F.2.1.2	know that there are many different kinds of living things in a variety of environments.	Organisms, Migration	Organisms, Niches
SC.G.1.1.1	know that environments have living and nonliving parts.		
SC.G.1.1.2	know that plants and animals are dependent upon each other for survival.	Web Energy, Food Web Game, Organisms, Migration,	Web Game, Organisms
SC.G.1.1.3	know that there are many different plants and animals living in many different environments	Organisms, Migration	Organisms
SC.G.1.1.4	know that animals and plants can be associated with their environment by examining their structural characteristics.	Organisms, Migration	Organisms, Niches
SC.G.2.1.1	know that if living things do not get food, water, shelter, and space, they will die.	Food Chain, Food Web Game, Organisms, Migration	Web Game, Organisms, Niches
SC.G.2.1.2	know that the activities of humans affect plants and animals in many ways.		
SC.H.1.1.1	know that in order to learn, it is important to observe the same things often and compare them.		

Florida Science Curriculum Framework



Grades 3-5

Reference	Benchmark	Wetlands	Rainforest
	Students will:		
SC.B.1.2.1	know how to trace the flow of energy in a system (e.g., as in an ecosystem).	Web Energy, Food Web Game, Photosynthesis	Dependency Types, Web Game
SC.B.2.2.1	know that some source of energy is needed for organisms to stay alive and grow.	Web Energy, Web Game, Organisms, Photosynthesis	Dependency Types, Web Game, Organisms
SC.B.2.2.3	know that the limited supply of usable energy sources places great significance on the development of renewable energy sources.		
SC.E.1.2.3	know that the Sun is a star and that its energy can be captured or concentrated to generate heat and light for work on Earth.		
SC.F.1.2.1	know that the human body is made of systems with structures and functions that are related.		
SC.F.1.2.2	know how all animals depend on plants.	Food Chains, Food Web, Food Web Game, Organisms	Dependency Types, Organisms, Web Game
SC.F.1.2.4	know that similar cells form different kinds of structures.		
SC.F.2.2.1	know that many characteristics of an organism are inherited from the parents of the organism, but that other characteristics are learned from an individual's interactions with the environment.		
SC.G.1.2.1	know ways that plants, animals, and protists interact.	Producers, Consumers, Decomposers, Web Energy, Food Chains, Organisms, Food Web Game	Dependency Types, Web Game, Organisms,
SC.G.1.2.2	know that living things compete in a climatic region with other living things and that structural adaptations make them fit for an environment.	Organisms, Migration	Dependency Types, Organisms
SC.G.1.2.3	know that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction.	Food Web Energy, Organisms (8 plant screens), Photosynthesis	
SC.G.1.2.4	know that some organisms decompose dead plants and animals into simple minerals and nutrients for use by living things and thereby recycle matter.	Decomposers, Swamp Beacon, Cortinarius	Soils and Decomposition

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Grades 3-5

Reference	Benchmark	Wetlands	Rainforest
	Students will:		
SC.G.1.2.5	know that animals eat plants or other animals to acquire the energy they need for survival.	Food Web Energy, Web Game, Food Chain, Consumers, Organisms, Adaptations (gr. 4-5)	Dependency Types, Organisms, Web Game
SC.G.1.2.6	know that organisms are growing, dying, and decaying and that new organisms are being produced from the materials of dead organisms.	Decomposers, Productivity	Soils and Decomposition
SC.G.1.2.7	know that variations in light, water, temperature, and soil content are largely responsible for the existence of different kinds of organisms and population densities in an ecosystem.		Soils & Decomposition, Climate, Seasonality, Tree Fall Gaps
SC.G.2.1.2	know that the activities of humans affect plants and animals in many ways.	Pollution, Conservation	Succession, Impact Screens
SC.G.2.2.1	know that all living things must compete for Earth's limited resources; organisms best adapted to compete for the available resources will be successful and pass their adaptations (traits) to their offspring.	Adaptations (gr. 4-5)	Biodiversity Screens (gr. 4-5), Succession
SC.G.2.2.3	understand that changes in the habitat of an organism may be beneficial or harmful.	Organisms, Migration, Habitat	Organisms, Soils & Decomposition, Succession, Niches
SC.H.1.2.4	know that to compare and contrast observations and results is an essential skill in science.		
SC.H.1.2.5	know that a model of something is different from the real thing, but can be used to learn something about the real thing.		
SC.H.3.2.3	know that before a group of people build something or try something new, they should determine how it may affect other people.		

Florida Science Curriculum Framework



Grades 6-8

Reference	Benchmark	Wetlands	Rainforest	Frog
	Students will:			
SC.B.2.3.1	know that most events in the universe (e.g., weather changes, moving cars, and the transfer of a nervous impulse in the human body) involve some form of energy transfer and that these changes almost always increase the total disorder of the system and its surroundings, reducing the amount of useful energy.			Control System
SC.D.1.3.1	know that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers.	Succession & Formation, Erosion, Productivity, Groundwater, Flooding, Nutrient Cycles	Succession, Tree Fall Gaps, Soils and Decomposition, Water Cycle, Productivity	
SC.D.1.3.2	know that over the whole Earth, organisms are growing, dying, and decaying as new organisms are produced by the old ones.	Productivity, Decomposers	Productivity, Soils and Decomposition	
SC.D.1.3.3	know how conditions that exist in one system influence the conditions that exist in other systems.		Climate	
SC.D.1.3.4	know the ways in which plants and animals reshape the landscape (e.g., bacteria, fungi, worms, rodents, and other organisms add organic matter to the soil, increasing soil fertility, encouraging plant growth, and strengthening resistance to erosion).	Formation and Succession, Erosion, Productivity, Groundwater, Flooding, Nutrient Cycles	Succession, Tree Fall Gaps, Soils and Decomposition, Productivity	
SC.D.2.3.2	know the positive and negative consequences of human action on the Earth's systems.	Conservation, Pollution	Global Benefits, Impact Screens, Rainforest Riches	
SC.F.1.3.1	understand that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation.			Dissection, Reproductive System, Excretory System, Respiratory System, Control System, Musculoskeletal System

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Grades 6-8

Reference	Benchmark	Wetlands	Rainforest	Frog
	Students will:			
SC.F.1.3.2	know that the structural basis of most organisms is the cell and most organisms are single cells, while some, including humans, are multicellular.			
SC.F.1.3.3	know that in multicellular organisms cells grow and divide to make more cells in order to form and repair various organs and tissues.			Urogenital System, Cellular Division, Blood, Immune System,
SC.F.1.3.4	know that the levels of structural organization for function in living things include cells, tissues, organs, systems, and organisms.			Musculoskeletal System, Circulatory System
SC.F.1.3.6	know that the cells with similar functions have similar structures whereas those with different structures have different functions.			Musculoskeletal System
SC.F.1.3.7	know that behavior is a response to the environment and influences growth, development, maintenance, and reproduction.			Behavior: Mating, Feeding, Hibernation
SC.F.2.3.1	know the patterns and advantages of sexual and asexual reproduction in plants and animals.		Plant Characteristics, Botany Screens	Reproduction, Behavior: Mating
SC.F.2.3.2	know that the variation in each species is due to the exchange and interaction of genetic information as it is passed from parent to offspring.		How Species Change	
SC.F.2.3.3	know that generally organisms in a population live long enough to reproduce because they have survival characteristics.	Organisms, Migration, Adaptations,	Biodiversity	
SC.G.1.3.2	know that biological adaptations include changes in structures, behaviors, or physiology that enhance reproductive success in a particular environment.	Organisms, Migration, Adaptations	Plant Characteristics, Biodiversity, Build-A-Tree	Dissection, Biodiversity, Behavior: Mating
SC.G.1.3.3	understand that the classification of living things is based on a given set of criteria and is a tool for understanding biodiversity and interrelationships.	Organisms, Migration	Organisms	Biodiversity

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Grades 6-8

Reference	Benchmark	Wetlands	Rainforest	Frog
	Students will:			
SC.G.1.3.4	know that the interactions of organisms with each other and with the nonliving parts of their environments result in the flow of energy and the cycling of matter throughout the system.	Food Chains, Web Energy, Nutrient Cycles	Productivity, Seasonality, Climate	
SC.G.1.3.5	know that life is maintained by a continuous input of energy from the sun and by the recycling of the atoms that make up the molecules of living organisms.	Web Energy, Food Chains Photosynthesis,		
SC.G.2.3.3	know that a brief change in the limited resources of an ecosystem may alter the size of a population or the average size of individual organisms and that long-term change may result in the elimination of animal and plant populations inhabiting the Earth.		Biodiversity Screens	Behavior, Biodiversity
SC.G.2.3.4	understand that humans are a part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in ecosystems.	Pollution, Conservation	Endangered Rainforests, Global Benefits, Impact Screens	Environmental Concerns
SC.H.1.3.3	know that science disciplines differ from one another in topic, techniques, and outcomes but that they share a common purpose, philosophy, and enterprise.		Statistics	
SC.H.3.3.1	know that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.			

Florida Science Curriculum Framework



Grades 9-12

Reference	Benchmark	Wetlands	Rainforest	Frog
	Students will:			
SC.B.1.4.1	understand how knowledge of energy is fundamental to all the scientific disciplines (e.g., the energy required for biological processes in living organisms and the energy required for the building, erosion, and rebuilding of the Earth).	Photosynthesis, Food Chains, Web Energy, Erosion, Formation and Succession	Soils and Decomposition, Succession, Seasonality, Forest Strata, Water Cycle, Productivity, Tree Fall Gaps	
SC.D.1.4.1	know how climatic patterns on Earth result from an interplay of many factors (Earth's topography, its rotation on its axis, solar radiation, the transfer of heat energy where the atmosphere interfaces with lands and oceans, and wind and ocean currents).		Climate, Seasonality	
SC.D.1.4.3	know that changes in Earth's climate, geological activity, and life forms may be traced and compared.	Adaptations	Climate, Seasonality	
SC.D.1.4.4	know that Earth's systems and organisms are the result of a long, continuous change over time.	Formation and Succession,	Succession, Biodiversity Screens	
SC.D.2.4.1	understand the interconnectedness of the systems on Earth and the quality of life.	Food Chains, Web Game, Organisms, Migration, Conservation, Pollution	Dependency Types, Web Game, Organisms	
SC.F.1.4.2	know that body structures are uniquely designed and adapted for their function.	Adaptations		Musculoskeletal System, Biodiversity, Behavior
SC.F.1.4.3	know that membranes are sites for chemical synthesis and essential energy conversions.			Respiratory System
SC.F.1.4.6	know that separate parts of the body communicate with each other using electrical and/or chemical signals.			Control System, Immune System

Florida Science Curriculum Framework



Grades 9-12

Reference	Benchmark	Wetlands	Rainforest	Frog
	Students will:			
SC.F.1.4.7	know that organisms respond to internal and external stimuli.			Control System, Musculoskeletal System, Digestive System
SC.F.2.4.1	understand the mechanisms of asexual and sexual reproduction and knows the different genetic advantages and disadvantages of asexual and sexual reproduction.			Reproductive System
SC.F.2.4.2	know that every cell contains a "blueprint" coded in DNA molecules that specify how proteins are assembled to regulate cells.			
SC.G.1.4.1	know of the great diversity and interdependence of living things.	Food Web, Food Chains, Web Game, Organisms, Migration	Dependency Types, Web Game, Dependency Web, Organisms, Biodiversity	Biodiversity, Lifecycle
SC.G.1.4.2	understand how the flow of energy through an ecosystem made up of producers, consumers, and decomposers carries out the processes of life and that some energy dissipates as heat and is not recycled.	Food Web, Food Chains, Producers, Consumers, Decomposers, Web Games, Organisms,	Dependency Web, Web Game, Organisms, Succession, Soils and Decomposition	Behavior: Feeding, Hibernation
SC.G.1.4.3	know that the chemical elements that make up the molecules of living things are combined and recombined in different ways.	Wetlands Mechanisms		
SC.G.2.4.1	know that layers of energy-rich organic materials have been gradually turned into great coal beds and oil pools (fossil fuels) by the pressure of the overlying earth and that humans burn fossil fuels to release the stored energy as heat and carbon dioxide.	Nutrient Cycles	Soils and Decomposition, Productivity	

Florida Science Curriculum Framework



Grades 9-12

Reference	Benchmark	Wetlands	Rainforest	Frog
	Students will:			
SC.G.2.4.2	know that changes in a component of an ecosystem will have unpredictable effects on the entire system but that the components of the system tend to react in a way that will restore the ecosystem to its original condition.	Adaptations, Conservation, Pollution	Biodiversity, Global Benefits, Impact Screens	
SC.G.2.4.3	understand how genetic variation of offspring contributes to population control in an environment and that natural selection ensures that those who are best adapted to their surroundings survive to reproduce.		How Species Change, How New Species Form	Biodiversity, Frogs vs. Toads
SC.G.2.4.4	know that the world ecosystems are shaped by physical factors that limit their productivity.	Succession and Formation, Productivity, Nutrient Cycles	Productivity, Succession, Climate	
SC.G.2.4.5	understand that the amount of life any environment can support is limited and that human activities can change the flow of energy and reduce the fertility of the Earth.	Conservation, Pollution, Productivity	Biodiversity, Human Impact, Impact Screens	
SC.G.2.4.6	know the ways in which humans today are placing their environmental support systems at risk (e.g., rapid human population growth, environmental degradation, and resource depletion).	Conservation, Pollution	Endangered Rainforests, Human Impact, Impact Screens	Environmental Concerns
SC.H.2.4.2	know that scientists control conditions in order to obtain evidence, but when that is not possible for practical or ethical reasons, they try to observe a wide range of natural occurrences to discern patterns.		Endangered Rainforests, Statistics	Environmental Concerns
SC.H.3.4.3	know that scientists can bring information, insights, and analytical skills to matters of public concern and help people understand the possible causes and effects of events.			Environmental Concerns