

## School Programs 2023-2024



Whether you choose a guided off-trail adventure, an experiment in the field or lab, or a virtual visit, the Nature Center at Shaker Lakes has something for you!

These immersive experiences are designed to engage groups of young scientists, grades PreK-8, in the natural world. They are ideal for classrooms, clubs, or other group organizations looking for a memorable learning experience.

### Contact us to schedule:

[campsandclasses@shakerlakes.org](mailto:campsandclasses@shakerlakes.org)

Phone: 216.321.5935 x243

or fill out the [Program Interest Form](#) online and we'll contact you!

### Field Science

Come explore the Nature Center's Outdoor Classroom as your students use real scientific tools and field research methods. These experiments are modeled after professional scientific practices and modified to support PreK-8<sup>th</sup> grade content standards.

Programs take place outdoors at the Nature Center.

### Learning Lab

In these hands-on learning labs, students use their critical thinking skills to complete nature inspired challenges from inside the classroom. Activities support PreK-8<sup>th</sup> grade content standards and include observation-based games, simple dissections, and engineering challenges.

Programs take place primarily indoors in our classroom or yours.

### Off Trail Adventure

These adventures are for groups who don't mind getting dirty as we scramble off-trail to complete challenges, explore, and experience nature together. Please note: to protect our habitat restoration areas, off trail adventures are only permitted with a Nature Center guide.

Programs take place outdoors at the Nature Center.

### Virtual Visits

These programs include recorded videos, activity pages and live virtual interaction with a Nature Center Educator to allow your group to complete an experiment or series of activities with added convenience. Virtual visits support PreK-4<sup>th</sup> grade content standards.

Programs take place online.

# Field Science Programs

*Programs take place outdoors at the Nature Center.*



## **Sensing the Seasons**

*Recommended for PreK*

- Year Round
- 1 hour
- \$160 per program

Students use their senses and simple observation tools to discover the habitats at the Nature Center. What will we discover as we look with our eyes, smell with our noses, listen with our ears and touch with our hands? What plants and animals call the Nature Center home? Your students will find the answers to these questions and more as they explore outdoors and describe their observations.

Note: This program includes both general observation and a search for “clues” to identify a mystery animal. The core “clues” are staged to ensure there is plenty to discover regardless of the season.

### PreK Standards:

- Science Inquiry and Application - Inquiry
- Life Science – Exploration of Living Things

## **Nature Alive**

*Recommended for grade K*

- Year Round
- 1.5 hours
- \$210 per program

Students practice identifying the 5 basic needs that all living things have in common through a song and game. Then, students head to the trail to find examples of living things at the Nature Center. Outdoor exploration includes completing a scavenger hunt and using hand lenses for up-close investigation.

### K Standards:

- K.LS.1
- K.LS.2
- Nature of Science

## **Habitat Detectives**

*Recommended for grade 1*

- Year Round
- 1 hour
- \$160 per program

While on the trail, students will complete challenges designed to facilitate observation of some of the Nature Center’s habitats. Regardless of whether you visit in the sun or snow, students will compare the sights and sounds of two or more habitats to discover how the basic needs of plants and animals are met in these unique outdoor spaces.

Because this program varies by season, we recommend visiting more than once to incorporate seasonal changes into the experience.

### Grade 1 Standards:

- 1.LS.1
- 1.LS.2
- Nature of Science

# Field Science Programs

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## **Weather Lab (Outdoor)**

*Recommended for grade 2*

- Year Round
- 1 hour
- \$160

Living things react to changes in their environment. In this experience, students measure and record the day's weather using thermometers, weather vanes, anemometers, and a rain gauge. Then, the group makes predictions and observations about how the living things at the Nature Center may be reacting to the forecast.

Consider adding a Guided Bird Walk for an in-depth exploration of how birds interact with the living and non-living things in their habitats (including weather of course!). This addition adds Standard 2.LS.1 to the experience.

Grade 2 Standards:

- 2.ESS.1
- 2.ESS.2
- 2.ESS.3
- Nature of Science

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## **Birds and Butterflies**

*Recommended for grades 3-5*

- Fall or Spring
- 2 hours
- \$270

Birds and Butterflies offers a unique field experience for students focusing on bird migration and how it correlates to the presence of butterflies and caterpillars in our area. Students will learn how bird adaptations have developed to aid them in their migration and the perils they face along the way.

Grade 3 Standards:

- 3.LS.1
- 3.LS.2
- 3.LS.3
- Nature of Science

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## **Rock Soil Science**

*Recommended for grade 6*

- Fall or Spring
- 2.5 hours
- \$320

Students will observe rocks, minerals, and soil that make up the earth around us. Groups will classify and identify different types of rocks, minerals, and soil to understand and decode the past environment in which they formed. This includes small group testing activities that will allow investigation to unearth the wonder and importance of the science behind rock and soil science.

Grade 6 Standards:

- 6.ESS.2
- 6.ESS.3
- 6.ESS.3
- 6.ESS.4
- Nature of Science

# Field Science Programs

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## Water Quality in your Watershed

*Recommended for grades 4-8*

- Fall or Spring
- 4 hours total
  - 1 hour pre-visit (virtual program)
  - 3 hour field trip at NCSL
- \$465

Students will analyze the health of the Doan Brook through observations of the watershed and sampling macroinvertebrates, small organisms that live in the stream. Will there be more pollution or more restoration efforts visible in the watershed? How might these human actions change the environment? Will these changes be helpful or harmful to the macroinvertebrates living in Doan Brook? Your students will answer these questions and more as they make a splash in local water quality science.

\*Students will be invited to step into the stream during the collection process.

Grade 4 Standards:

- 4.LS.1
- Nature of Science

Grade 7 Standards:

- 7.LS.2
- Nature of Science

## Lakes and the Riparian Zone

*Recommended for grades 4-8*

- Fall or Spring
- 4 hours
  - 1 hour pre-visit (virtual program)
  - 3 hour field trip at NCSL
- \$465

Students will hike a part of the Doan Brook watershed and learn the basic principles of a watershed and what makes a healthy lake. Students will determine the health of Lower Lake by taking samples, performing chemical tests, and analyzing the results. They will also take samples of the Doan Brook to make comparisons to the Lake results.

Grade 4 Standards:

- 4.LS.1
- Nature of Science

Grade 7 Standards:

- 7.LS.2
- Nature of Science

## Ecosystems

*Recommended for Grade 5*

- Fall
- 2 hours
- \$270

Students will learn about food chains and the abiotic and biotic factors that make up an ecosystem through studying the micro-ecosystem of a rotting log and the layers of a forest. Students will then perform a worm survey to discover how invasive species disrupt the natural balance of a local ecosystem and what people can do to help.

Grade 5 Standards:

- 5.LS.1
- 5.LS.2
- Nature of Science

# Field Science Programs

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## **Seasonal Interpretive Hike**

*Recommended for All Ages*

- Year Round
- 1 hour
- \$160 per program

Take a hike with a Nature Center Educator to observe the seasonal happenings along the trails. The hike will be slow paced to allow for plenty of observations and can be fully ADA accessible upon request. Group discussion will be modified to fit the age and experience of the participants. Examples include using the 5 senses to explore, basic needs of living things, habitats, local restoration efforts and more.

Standards Vary

Generally, the hike includes grade appropriate life science standards.

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## **Guided Bird Walk**

*Recommended for All Ages*

- Year Round
- 1 hour
- \$160 per program

Take a walk with a Nature Center Educator to observe birds along the trails. The hike will be slow paced to allow for plenty of observations and can be fully ADA accessible upon request. Binoculars will be provided for all participants to borrow. Group discussion will be modified to fit the age and experience of the participants. Examples include bird habitats, migration, adaptations and more.

Standards Vary

Generally, the bird walk includes grade appropriate life science standards.

# Learning Lab Programs

Programs take place primarily indoors in our classroom or yours.



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## Let's Explore: Birds

*Recommended for grades PreK-K*

- Year Round
- 1 hour held in our classroom or yours (select location during registration)
- \$160

Through observation, students discover the similarities and differences of birds. For example, all birds have feathers, but those feathers come in many colors and sizes. All birds have beaks, but those beaks come in different shapes. After warming up our observation skills through indoors games, puppet play and activities, we'll head outside with binoculars to see how these special characteristics help birds survive in local habitats.

Note: We prefer to do some of this program outdoors at your location or ours (15-20 min.), but fully indoor variations are available.

PreK Standards:

- Science Inquiry and Application - Inquiry
- Life Science – Exploration of Living Things

K Standards:

- K.LS.1
- K.LS.2
- Nature of Science

## Let's Explore: Squirrels

*Recommended for grades PreK-K*

- Year Round
- 1 hour held in our classroom or yours (select location during registration)
- \$160

Through observation, students discover what it means to be a squirrel and are introduced to the different types of squirrels that live in Ohio. After warming up our observation skills through indoors games, puppet play and activities, we'll head outside with magnifying lenses to take a close look at squirrel habitat in your school yard (or at NCSL). I wonder... where can squirrels find the food, water and shelter they need?

Note: We prefer to do some of this program outdoors at your location or ours (15-20 min.), but fully indoor variations are available.

PreK Standards:

- Science Inquiry and Application - Inquiry
- Life Science – Exploration of Living Things

K Standards:

- K.LS.1
- K.LS.2
- Nature of Science

## Let's Explore: Reptiles

*Recommended for all ages*

- Year Round
- 1 hour held in our classroom or yours (select location during registration)
- \$160

Students learn the characteristics that all reptiles share through observation of teaching specimen (turtle shells, snake skin sheds, etc.). Then, students meet one of our live animal ambassadors and engage in a Q&A session with the Nature Center Educator.

Standards Vary

Generally, the educator is able to incorporate talking points to compliment grade appropriate life science standards.

# Learning Lab Programs

Programs take place primarily indoors in our classroom or yours.



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## Seed Dispersal Lab

*Recommended for grade 3-5*

- Year Round
- Held in our classroom or yours (select location during registration)
  - Lab Only: 1 hour/\$190
  - Lab and Optional Hike (NCSL Only): 1.5 hours/\$240

Students dissect a plant to observe the parts of the flower and determine the importance of pollination for the survival of the species. BUT once the seeds are pollinated, how do the biotic and abiotic factors in the environment help them spread? In the second part of this program, students investigate seed dispersal through a design challenge - students use recycled materials and craft supplies to design their own seeds while considering the physical characteristics and environmental factors (wind, animals, etc.) needed to spread successfully.

Optional Hike (NCSL Only): Students do a short walk outside (about 30 min.) to observe plant adaptations along our trails and look for examples of seed dispersal. Talking points may include plant adaptations, restoration efforts at NCSL, how native plants provide critical habitat to our local animal species, or more.

Grade 3 Standards:

- 3.LS.1
- 3.LS.2
- 3.LS.3
- Nature of Science

Grade 4 Standards:

- 4.LS.1

## Owl Pellet Dissection Lab

*Recommended for grade 3-5*

- Year Round
- Held in our classroom or yours (select location during registration)
  - Lab Only: 1 hour/\$190
  - Lab and Optional Hike (NCSL Only): 1.5 hours/\$240

Students observe predator/prey characteristics through furs, skulls, and taxidermy. After introducing how an owl might catch its prey, the students complete an owl pellet dissection and identify the bones they find to determine the owl's latest meal. Group discussion centers on how the prey identified (birds, mice, shrew, etc.) may have tried to avoid being eaten, how the owl's behaviors and physical characteristics helped it catch its meal anyway and how the energy was transferred throughout this food chain.

Optional Hike (NCSL Only): Students take a short walk outside (about 30 min.) to observe owl habitat and the adaptations of some of the owl's favorite prey (chipmunks, birds, etc.). I wonder... will the students be able to spot these animals as easily as the owls who depend on them for food?

Grade 3 Standards:

- 3.LS.1
- 3.LS.2
- 3.LS.3
- Nature of Science

Grade 5 Standards:

- 5.LS.1
- 5.LS.2

# Off Trail Adventure Programs

*Programs take place outdoors at the Nature Center.*



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## Shelter Building

*Recommended for adventurers ages 8 to adult.*

- Fall or Spring
- 1.5 hours
- \$210

Explore the outdoors as we hike and complete our favorite team building activity, shelter building. Your group will work together to construct a shelter made of natural materials they find along the trails. How tall of a shelter can you make? What is the fewest amount of materials you can use? How quickly can you build your shelter? These parameters will be decided by your group as participants set their own goals and collaborate to achieve them.

Objectives:

- Set goals.
- Share ideas.
- Reflect on challenges.
- Revise and try again.

This program compliments K-12 SEL Standards: B2, B3 & E1

## Creek Walking

*Recommended for adventurers ages 4 to adult.*

- Fall, Spring, or Summer
- 1.5 hours
- \$210

Gain a unique perspective of the stream habitat as you walk through the Doan Brook with a Nature Center Guide. The main goal of this program is for your group to create memorable experiences connected to nature. So, we'll tailor the program to your interests! We can search for wildlife, learn about the indicators of a healthy stream or simply explore and enjoy the day.

Objectives:

- Create memorable experiences.
- Observe the Doan Brook.
- Try something new.

\* All participants, including adults, should wear shoes that can get wet and bring a change in clothes.

## Forest Exploration

*Recommended for adventurers ages 4 to adult.*

- Fall, Spring or Summer
- 1.5 hours
- \$210

Join a Nature Center educator as we walk through the forest trails making observations to notice which plants and animals call the forest home. In select areas, step off-trail to take an up-close look at the tiny habitats that sometimes go unnoticed underneath logs, leaves, or soil. Magnifying lenses and collection tools will be provided as your group uncovers this hidden world.

Objectives:

- Create memorable experiences.
- Observe the forest habitat.
- Try something new.

\*Variations of this program are available for groups with limited mobility. Please contact us for more information.



## Virtual Programs

*Programs take place online.*



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### **Neighborhood Nature (Virtual)**

*Recommended for grades PreK-1*

- Year Round
- 30 minutes live (virtually) PLUS an assortment of videos and activity pages to extend the learning.
- \$160

This experience is designed to get curious minds wondering about what is living outside their homes or school yards. We will use our sense of sight and hearing to discover examples of what living things need to survive as we explore the habitats along the Nature Center's trails. I wonder... Do the Nature Center grounds have anything in common with your neighborhood? Join the program to learn simple investigation techniques we can use to find the answer!

Extension activities provide exploration through video recordings of the Nature Center habitats and scavenger hunts designed to engage your students in inquiry learning.

#### PreK Standards:

- Science Inquiry and Application - Inquiry
- Life Science – Exploration of Living Things

#### K Standards:

- K.LS.1
- K.LS.2
- Nature of Science

#### Grade 1 Standards:

- 1.LS.1
- 1.LS.2
- Nature of Science

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### **Weather Lab (Virtual)**

*Recommended for grade 2*

- Year Round
- 45 minutes live (virtually) PLUS an assortment of videos and activity pages to extend the learning.
- \$160

Join the Nature Center at Shaker Lakes as we investigate weather's impact on the living things in our environment. Through a combination of recorded videos, activity pages, and a virtual visit, students will learn how the sun's energy causes weather changes that can be measured. Then, we'll practice making those measurements together as we gather data and answer the question: Will I see more birds at the Nature Center on warm days with no precipitation or on cool days with a lot of precipitation?

Extension activities include instructions to create your own rain gauge, anemometer, and weather vane for classrooms to create their own weather experiments for further exploration.

#### Grade 2 Standards:

- 2.ESS.1
- 2.ESS.2
- 2.ESS.3
- Nature of Science

## Virtual Programs

*Programs take place online.*



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### **Life Cycles Around Us (Virtual)**

*Recommended for grade 3*

- Year Round
- 45 minutes live (virtually) PLUS an assortment of videos and activity pages to extend the learning.
- \$160

Plants and animals have life cycles that are designed especially for survival. Students will compare the similarities and differences of the life cycles of different organisms through games and observation. One of the life cycles that will be closely investigated will be the monarch butterfly. We will learn how many life cycles occur during migration in the fall and spring. Each student will learn and be equipped with their senses and technology to become citizen scientists as our monarchs migrate back to Ohio to start the cycle once again.

Grade 3 Standards:

- 3.LS.3
- Nature of Science

### **Water Quality in Our Watershed (Virtual)**

*Recommended for grade 4*

- Year Round
- 45 minutes live (virtually) PLUS an assortment of videos and activity pages to extend the learning.
- \$160

Water quality is often monitored by scientists because changes in water quality impact the health of all of the organisms that depend on it for survival. In this program, 4th graders become water quality scientists. Through recorded videos and activity pages, students discover how human action impacts water quality and how organisms called macroinvertebrates tell us about stream health. Then, during the virtual visit, the scientific process is modeled as students analyze data from two watersheds in Northeast Ohio: Doan Brook Watershed and the River Styx Watershed. How will their water quality compare and what might that mean for the surrounding habitats?

Grade 4 Standards:

- 4.LS.1
- Nature of Science