

Nature Studies Guided Tour

Description and Curriculum Resources

Location:	Wahkeena Nature Preserve, Lancaster (Fairfield), Ohio
Guided Tour:	Nature Studies
Availability:	Wednesday, Thursday, Friday September, October, April, and May Due to the popularity of this program, reservations are limited
Time Allowance:	4 hours on site
Cost:	\$3.00 admission per student
Grades:	2 nd , 3 rd , 4 th , 5 th , adaptable to all Maximum group size is 60 students, large groups will be divided

Description:

After a short orientation, students will be guided through Wahkeena focusing on three areas: A Discovery Hike, the Nature Center, and a Pond Study activity. This event requires approximately a 4-hour on site commitment.

Discovery Hike: Groups will walk one of the nature trails, exploring the interesting natural features of the preserve. Highlights vary with the seasons – and what the students discover on their own – but might include tree and wildflower identification, animal signs, geology, and sensory awareness.

Nature Center: Students visit the Nature Center to learn the history of Wahkeena and more about Ohio’s native wildlife from Wahkeena’s extensive collection of mounted mammals and birds; from an observation beehive; and from live reptiles. Habitats and food are discussed, as well as myths associated with the animals.

Pond Study: This activity introduces students to aquatic life. During a classroom period, a typical aquatic food chain, energy flow and how all things in a pond are interrelated will be discussed. Then they will walk to a nearby pond and try to locate various aquatic animals like tadpoles, crayfish, snails and insects.

Programs take place under all, except the most severe, weather conditions, so participants are encouraged to dress appropriately. Participants are to bring a sack lunch. There is no refrigeration available for lunches. All groups will eat together. During hot weather, students may carry water bottles.

Science Academic Content Standards Addressed:

Scientific Inquiry (Doing Scientific Inquiry)

5th. Use evidence and observations to explain and communicate the results of investigations.

Life Sciences (Characteristics and Structure of Life)

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

2nd. 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).

Life Sciences (Diversity and Interdependence of Life)

2nd. Investigate the different structures of plants and animals that help them live in different environments (e.g., lungs, gills, leaves and roots).

2nd. Compare the habitats of many different kinds of Ohio plants and animals and some of the ways animals depend on plants and each other.

3rd. Relate animal structures to their specific survival functions (e.g., obtaining food, escaping or hiding from enemies).

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

3rd. Use examples to explain those extinct organisms may resemble organisms that are alive today.

3rd. Describe how changes in an organism's habitat are sometimes beneficial and sometimes harmful.

4th. Relate plant structures to their specific functions (e.g., growth, survival and reproduction).

4th. Classify common plants according to their characteristics (e.g., tree leaves, flowers, seeds, roots and stems).

4th. Describe how organisms interact with one another in various ways (e.g., many plants depend on animals for carrying pollen or dispersing seeds).

5th. Describe the role of producers in the transfer of energy entering ecosystems as sunlight to chemical energy through photosynthesis.

5th. Explain how almost all kinds of animals' food can be traced back to plants.

5th. Trace the organization of simple food chains and food webs (e.g., producers, herbivores, carnivores, omnivores and decomposers).

5th. 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.

5th. Support how an organism's patterns of behavior are related to the nature of that organisms present, the availability of food and resources, and the changing physical characteristics of the ecosystem.

5th. 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).

Life Sciences (Heredity)

3rd. Compare the life cycles of different animals including birth to adulthood, reproduction and death (e.g., egg-tadpole-frog, egg-caterpillar-chrysalis-butterfly).

4th. Compare the life cycles of different plants including germination, maturity, reproduction and death.

Earth and Space Sciences (Earth Systems)

5th. Explain how the supply of many non-renewable resources is limited and can be extended through reducing, reusing, and recycling, but cannot be extended indefinitely.

Science and Technology (Understanding Technology)

5th. Investigate positive and negative impacts of humans activity and technology on the environment.

Science and Technology (Abilities to do Technological Design)

5th. Explain how the solution to one problem may create other problems.

Scientific Ways of Knowing (Nature of Science)

5th. Identify how scientists use different kinds of ongoing investigations depending on the questions they are trying to answer (e.g., observations of things or events in nature, data collection and controlled experiments).

Scientific Ways of Knowing (Science and Society)

5th. Identify a variety of scientific and technological work that people of all ages, backgrounds and groups perform.

Social Studies Academic Content Standards Addressed:

Geography (Human Environmental Interaction)

4th. Identify how environmental processes (i.e., glaciation and weathering) and characteristics (landforms, bodies of water, climate, vegetation) influence human settlement and activity in Ohio.

4th. Identify ways that people have affected the physical environment of Ohio including: use of wetlands, use of forests; building farms, towns and transportation systems; using fertilizers, herbicides and pesticides; building dams.

Nature Studies Glossary:

adaptation. Adjustment to environmental conditions, modification or an organism or its parts that makes it more fit for existence under the conditions of its environment.

biotic. Relating to life.

capacity. The maximum amount or number that can be contained or accommodated.

carnivore. A flesh-eating animal.

characteristic. A distinguishing trait, feature, quality, or property.

chrysalis. The pupa of a butterfly and some insects.

community. Interacting populations that live in a defined habitat.

conservation. A careful preservation and protection of something; especially planned management of a natural resource to prevent exploitation, destruction, or neglect.

Consumer. An organism requiring complex organic compounds for food, which it obtains by preying on other organisms or by eating particles of organic matter.

cycle. An interval of time during which a sequence of a recurring succession of events or phenomena is completed.

decomposers. Organisms such as bacteria and fungi that feed and breakdown dead organisms returning constituents of organic substances to the environment.

diversity. A great deal of variety.

ecological. The interactions and relationships between organisms and their environment.

ecosystem. The complex of a community of organisms and its environment functioning as an ecological unit.

energy. The capacity for doing work; can be in various forms such as nuclear, sound, thermal, and light.

environment. The complex of physical, chemical, and biotic factors that act upon an organism or an ecological community and ultimately determine its form and survival.

evaporation. To convert into vapor.

evidence. Facts of observations on which a conclusion can be based.

evolution (biological), Changes in the genetic composition of a population through successive generations.

extinct. A species of organisms that no longer exists.

food chain. An arrangement of the organisms of an ecological community according to the order of predation in which each uses the next usually lower member as a food source.

food web. The totality of interacting food chains in an ecological community; interacting food chains in an ecological community.

fungi. Any of a major group of saprophytic and parasitic spore-producing organisms including molds, rusts, mildews, smuts, mushrooms, and yeasts.

gas. A fluid (such as air) that has neither independent shape nor volume but tends to expand indefinitely.

gene. A functional hereditary unit located at a particular point on a chromosome that controls or acts in the transmission of hereditary characteristics.

germination. The beginning of growth in a spore, seed, zygote, etc., especially following a dormant period.

glaciation. To subject to glacial action in which a large body of ice moves slowly down a slope or valley, or spreads outward on a land surface.

habitability. Suitable for a dwelling place.

habitat. The place or environment where a plant or animal naturally or normally lives and grows.

herbivore. A plant-eating animal.

landform. A natural feature of a land surface.

life. An organism that has the capacity for metabolism, growth, reaction to stimuli and reproduction.

life cycle. The series of stages in form and functional activity through which an organism passes from fertilized ovum to the fertilized ovum of the next generation.

metamorphism. A change in the constitution of rock; specifically, a pronounced change affected by pressure, heat, and water that results in a more compact and more highly crystalline condition.

microorganisms. An organism or microscopic or ultramicroscopic size.

mineral. A solid homogeneous crystalline chemical element or compound that results from the inorganic processes of nature.

natural. Existing in, or produced by nature.

natural selection. The principle that in a given environment individuals having characteristics that aid survival will produce more offspring, and the proportion of individuals having such characteristics will increase with each succeeding generation.

nesting. To build or occupy a nest; settle in.



nutrient. A nutritive substance or ingredient.

observe. To watch carefully, especially with attention to details or behavior for the purpose of arriving at a judgement.

omnivore. An animal that feeds on both animal and vegetable substances.

organic. Compounds containing carbon and chiefly or ultimately of biological origin.

organism. An individual constituted to carry on the activities of life by means of organs separate in function but mutually dependent; a living being.

parasite. An organism living in, with or on another organism in which a parasite obtains benefits from a host that is usually injures.

photosynthesis. The chemical process by which chlorophyll-containing plants use light to convert carbon dioxide and water into carbohydrates, releasing oxygen as a byproduct.

physical change. A change in a substance that does not alter its chemical makeup.

physical properties. A property of a material that can be observed without changing the chemical makeup of material.

planet. Any of the large bodies that revolve around the sun in the solar system.

pollution. A substance that, when added to the environment causes the environment to be harmful or unfit for living things.

population. All the plants or animals of the same kind found in a given area.

potential energy. The energy that matter has because of its position or because of the arrangement of atoms or parts.

precipitation. A deposit on Earth of hail, mist, rain, sleet, or snow.

predator. An animal that lives by capturing prey as a means of maintaining life.

prey. An animal taken by a predator as food.

producer. Any of various organisms (such as plants and inorganic nitrogen) and many of which are food sources for other organisms.

property. A quality or trait belonging to an individual or thing.

recycle. To process (as liquid body waste, glass, or cans) in order to regain material for human use.

reproduction. The process by which organisms give rise to offspring and which fundamentally consists of the segregation of a portion of the parental body by a sexual or an asexual process, and its subsequent growth and differentiation into a new individual.

resource. Industrial materials and capacities (as mineral deposits and waterpower) supplied by nature (earth science) and substances used by an organism for survival (biology).

respiration. The physical and chemical processes by which an organism supplies its cells and tissues with the oxygen needed for metabolism and relieves them of the carbon dioxide formed in energy-producing reactions.

sediment. Material deposited by water, wind, or glaciers.

species. A group of organisms consisting of similar individuals capable of exchanging genes or interbreeding.

survival. The continuation of life or existence.

system. 1. A group of body organs that together perform one or more vital functions. 2. An organized group of devices, parts or factors that together perform a function or drive a process (weather systems, mechanical systems).

technology. Human innovation in action that involves the generation of knowledge and processes to develop systems that solve problems and extend human capabilities. The



innovation, change, or modification of the natural environment to satisfy perceived human needs and wants.

tool. A device that aids in accomplishing a task, a form of technology.

trait. An inherited characteristic.

transform. To change in composition or structure.

weather. A state of the atmosphere with respect to heat or cold, wetness or dryness, calm or storm, clearness or cloudiness.

Wahkeena Nature Preserve is operated by the Ohio Historical Society, a nonprofit organization that serves as the state's partner in preserving and interpreting Ohio's history, archaeology, and natural history. Wahkeena Nature Preserve is located in Fairfield County near Lancaster, Ohio.

