



Ohio Academic Standards Addressed By Zoo Program

Nocturnal Adventures – Animal Adaptations (K-8th Grade)

Program description:

During the Animal Adaptations Overnight students will investigate the definition of adaptation. Have you ever wondered why a mouse scurries snugly against the wall as it runs or why a dog has a wet nose? Have you ever thought about how hard it would be to get dressed for school if you had no thumbs? Nocturnal Adventures' Animal Adaptations will answer all those questions and more!

Ohio Science Standards addressed by this program, organized by grade band and then standard:

GRADES K-2

Standard: Earth and Space Sciences

Benchmark B: Explain that living things cause changes on Earth.

Indicators:

Kindergarten

2. Explore that animals and plants cause changes to their surroundings.

Grade 1

3. Explain that all organisms cause changes in the environment where they live; the changes can be very noticeable or slightly noticeable, fast or slow (e.g., spread of grass cover slowing soil erosion, tree roots slowly breaking sidewalks).

Standard: Life Sciences

Benchmark A: Discover that there are living things, non-living things and pretend things, and describe the basic needs of living things (organisms).

Indicators:

Grade 1

1. Explore that organisms, including people, have basic needs which include air, water, food, living space and shelter.

4. Investigate that animals eat plants and/or other animals for food and may also use plants or other animals for shelter and nesting.

Grade 2

1. Explain that animals, including people, need air, water, food, living space and shelter; plants need air, water and nutrients (e.g., minerals), living space and light to survive.

5. Explain that food is a basic need of plants and animals (e.g., plants need sunlight to make food and to grow, animals eat plants and/or other animals for food, food chain) and is important because it is a source of energy (e.g., energy used to play, ride bicycles, read, etc.).

Benchmark B: Explain how organisms function and interact with their physical environment.

Indicators:

Kindergarten

6. Investigate the habitats of many different kinds of local plants and animals and some of the ways in which animals depend on plants and each other in our community.

Grade 1

3. Explore that humans and other animals have body parts that help to seek, find and take in food when they are hungry (e.g., sharp teeth, flat teeth, good nose and sharp vision).

Grade 2

2. Identify that there are many distinct environments that support different kinds of organisms.

3. Explain why organisms can survive only in environments that meet their needs (e.g., organisms that once lived on Earth have disappeared for different reasons such as natural forces or human-caused effects).

6. Investigate the different structures of plants and animals that help them live in different environments (e.g., lungs, gills, leaves and roots).

Standard: Scientific Ways of Knowing

Benchmark B: Recognize the importance of respect for all living things.

Indicators:

Kindergarten

3. Interact with living things and the environment in ways that promote respect.

Benchmark C: Recognize that diverse groups of people contribute to our understanding of the natural world.

Indicators:

Kindergarten

4. Demonstrate ways science is practiced by people everyday (children and adults).

Grade 1

3. Explain why scientists review and ask questions about the results of other scientists' work.

GRADES 3-5

Standard: Life Sciences

Benchmark A: Differentiate between the life cycles of different plants and animals.

Indicators:

Grade 4

5. Describe how organisms interact with one another in various ways (e.g., many plants depend on animals for carrying pollen or dispersing seeds)

Benchmark B: Analyze plant and animal structures and functions needed for survival and describe the flow of energy through a system that all organisms use to survive.

Indicators:

Grade 3

2. Relate animal structures to their specific survival functions (e.g., obtaining food, escaping or hiding from enemies).

Benchmark C: Compare changes in an organism's ecosystem/habitat that affect its survival.

Indicators:

Grade 3

6. Describe how changes in an organism's habitat are sometimes beneficial and sometimes harmful.

Grade 5

4. Summarize that organisms can survive only in ecosystems in which their needs can be met (e.g., food, water, shelter, air, carrying capacity and waste disposal). The world has different ecosystems and distinct ecosystems support the lives of different types of organisms.

6. Analyze how all organisms, including humans, cause changes in their ecosystems and how these changes can be beneficial, neutral or detrimental (e.g., beaver ponds, earthworm burrows, grasshoppers eating plants, people planting and cutting trees and people introducing a new species).

GRADES 6-8

Standard: Life Sciences

Benchmark B: Describe the characteristics of an organism in terms of a combination of inherited traits and recognize reproduction as a characteristic of living organisms essential to the continuation of the species.

Indicators:

Grade 7

8. Investigate the great diversity among organisms.

Grade 8

3. Explain how variations in structure, behavior or physiology allow some organisms to enhance their reproductive success and survival in a particular environment.

Benchmark C: Explain how energy entering the ecosystems as sunlight supports the life of organisms through photosynthesis and the transfer of energy through the interactions of organisms and the environment.

Indicators:

Grade 6

8. Describe how organisms may interact with one another.

Grade 7

2. Investigate how organisms or populations may interact with one another through symbiotic relationships and how some species have become so adapted to each other that neither could survive without the other (e.g., predator-prey, parasitism, mutualism and commensalisms).

Benchmark D: Explain how extinction of a species occurs when the environment changes and its adaptive characteristics are insufficient to allow survival (as seen in evidence of the fossil record).

Indicators:

Grade 8

4. Explain that diversity of species is developed through gradual processes over many generations (e.g., fossil record).

5. Investigate how an organism adapted to a particular environment may become extinct if the environment, as shown by the fossil record, changes.