

Illinois Learning Standards

STATE GOAL 12: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.

Early Elementary

Reference	Learning Standards	Wetlands <i>(with teacher support)</i>	Rainforest <i>(with teacher support)</i>
A. Know and apply concepts that explain how living things function, adapt and change.			
12.A.1a	Identify and describe the component parts of living things (e.g., birds have feathers; people have bones, blood, hair, skin) and their major functions.	Organism Screens (include mammals, birds, etc), Migration	Organism Screens (include mammals, birds, etc)
12.A.1b	Categorize living organisms using a variety of observable features (e.g., size, color, shape, back bone).	Organism Screens (include mammals, birds, etc), Migration	Organism Screens (include mammals, birds, etc)
B. Know and apply concepts that describe how living things interact with each other and with their environment.			
12.B.1a	Describe and compare characteristics of living things in relationship to their environments.	Organism Screens, Migration Web Game, Habitat	Organism Screens, Niches, Web Game,
12.B.1b	Describe how living things depend on one another for survival.	Organism Screens, Migration Web Game, Habitat	Organism Screens, Niches, Web Game,
C. Know and apply concepts that describe properties of matter and energy and the interactions between them.			
12.C.1a	Identify and compare sources of energy (e.g., batteries, the sun).	Web Energy, Web Game	

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Late Elementary

Reference	Learning Standards	Wetlands	Rainforest
A. Know and apply concepts that explain how living things function, adapt and change.			
12.A.2a	Describe simple life cycles of plants and animals and the similarities and differences in their offspring.	Organism Screens (life cycle), Migration (life cycle)	Organism Screens (life cycle)
12.A.2b	Categorize features as either inherited or learned (e.g., flower color or eye color is inherited; language is learned).	Organism Screens, Migration for examples of plants and animals	Organism Screens for examples of plants and animals
B. Know and apply concepts that describe how living things interact with each other and with their environment.			
12.B.2a	Describe relationships among various organisms in their environments (e.g., predator/prey, parasite/host, food chains and food webs).	Organism Screens, Web Game, Migration, Food Chains, Web Energy, Producers, Consumers, Decomposers	Organism Screens, Dependency Types (might need teacher support), Dependency Web Game
12.B.2b	Identify physical features of plants and animals that help them live in different environments (e.g., specialized teeth for eating certain foods, thorns for protection, insulation for cold temperature).	Organism Screens, Migration (as examples)	Organism Screens (as examples)
C. Know and apply concepts that describe properties of matter and energy and the interactions between them.			
12.C.2a	Describe and compare types of energy including light, heat, sound, electrical and mechanical.	Web Energy, Photosynthesis	
E. Know and apply concepts that describe the features and processes of the Earth and its resources.			
12.E.2a	Identify and explain natural cycles of the Earth's land, water and atmospheric systems (e.g., rock cycle, water cycle, weather patterns).	Nutrient Cycles: water, carbon, phosphorus, nitrogen	Water Cycle, Soils & Decomposition, Climate
12.E.2b	Describe and explain short-term and long-term interactions of the Earth's components (e.g., earthquakes, types of erosion).	Wetlands Mechanisms: Erosion, Productivity, Ground Water, Flooding	Soils & Decomposition, Productivity, Succession

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STATE GOAL 13: Understand the relationships among science, technology and society in historical and contemporary contexts.

Late Elementary

Reference	Learning Standards	Wetlands	Rainforest	Digital Frog 2
B. Know and apply concepts that describe the interaction between science, technology and society.				
13.B.2e	Identify and explain ways that technology changes ecosystems (e.g., dams, highways, buildings, communication networks, power plants).	Conservation, Pollution	Human Impact, Impact Screens, Global Benefits, Rainforest Riches	
13.B.2f	Analyze how specific personal and societal choices that humans make affect local, regional and global ecosystems	Conservation, Pollution, Migration for examples	Human Impact, Impact Screens, Global Benefits, Rainforest Riches	

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Middle/Junior High School

Reference	Learning Standards	Wetlands	Rainforest	Digital Frog 2
A. Know and apply concepts that explain how living things function, adapt and change.				
12.A.3a	Explain how cells function as "building blocks" of organisms and describe the requirements for cells to live.	Use Organism Screens and Migration for examples	Use Organism Screens for examples	
12.A.3b	Compare characteristics of organisms produced from a single parent with those of organisms produced by two parents.	Use Organism Screens and Migration for examples	Use Organism Screens for examples, New Species, Species Change	
12.A.3c	Compare and contrast how different forms and structures reflect different functions	Use Organism Screens and Migration for examples, Plant Adaptations, Animal Adaptations	Use Organism Screens for examples	
B. Know and apply concepts that describe how living things interact with each other and with their environment.				
12.B.3a	Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid.	Food Chains, Food Web, Producers, Consumers, Decomposers, Organism Screens, Migration, Plant & Animal Adaptations, Habitat	Use Organism Screens for examples	
12.B.3b	Compare and assess features of organisms for their adaptive, competitive and survival potential (e.g., appendages, reproductive rates, camouflage, defensive structures).	Organism Screens, Migration, Plant and Animal Adaptations, Habitat	Use Organism Screens for examples	Musculoskeletal system, Behavior Screens: Hibernation, Feeding, Mating, Vocalization
E. Know and apply concepts that describe the features and processes of the Earth and its resources.				
12.E.3b	Describe interactions between solid earth, oceans, atmosphere and organisms that have resulted in ongoing changes of Earth	Wetlands Mechanisms: Erosion, Flooding, Groundwater, Nutrient Cycles, Productivity	Rainforest Mechanisms: Succession – Productivity, Climate	



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Middle/Junior High School

Reference	Learning Standards	Wetlands	Rainforest	Digital Frog 2
B. Know and apply concepts that describe the interaction between science, technology and society.				
13.B.3d	Analyze the interaction of resource acquisition, technological development and ecosystem impact	Conservation, Pollution for examples	Human Impact, Statistics, Impact Screens, Global Benefits, Rainforest Riches,	
13.B.3f	Apply classroom-developed criteria to determine the effects of policies on local science and technology issues	Conservation, Pollution for examples	Impact Screens for examples	Environmental Concerns for examples

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Early High School

Reference	Learning Standards	Wetlands	Rainforest	Digital Frog 2
A. Know and apply concepts that explain how living things function, adapt and change.				
12.A.4b	Describe the structures and organization of cells and tissues that underlie basic life functions including nutrition, respiration, cellular transport, biosynthesis and reproduction.	Photosynthesis, Use Organism Screens (life cycle), Migration (life cycle) as examples	Botany Screens: Algae, Bacteria, Fungi, Flowering Plants, Flowers, Leaves, Roots, Stems, Seeds, Stomata, Organism Screens for other examples	All body systems are available for reference to organs structure and function.
12.A.4c	Describe processes by which organisms change over time using evidence from comparative anatomy and physiology, embryology, the fossil record, genetics and biochemistry.	Use Organism Screens as examples	Use Organism Screens as examples	Human comparison screens are available throughout all body systems.
B. Know and apply concepts that describe how living things interact with each other and with their environment.				
12.B.4a	Compare physical, ecological and behavioral factors that influence interactions and interdependence of organisms.	Organism Screens & Migration for examples, Food Web Game, Web Energy, Food Chains, Plant & Animal Adaptations, Endangered Wetlands	Organism Screens for examples, Dependency Web: Food Habitat, Pollination, Seed Dispersal, Web Game	
12.B.4b	Simulate and analyze factors that influence the size and stability of populations within ecosystems (e.g., birth rate, death rate, predation, migration patterns).	Use Organism Screens & Migration for examples, Endangered Wetlands	Use Organism Screens for examples	

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Late High School

Reference	Learning Standards	Wetlands	Rainforest	Digital Frog 2
A. Know and apply concepts that explain how living things function, adapt and change.				
12.A.5a	Explain changes within cells and organisms in response to stimuli and changing environmental conditions (e.g., homeostasis, dormancy).	Use Organism Screens & Migration for examples, Plant & Animal Adaptations, Conservation, Pollution	Use Organism Screens for examples, New Species, Species Change	Hibernation as example
B. Know and apply concepts that describe how living things interact with each other and with their environment.				
12.B.5a	Analyze and explain biodiversity issues and the causes and effects of extinction.	Use Organism Screens & Migration, Conservation, Pollution for examples	Biodiversity Screens, Biodiversity, Statistics, Niches	Environmental Concerns, use Biodiversity for examples of frogs
12.B.5b	Compare and predict how life forms can adapt to changes in the environment by applying concepts of change and constancy	Use Organism Screens & Migration, Plant & Animal Adaptations for examples	Species Change, New Species, Why Tropics Diverse, Niches, Organism Screens as examples	
C. Know and apply concepts that describe properties of matter and energy and the interactions between them				
12.C.5a	Analyze reactions (e.g., nuclear reactions, burning of fuel, decomposition of waste) in natural and man-made energy systems.	Photosynthesis, Decomposers, Producers	Soils & Decomposition, Productivity	
E. Know and apply concepts that describe the features and processes of the Earth and its resources.				
12.E.5	Analyze the processes involved in naturally occurring short-term and long-term Earth events	Flooding, Groundwater, Erosion, Formation & Succession	Rainforest Mechanisms	



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B. Know and apply concepts that describe the interaction between science, technology and society.				
13.B.5d	Analyze the costs, benefits and effects of scientific and technological policies at the local, state, national and global levels.	Conservation, Pollution for examples	Impact Screens for examples	