

Animal Programs SC Standards

SC Dept of Education Corresponding Science standards for 2014:<https://www.ed.sc.gov/instruction/standards-learning/science/support-documents-and-resources/elementary-instructional-units/>

Kindergarten

Standard http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf

Life Science: Exploring Organisms and the Environment

K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding:

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

New Academic Vocabulary:

Organisms	Environment	Plant	Animal	Fungi
Decaying	Nutrients	Resource	Shelter	Air
Light	Water	Senses	Camouflage	Protection

Performance Indicators:

K.L.2A.1 Obtain information to answer questions about different organisms found in the environment

K.L.2A.3 Develop and use models to exemplify how animals use their body parts to (1) obtain food and other resources, (2) protect themselves, and (3) move from place to place.

K.L.2A.6 Obtain and communicate information about the needs of organisms to explain why they live in particular areas.

Cross Cutting Concepts:

1. Patterns: Observe and classify organisms by how they meet their needs.
2. Cause and Effect: During investigations determine the needs of organisms by limiting resource. Observe and explain why organisms live in particular areas.
6. Structure and Function: Observe and describe the structure of organisms that help them meet their needs, grow, and survive.

Animal Programs

SC Dept of Education Corresponding Science standards for 2014:<https://www.ed.sc.gov/instruction/standards-learning/science/support-documents-and-resources/elementary-instructional-units/>

Second grade

Standard http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf

Life Science: Animals and their Environments

2.L.5 The student will demonstrate an understanding of how the structures of animals help them survive and grow in their environments.

Conceptual Understanding :

2.L.5A. There are many different groups of animals. One way to group animals is by using their physical characteristics. Animals have basic needs that provide for energy, growth, reproduction, and protection. Animals have predictable characteristics at different stages of development.

New Academic Vocabulary:

Adaptation Amphibian Bird Camouflage Fish Gills Grasp Insect
Invertebrate Life Cycle Locomotion Mammal Metamorphosis Migration
Offspring Physical Characteristic Reptile Vertebrate

Performance Indicators :

2.L.5A.1 Obtain and communicate information to classify animals (such as mammals, birds, amphibians, reptiles, fish, or insects) based on their physical characteristics.

2.L.5A.2 Construct explanations for how structures (including structures for seeing, hearing, grasping, protection, locomotion, and obtaining and using resources) of different animals help them survive.

Cross Cutting Concepts:

1. Patterns: Animals are classified and organized based on observed patterns in their physical characteristics.

4. Systems and system models: Animals can be classified and organized based on their specialized parts and the functions of those parts.

6. Structure and function: Animals are classified and organized based on the function of their physical characteristics such as their method of mobility, method of obtaining food, or their production of young.

7. Stability and change: Animals have adaptations that enable them to survive in their environments.

Conceptual Understanding:

2.L.5B. Animals (including humans) require air, water, food, and shelter to survive in environments where these needs can be met. There are distinct environments in the world that support different types of animals. Environments can change slowly or quickly. Animals respond to these changes in different ways.

New Academic Vocabulary:

Adaptation	Blubber	Carbon Dioxide	Desert	Environment	Erosion
Fertilize	Food Chain	Forest	Fresh Water	Habitat	Harmful
Hibernate	Oxygen	Polar Lands	Predator	Prey	Resources
Shelter	Salt Water	Scarcity	Survive	Temperature	Vegetation

Wetlands

Performance Indicators:

2.L.5B.1 Obtain and communicate information to describe and compare how animals interact with other animals and plants in the environment.

Cross Cutting Concepts:

2. Cause and effect: Mechanism and explanation. Animals and their environments are co-dependent. Habitats can change due to a variety of reasons and which can directly impact the animals. In turn, animals can also have an impact on their environments.

7. Stability and change: Animals also interact with and adapt to changes in their environments. They can also impact their environments.

Animal Programs

SC Dept of Education Corresponding Science standards for 2014:<https://www.ed.sc.gov/instruction/standards-learning/science/support-documents-and-resources/elementary-instructional-units/>

Third grade

Standard [http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South Carolina Academic Standards and Performance Indicators for Science 2014.pdf](http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf)

Life Science: Environments and Habitats

3.L.5 The student will demonstrate an understanding of how the characteristics and changes in environments and habitats affect the diversity of organisms.

Conceptual Understanding:

3.L.5A The characteristics of an environment (including physical characteristics, temperature, availability of resources, or the kinds and numbers of organisms present) influence the diversity of organisms that live there. Organisms can survive only in environments where their basic needs are met. All organisms need energy to live and grow. This energy is obtained from food. The role an organism serves in an ecosystem can be described by the way in which it gets its energy.

New Academic Vocabulary:

Adaptation	Camouflage	Carnivore	Consumer	Decomposer	Energy	
Environment	Food Chain	Food Web	Habitat	Herbivore	Hibernation	
Locomotion	Mimicry	Omnivore	Organism	Predator	Prey	Producer

Performance Indicators:

3.L.5A.1 Analyze and interpret data about the characteristics of environments (including salt and fresh water, deserts, grasslands, forests, rain forests, and polar lands) to describe how the environment supports a variety of organisms.

3.L.5A.2 Develop and use models (such as a food web), to classify organisms as producers, consumers, and decomposers and to describe how organisms obtain energy.

Cross Cutting Concepts:

1. Patterns: Every plant and animal has a pattern of growth and development called a life cycle. As seed plants and animals go through their life cycles, they grow within a habitat for which their needs can be met.

5. Energy and matter: The stages of growth are part of the life cycles in a variety of animal types. These stages are not the same for all animals.

Conceptual Understanding:

3.L.5.B When the environment or habitat changes, some plants and animals survive and reproduce, some move to new locations, and some die. Fossils can be used to infer characteristics of environments from long ago.

New Academic Vocabulary

Drought	Earthquakes	Energy	Environment	Extinction	Fires	Floods
Fossils	Habitat	Hibernate	Landslides	Migrate	Organism	
Pollution	Photosynthesis	Volcanic Eruptions				

Performance Indicators:

3.L.5B.1 Obtain and communicate information to explain how changes in habitats (such as those that occur naturally or those caused by organisms) can be beneficial or harmful to the organisms that live there.

3.L.5B.2 Develop and use models to explain how changes in a habitat cause plants and animals to respond in different ways (such as hibernating, migrating, responding to light, death, or extinction).

Cross Cutting Concepts:

1. Patterns: Environmental changes influence an organism's pattern of behavior.
2. Cause and effect: Mechanism and explanation. When the environment or habitat changes, some plants and animals survive and reproduce, some move to new locations, and some die.
4. Systems and systems models: Changes in a habitat cause plants and animals to respond in different ways (such as hibernating, migrating, responding to light, death, or extinction).
5. Energy and matter: Flows, cycles, and conservation. All organisms need energy to survive. Energy gives the organism its ability to do the things it needs to do to survive. In most habitats, the sun provides the initial energy for the plants, which is passed from plants (producers) to animals (consumers) when animals eat the plants.

Animal Programs

SC Dept of Education Corresponding Science standards for 2014:<https://www.ed.sc.gov/instruction/standards-learning/science/support-documents-and-resources/elementary-instructional-units/>

Fourth grade

Life Science: Characteristics and Growth of Organisms

Standard http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf

4.L.5 The student will demonstrate an understanding of how the structural characteristics and traits of plants and animals allow them to survive, grow, and reproduce

Conceptual Understanding:

4.L.5A Scientists have identified and classified many types of plants and animals. Each plant or animal has a unique pattern of growth and development called a life cycle. Some characteristics (traits) that organisms have are inherited and some result from interactions with the environment

New Academic Vocabulary:

Flowering plants	Nonflowering plants	Vertebrates	Invertebrates	Characteristics
Pollination	Germinate	Reproduce	Inherited traits	

Performance Indicators:

4.L.5A.1 Obtain and communicate information about the characteristics of plants and animals to develop models which classify plants as flowering or nonflowering and animals as vertebrate or invertebrate.

4.L.5A.3 Develop and use models to compare the stages of growth and development in various animals.

4.L.5A.4 Construct scientific arguments to support claims that some characteristics of organisms are inherited from parents and some are influenced by the environment.

Cross Cutting Concepts:

5. Energy and Matter: Energy is essential for all stages of plant and animal development.

Conceptual Understanding:

4.L.5B. Plants and animals have physical characteristics that allow them to receive information from the environment. Structural adaptations within groups of plants and animals allow them to better survive and reproduce.

New Academic Vocabulary:

Senses Sensory organs Adaptations Seed dispersal Reproduce
Defense Locomotion Camouflage

Performance Indicators:

4.L.5B.1 Develop and use models to compare how humans and other animals use their senses and sensory organs to detect and respond to signals from the environment.

4.L.5B.3 Construct explanations for how structural adaptations (such as methods for defense, locomotion, obtaining resources, or camouflage) allow animals to survive in the environment.

Cross Cutting Concepts:

2. Cause and Effect: As humans and animals use their sensory organs, they respond to signals in their environment.

Animal Programs

SC Dept of Education Corresponding Science standards for 2014:<https://www.ed.sc.gov/instruction/standards-learning/science/support-documents-and-resources/elementary-instructional-units/>

Fifth grade

Life Science: Interdependent Relationships in Ecosystems

Standard [http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South Carolina Academic Standards and Performance Indicators for Science 2014.pdf](http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf)

5.L.4 The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems.

Conceptual Understanding:

5.L.4A Ecosystems are complex, interactive systems that include both the living components (biotic factors) and physical components (abiotic factors) of the environment. Ecosystems can be classified as either terrestrial (such as forests, wetlands, and grasslands) or aquatic (such as oceans, estuaries, lakes, and ponds).

New Academic Vocabulary:

Abiotic	Biotic	Aquatic	Terrestrial	Estuary
Ecosystem	Salinity	Populations	Communities	Parasite
Host	Limiting factors	Symbiotic relationships	Niche	

Performance Indicators:

5.L.4A.2 Obtain and communicate information to describe and compare the biotic factors (including individual organisms, populations, and communities) of different terrestrial and aquatic ecosystems.

Cross Cutting Concepts:

2. Cause and Effect: Observations of how organisms interact in an ecosystem and the effects from the diverse life forms may or may not meet the needs of the ecosystem's ability to be stable.

Conceptual Understanding:

5.L.4B. All organisms need energy to live and grow. Energy is obtained from food. The role an organism serves in an ecosystem can be described by the way in which it gets its energy. Energy is transferred within an ecosystem as organisms produce, consume, or decompose food. A healthy ecosystem is one in which a diversity of life forms are able to meet their needs in a relatively stable web of life.

New Academic Vocabulary:

Habitat	Competition	Limiting factors	Niche	Predator
Prey	Parasite	Host		

Performance Indicators:

5.L.4B.1 Analyze and interpret data to explain how organisms obtain their energy and classify an organisms as producers, consumers (including herbivore, carnivore, and omnivore), or decomposers (such as fungi and bacteria).

5.L.4B.2 Develop and use models of food chains and food webs to describe the flow of energy in an ecosystem.

Cross Cutting Concepts:

1. Patterns: Observe models of food chains and food webs to show the flow of energy in an ecosystem and patterns that emerge.

Animal Programs

SC Dept of Education Corresponding Science standards for 2014:

<https://www.ed.sc.gov/instruction/standards-learning/science/support-documents-and-resources/middle-instructional-units/>

Sixth grade

Life Science: Diversity of Life-Classification and Animals

Standard [http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South Carolina Academic Standards and Performance Indicators for Science 2014.pdf](http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf)

6.L.4 The student will demonstrate an understanding of how scientists classify organisms and how the structures, processes, behaviors, and adaptations of animals allow them to survive.

Conceptual Understanding:

6.L.4A. Life is the quality that differentiates living things (organisms) from nonliving objects or those that were once living. All organisms are made up of cells, need food and water, a way to dispose of waste, and an environment in which they can live. Because of the diversity of life on Earth, scientists have developed a way to organize groups of organisms according to their characteristic traits, making it easier to identify and study them.

New Academic Vocabulary:

Autotroph	Class	Characteristic	Development	Family	Genus
Growth	Kingdom	Levels of Organization	Order	Organism	Photosynthesis
Phylum (Phyla)	Protist	Respiration	Response	Species	Stimulus
Taxonomy	Asexual Reproduction	Sexual Reproduction			

Performance Indicators:

6.L.4A.1 Obtain and communicate information to support claims that living organisms (1) obtain and use resources for energy, (2) respond to stimuli, (3) reproduce, and (4) grow and develop.

6.L.4A.2 Develop and use models to classify organisms based on the current hierarchical taxonomic structure (including the kingdoms of protists, plants, fungi, and animals).

Cross Cutting Concepts:

1. Patterns: The system of scientific classification organizes living things based on patterns of structures and responses.
2. Cause and effect: Mechanism and explanation: Internal and external stimuli cause responses in organisms.
5. Energy and matter: Flows, cycles, and conservation: Energy is conserved as it is cycled into and out of living things as they grow, develop, respond to stimuli, and reproduce.

- 6. Structure and function: The structures of living things and their functions affect an organism's ability to survive and respond to its environment.
- 7. Stability and change: Living things must respond to internal and external stimuli to maintain internal regular conditions in order to survive. *

Conceptual Understanding:

6.L.4B. The Animal Kingdom includes a diversity of organisms that have many characteristics in common. Classification of animals is based on structures that function in growth, reproduction, and survival. Animals have both structural and behavioral adaptations that increase the chances of reproduction and survival in changing environments.

New Academic Vocabulary:

Vertebrate	Invertebrate	Ectotherm	Endotherm	Structures	Functions
Processes	Adaptations	Endoskeleton	Exoskeleton	Inherited Behavior	
Learned Behavior	Instinct	Hibernation	Migration	Grouping	Courtship
Camouflage	Ejection	Mimicry	Conditioning	Echinoderm	Mollusk
Segmented Worm					

Performance Indicators:

- 6.L.4B.2 Obtain and communicate information to explain how the structural adaptations and processes of animals allow for defense, movement, or resource obtainment.
- 6.L.4B.5 Analyze and interpret data to compare how endothermic and ectothermic animals respond to changes in environmental temperature.

Cross Cutting Concepts:

1. Patterns: All animals, vertebrate and invertebrate, share common characteristics that classify them as animals.
2. Cause and effect: Mechanism and explanation: Endothermic and ectothermic animals respond to changes in environmental temperature that allow them to survive. The behavioral responses of animals, including hibernation, migration, grouping and courtship, to internal and external stimuli result in their survival and ability to reproduce.
6. Structure and function: Living things have unique structures which allow for defense, the obtainment of resources and movement.
7. Stability and change: Organisms must respond appropriately to changing external conditions in order to survive and reproduce.

Animal Programs

SC Dept of Education Corresponding Science standards for 2014:

<https://www.ed.sc.gov/instruction/standards-learning/science/support-documents-and-resources/middle-instructional-units/>

Seventh grade

Life Science: Organization of Living Things

Standard [http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South Carolina Academic Standards and Performance Indicators for Science 2014.pdf](http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf)

7.L.3 The student will demonstrate an understanding of how the levels of organization within organisms support the essential functions of life.

Conceptual Understanding:

7.L.3B. Multicellular organisms (including humans) are complex systems with specialized cells that perform specific functions. Organs and organ systems are composed of cells that function to serve the needs of cells which in turn serve the needs of the organism. New

New Academic Vocabulary

Anus Arteries Bladder Blood Blood Vessels Bones Brain Brainstem Bronchi
(Bronchus) Capillaries Carbon Dioxide Cardiac Muscles Cerebellum Cerebrum
Circulatory system Connective Tissue Diaphragm Digestive System Esophagus
Excretory (Urinary) System Gallbladder Heart Involuntary Muscles Joints Kidneys
Large Intestine Ligaments Liver Lungs Mouth Musculoskeletal System
Nervous System Organs Oxygen Pancreas Peripheral Nerves
Plasma Platelets Primary Organs Rectum Red Blood Cells Respiratory System
Secondary Organs Skeletal Muscles Small Intestine Smooth Muscles
Spinal Cord Stimuli Stomach Systems Tendons Trachea Tuberculosis Ureters
Urethra Veins Voluntary Muscles White Blood Cells

Performance Indicators:

7.L.3B.1 Develop and use models to explain how the structural organizations within multicellular organisms function to serve the needs of the organism.

Cross Cutting Concepts:

4. Systems and system models: Models explain how various organs within the body function and relate to how they work together to support essential life functions of the body systems. Structural organization within multicellular organisms function to serve the needs of the organism.

6. Structure and function: Models explain how various organs within body function and relate to how they work together to support essential life functions of the body. Structural organization within multicellular organisms function to serve the needs of the organism.

Ecology: Interactions of Living Systems and the Environment

Standard [http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South Carolina Academic Standards and Performance Indicators for Science 2014.pdf](http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf)

7.EC.5 The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environments.

Conceptual Understanding:

7.EC.5A In all ecosystems, organisms and populations of organisms depend on their environmental interactions with other living things (biotic factors) and with physical (abiotic) factors (such as light, temperature, water, or soil quality). Disruptions to any component of an ecosystem can lead to shifts in its diversity and abundance of populations.

New Academic Vocabulary:

Abiotic	Biomes	Biotic	Carrying Capacity	Community	Ecosystem
Humus	Lime	Limiting Factor	Loam	Permeability	Population
Sandy Clay Loam	Silt	Silt Loam	Soil Composition	Soil pH	Soil Profile
Soil Texture	Species				

Performance Indicators:

7.EC.5A.1 Develop and use models to describe the characteristics of the levels of organization within ecosystems (including species, populations, communities, ecosystems, and biomes).

7.EC.5A.2 Construct explanations of how soil quality (including composition, texture, particle size, permeability, and pH) affects the characteristics of an ecosystem using evidence from soil profiles.

Cross Cutting Concepts:

2. Cause and effect: Mechanism and explanation: Changes that occur to the physical environment can cause changes in the number of organisms within a population.
4. Systems and systems models: The levels of organization within ecosystems are a system in ecology. Abiotic and biotic factors interact to create a dynamic system.
6. Structure and function: Soil quality is a function of composition, texture, particle size, permeability, and pH.