



Ohio Academic Standards Addressed By Zoo Program

GUIDED TOUR—INSECT (K-12)

Program description:

Learn about one of the most important groups of animals on the planet in our award-winning Insectarium. A live insect demonstration is included. A perfect cold weather tour.

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

GRADES K-2

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

5. Investigate observable features of plants and animals that help them live in different kinds of places.
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).
5. Recognize that seasonal changes can influence the health, survival or activities of organisms.

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).

Benchmark C: Describe similarities and differences that exist among individuals of the same kind of plants and animals.

Indicators:

Kindergarten

3. Describe how plants and animals usually resemble their parents.

Standard: Science and Technology

Benchmark A: Explain why people, when building or making something, need to determine what it will be made of, how it will affect other people and the environment.

Indicators:

Kindergarten

2. Explore that some materials can be used over and over again (e.g., plastic or glass containers, cardboard boxes and tubes).

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.

GRADES 3-5

Standard: Life Sciences

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

Indicators:

Grade 3

1. Compare the life cycles of different animals including birth to adulthood, reproduction and death (e.g., egg-tadpole-frog, egg-caterpillar-chrysalis-butterfly).

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).

3. Classify animals according to their characteristics (e.g., body coverings and body structure).

Grade 5

- Trace the organization of simple food chains and food webs (e.g., producers, herbivores, carnivores, omnivores and decomposers).

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

Indicators:

Grade 5

- 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 supports the lives of different types of organisms.

GRADES 6-8

Standard: Life Sciences

Benchmark A: Explain that the basic functions of organisms are carried out in cells and groups of specialized cells form tissues and organs; the combination of these cells make up multicellular organisms that have a variety of body plans and internal structures.

Indicators:

Grade 6

- Explain that multicellular organisms have a variety of specialized cells, tissues, organs and organ systems that perform specialized functions.

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

Indicators:

Grade 6

- Recognize that an individual organism does not live forever; therefore reproduction is necessary for the continuation of every species and traits are passed on to the next generation through reproduction.

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

- Describe how organisms may interact with one another.

Grade 7

- 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).

GRADES 9-10**Standard:** Life Sciences**Benchmark E:** Explain how evolutionary relationships contribute to an understanding of the unity and diversity of life.**Indicators:**

Grade 10

12. Describe that biological classification represents how organisms are related with species being the most fundamental unit of the classification system. Relate how biologists arrange organisms into a hierarchy of groups and subgroups based on similarities and differences that reflect their evolutionary relationships.

GRADES 11-12**Standard:** Life Sciences**Benchmark E:** Explain the interconnectedness of the components of a natural system.**Indicators**

Grade 12

7. Relate diversity and adaptations to structures and functions of living organisms at various levels of organization.