



Naturalist Outreach Program Offerings

Presented by professional Three Rivers Park District naturalists

Reservations: 763.694.7790 or MississippiGateway@ThreeRiversParks.org

The naturalists from Mississippi Gateway Regional Park are skilled educators. They can bring a variety of hands-on, inquiry-based science programs to your location, with both indoor and outdoor components, throughout the year.

Programs typically last one to two hours, with length adapted to your needs. Many activities can be done any time of year and modified to different age groups. Programs are tailored to fit the program site and can be customized based on group's **objectives**. Not all programs can be done at all sites. Common program topics by age group are listed below.

During a program, adults from your group are required to attend. It is best if teachers/leaders can be present to provide learning connections for the students during and after the program. At your location, the naturalists will need approximately 30 minutes to set up the space for learning and 30 minutes to clean up afterwards. Most activities can be done with 20-60 students depending on space available.

Outreach program fees are based on the number of students and program length, and start at \$120. Adults assisting children are not billed as participants. Scholarships (discounts) are available through the WonderFund, based on **your school's** percentage of free and reduced lunch program participants. Please inquire for a simple application form.

Program Topics (preschool to middle school)

Grades: PreK – 3

Animal Builders — Animals can be amazing engineers. Discover how animals build their homes using specific requirements for survival. Study bird nests and try to construct your own using basic engineering skills. Hike to find homes that animals made, and look for trees and branches that animals have taken for building material.

Animal Hideouts — Where do animals live? See how many homes you can find by looking under logs and in trees for animal holes and nests. Play matching game of animals and homes. Puppet show may be included.

Animal Signs — Look closely at the small things in nature. Be a nature detective and explore the outdoors on a short hike. Puppet show may be included.

Grades: PreK – 3 (continued)

Birds – Learn about the characteristics that make a bird a bird. Look for birds in your neighborhood, experiment with beak adaptations, play a migration game, or participate in the bird olympics.

Bugs, Butterflies, and Beetles — What is a life cycle and how do the life cycles of some common insect orders compare? Students learn the terms: larva, pupa, and metamorphosis, and the difference between complete and incomplete metamorphosis. Students use nets and jars to capture live insects. Additional activity includes classifying common groups of plastic insects by order.

Classification – Investigate the similarities and differences between the five vertebrate groups. Learn about the differences between physical and behavioral characteristics and how scientists use them to put animals into groups.

Classifying Fish — How can we tell fish families apart? What are some common Minnesota fish? Students discuss what adaptations all fish share and then learn one or two special features for each of six fish families. Teams of students receive a pile of toy fish which they divide into families using posters to compare features.

Homes & Habitats — Explore places where animals live. Hike to discover features of a habitat that attracts specific animals. Observe the habitats of a reptile or amphibian and learn how they are adapted to where they live.

Insects — What makes an insect an insect? Dress someone as an insect and examine toy insects. Outside portion includes searching for insects with nets and plastic jars.

Life Cycles — Discover how plants and animals grow through stages or life cycles. Observe insects and amphibians to learn how young can look very different from parents. Find out what adaptations animals and plants have throughout their life cycles.

Mammals — Discover what makes mammals different from other animals. Examine furs and skulls to learn about mammals and their adaptations. Choose a combination of subtopics: scat and sign, tracking, camouflage, predator/prey relationships, hibernation and winter adaptations.

Nature Observations – Learn how to make good observations using all five senses and then go outside to practice several different observation techniques.

Plants – Learn about what a plant needs in order to grow and go outside to investigate the diversity of plants using observational skills and look for evidence of why plants are so important. In the winter the focus can be on winter adaptations. How can you tell if a plant is dead or alive? Why do they go into dormancy?

Pollination – Learn the connection between flowering plants and pollinators. Play a game to demonstrate how plants and pollinators work together and discover the important role pollinators play for the plant life cycle as well as for humans.

Puppet Shows — Puppet shows are very flexible and can cover animal adaptations and habits as the seasons change. Our puppet shows entertain and inform through stories, songs, and interactions with a **naturalist**. **Specific information can be included at teacher's request prior to the program date.**

Reptiles & Amphibians — What does cold-blooded mean? What are the main characteristics of amphibians and reptiles, and how do we tell them apart? Students meet a variety of common reptiles and amphibians, and have the opportunity to touch them.

Rocks — Investigate rocks of all sizes. Sort rocks by texture and type and study rock classification. Look through hand lenses to see soil up close and discover tiny rocks in the sand. Learn about minerals and how they are used in everyday life. Other activities: rock polishing, rock cycle (older elementary).

Seeds — Discover the world of seeds, how plants use seeds to reproduce, how seeds provide food for animals, and how seeds travel. Dissect a seed and explore what a seed needs to germinate, or design a seed and see if it will fly.

Senses & Seasons — Use all your senses to explore the animal and plant life outdoors. What clues do animals leave about their activities? Puppet show may be included.

Structures & Behaviors — Study the structures and behaviors of a live animal. Record what you find. Students will develop a definition of adaptation that includes both behavioral and structural adaptations.

Water & Water Cycles — Explore aspects of water: composition, properties, and significance in the world. Play a water cycle game and see how water moves through the environment.

Weather — Use tools to measure weather and explore microclimates. Conduct simple experiments to find wind direction and speed. Learn how changes in weather affect humans, animals, and plants.

Grades: 4 - 6

Archery — A complete introduction to the sport of archery. Students will learn the parts of a bow, shooting safety, and have time to practice target shooting. (This program may not be available at all sites.)

Biomes – Study the four different biomes in Minnesota and what plants and animals are particularly adapted to live there.

Birds — Discover the birds in your neighborhood. Study survival strategies, bird adaptations, behavior, and identification by field marks. In addition to a hike, activities may include any combination of the following: migration game, beak adaptation activity, bird feet, eggs and nests, using binoculars, birds of prey.

Boats — Learn about the kinds of boats that are used on the river and the forces of physics that determine which boats stay afloat. Students will take part in a boat-building challenge.

Classification – Investigate the similarities and differences between the five vertebrate groups. Learn about the differences between physical and behavioral characteristics and how scientists use them to put animals into groups.

Daytime Astronomy — Explore the solar system, the sun, meteors, and more through hands-on **activities. Learn why the moon makes phases, how often meteorites make it to the earth's surface, and how the sun affects all of us here on earth.**

Fish — Identify river fish and learn about fish families. **Create your own "fish" and decide how it would adapt to its habitat.**

Geology – Identify igneous, metamorphic and sedimentary rocks based on characteristics, learn the **rock cycle, and watch how rocks "grow" and erode away.**

Insulation (December-February) – Learn how animals use insulation as an adaptation to keep themselves warm for the winter. Do an experiment to see how well different insulation materials work.

Insects (May–October) — Explore these tiny creatures and discover fun facts about the most abundant animals on earth. Collect and examine insects close-up. Study insect life cycles and adaptations as well as plant/insect interactions. Learn how to classify insects.

Mammals — Examine furs and skulls to learn about mammals and their adaptations. Choose a combination of subtopics: scat and sign, tracking, camouflage, predator/prey relationships, hibernation and winter adaptations.

Mussels of the Mississippi — How do organisms depend upon their physical environment? Students learn about freshwater mussels and their adaptations, as well as how mussels contribute to other life in the Mississippi. A presentation is followed by a game in which students become young mussels that must survive by finding the correct host and substrate. Students will examine real mussels and learn how some common mussels are identified.

Reptiles & Amphibians — Focus on turtles, frogs, or snakes to discover the unique adaptations of local cold-blooded residents. Learn about life cycles and hike to hunt for local reptile/amphibian habitat. This program includes live animals.

Grades: 4 – 6 (continued)

Seeds — Discover the world of seeds: how plants use seeds to reproduce, provide food for animals, and how seeds travel. Dissect a seed and explore what a seed needs to germinate. Design a seed that will fly, and test it in the wind tunnel.

Skull Inquiry — Can we tell if an animal is an herbivore, carnivore, or omnivore by looking at its teeth? What other adaptations can be inferred by examining a real animal skull? Students will learn about canine, molar, and incisor teeth. They will also look at other skull characteristics to determine an **animal's place in the food web**. **Pairs of students** examine and explore skulls in detail to come up with ideas about what the animal eats and how it is adapted to survive. A large skull collection provides a variety of skulls for students to handle.

Soil Mixtures — Investigate soil up close to discover its components. See what kinds of creatures live in it. Go on a soil safari to find different kinds of soil. Other activities may include conducting soil permeability experiments.

Teambuilding — A great introduction for a group just beginning to work together. Students must use teamwork to complete several challenges designed to reveal leadership qualities, team dynamics, and the fun of working with a group.

Trees — Use math skills to count, estimate, and measure big trees. Hike to see the diversity of trees in the area and learn to classify them by leaves, branches, and bark.

Water & Water Cycles — Explore aspects of water: composition, properties, and significance in the world. Perform simple experiments and tests. In winter, activities include snow experiments. Address pollution issues, runoff, and water quality of the river.

Weather — Use tools to measure weather and explore microclimates. Conduct simple experiments to find wind direction and speed. Learn how changes in weather affect humans, animals, and plants.

Grades: 6 - 8

Programs that are listed in other age groups may be adjusted to a middle school audience. Please call and discuss with the staff at 763.694.7790.

Archery — A complete introduction to the sport of archery. Students will learn the parts of a bow, shooting safety, and have time to practice target shooting. (This program may not be available at all sites.)

Geology — Learn about the rock cycle, how minerals are used in everyday life, and what kinds of rocks can be found along the Mississippi River.

Group Challenges — Through group problem-solving activities, learn about the importance of communication, cooperation, and trust. May include slacklining and geocaching if requested and site allows.

Mussels — Learn about the unique lifecycles of mussels as well as their ecological importance. Students will get hands-on experience dissecting mussels to deepen understanding of mussel anatomy as well as learn how to identify different species of mussels found in the Mississippi River. *An extra supply fee applies for this program.*

