

IV. EDUCATIONAL RESOURCES

A. DISCOVERY BOXES

"Discovery Boxes" are available for leaders to use in the park on a first-come, first-served basis. Call to reserve boxes at 870-4330 or to schedule a time to review the boxes.

All boxes come complete with equipment and activity guides including necessary background materials. Discovery Box information must not be photocopied due to copyright restrictions.

All activities are hands-on, site-specific, and selected for 5th grade suitability (though easily adaptable for other age groups). Leaders are encouraged to use an interdisciplinary approach with these activities by incorporating math, art, language arts, and social studies with science.

Discovery Boxes provide wonderful activities for children and adults to use in learning about the environment and the role each human being plays in it. Group leaders are encouraged to implement pre- and post- activities emphasizing the discovery box theme.

Junior Discovery Boxes

Junior Discovery Boxes are activities that are especially appropriate for children in grades K-2. They are indicated by a dot •.

1. FOREST LIFE



BUILD A TREE

Length: 30 minutes

Source: *Naturescope*

Area: Indoors or Outdoors - open area

Summary: Working together to build a "human tree", students learn the inner parts of a tree and how each part works.

CHAIN GANG, THE

Length: 30 minutes

Source: *Hands-on Nature*

Area: Indoors or Outdoors - open area

Summary: Students learn the dynamics of producers, consumers, and decomposers in nature and how they form food chains and food webs in this interactive activity.

DRAWN TO NATURE (a special Lodge Discovery Box)

Length: 1 hour

Source: Blue Jay Point Staff and *The Private Eye*

Area: Anywhere

Summary: Students increase their observation skills by beginning a nature journal. Use a "magic eye" to get a close-up look at a series of natural objects. Use the drawing materials provided to sketch what you see, and then practice both creative and descriptive writing skills to complete your journal entry.

EVERY TREE FOR ITSELF

Length: 30 minutes

Source: Project Learning Tree

Area: Indoors or Outdoors - open area

Summary: Learn about the needs of trees and what happens when trees grow too close together and have to compete for their needs.

GROW A TREE •

Length: 20 minutes

Source:

Area: Indoors or Outdoors - seated

Summary: Reinforce the four things that trees/plants need to live and grow (air, sun, water, and soil) in a sit-down game.

KEYING OUT TREES

Length: 1 - 1½ hours

Source: *Naturescope*

Area: Indoors or Outdoors - seated

Summary: "Key out" group members according to their physical features, then use the same technique to identify common leaves.



LOOK WHAT'S AT YOUR FEET!

Length: 1 hour and 1 overnight

Source: *Hands on Nature, Nature Naturally*, and Kristin Arnebold

Area: Outdoors

Summary: Explore the world underfoot. Observe the forest floor and fallen logs to gain insight into wildlife rarely thought of or seen. Group activity turns into individual time when students pick a forest floor spot and collect information from it. Also, an overnight activity reveals what kinds of organisms can be found in a shovelful of soil.

MAPLE SEED MIX-UP •

Length: 30 minutes

Source: *Naturescope*

Area: Indoors or Outdoors - open area

Summary: Students act out the randomness of seed dispersal to areas with favorable conditions, while learning some things that may inhibit seed growth.

MEET A TREE •

Length: 20 - 30 minutes

Source: J. Cornell

Area: Outdoors - forest setting

Summary: Use the sense of touch to discover and recognize a particular tree by its bark texture and other trunk features.

MIND'S EYE, THE

Length: 30 minutes

Source: Kelley Stanton

Area: Anywhere

Summary: Work on descriptive language skills while examining objects found in nature. Partners describe what an object looks like while their partner guesses what it is.

MINERAL MADNESS

Length: 1 - 2 hours

Source:

Area: Indoors or Outdoors - seated

Summary: Investigate some of the properties of minerals. Learn to identify several common minerals through scientific observation and experimentation.

MY TREE

Length: 1 hour

Source: Blue Jay Point staff

Area: Outdoors - forest setting

Summary: Use a tree key to learn about an individual tree. Make observations about forest layers, diversity, etc.

NOCTURNAL NATURE

Length: 1 hour, followed by hike

Source: Blue Jay Point staff

Area: Indoors or Outdoors - seated, followed by a self-led hike

Summary: Is your group fascinated by the outdoors at night? Use this combination of factual information, pictures, and animal legends to learn about nocturnal nature. Listen to recordings of different owls found at Blue Jay Point in preparation for the main event—your night hike! Helpful hints for a successful night hike are included.

PICTURE THIS

Length: 30 - 60 minutes

Source: Kelley Stanton

Area: Anywhere

Summary: Develop descriptive language and listening skills with this challenging, but quiet, activity. One student describes a simple line drawing of a natural object to a partner. The partner listens to the step-by-step description and tries to reproduce the drawing with pencil and paper.

PLANT BINGO •

Length: 30 minutes
Source: Stephanie Avett
Area: Outdoors - garden or trail
Summary: Play bingo as you search for and different types of plants (ex: vine, tree, fern), parts of plants (ex: flower, leaf, seed) and more!

SEED BINGO

Length: 30 minutes
Source: Kelley Stanton
Area: Outside in "seedy" locations
Summary: Play bingo as you search for and identify 8 different types of seed locomotion / travel. Guess which seed you think will make it the farthest.

SEED ME THIS

Length: 45 minutes
Source: *Adirondack Education Manual* and *Naturescope*
Area: Indoors or outdoors - open space
Summary: Learn different ways seeds disperse and how seeds are adapted for specific habitats. Hike to look for different seed adaptations. Students are challenged to modify a bean seed to have different adaptations.

SOCK IT TO ME •

Length: 30 - 45 minutes
Source: Kelley Stanton
Area: Anywhere
Summary: Participants test their sense of touch by reaching into a "mystery sock" and trying to guess what it contains. Students can also work on their descriptive language skills by describing what their mystery object feels like to find their match among fellow participants.
Allergy Note: This activity includes whole and "chewed" tree nuts (pecans and black walnuts).

TERRIFIC TREES •

Length: 1 hour
Source: Blue Jay Point staff
Area: Anywhere
Summary: Use the series of labeled, laminated leaf cards for a family group matching activity. The cards can then be used as an identifying guide to leaves on a tree hike. *The Gift of a Tree* picture book, which relates a tree's importance from seed to rotting log, can be used to wrap up the session.

WOODLAND BINGO •

Length: 30 minutes - 1 hour
Source: D'Nise Hefner
Area: Anywhere
Summary: Have fun playing bingo as a focused nature hike or as a sit-down game played with clues.

2. INSECTS AND SPIDERS

BUG BINGO •

Length: 30 minutes - 1 hour
Source: *Naturescope*
Area: Outdoors
Summary: Introduce insect habitats and look at the ways insects find food, water, shelter, and a place to lay their eggs. Test student's abilities to spot insects and habitats with a bingo game on a hike.

CAMO-CREEPERS •

Length: 30 minutes
Source: Project WILD
Area: Outdoors - meadow, wooded trail, parking lot margins
Summary: Learn about the concept of insect and animal camouflage—of both predator and prey—while hunting for pipe cleaner "walking sticks."



HOPPER HERDING

Length: 1 hour
Source: OBIS and Kristin Arnebold
Area: Outdoors - tall grass field; Indoors - seated
Summary: Discuss what makes an insect an insect. Look for insects in their natural habitat and round up a herd of hopping insects (grasshoppers, katydids, and crickets) using sweepnets to find out how many different kinds live around Blue Jay Point. For a rainy day activity, unscramble a grasshopper picture and label its parts.

MACROINVERTEBRATE MAYHEM

Length: 45 minutes - 1 hour
Source: Project WET
Area: Outdoors
Summary: Learn the effects of environmental stressors on the macroinvertebrate population of an aquatic ecosystem by playing a game of tag. Students will model different behaviors to learn characteristics of pollution intolerant and tolerant insects.

MASTERS OF MIGRATION

Length: 45 minutes - 1 hour
Source: MonarchWatch
Area: Outdoors - open area
Summary: Learn about the life cycle of a butterfly, then model how monarch butterflies migrate to Mexico. Learn about the difficulties they encounter on their long journey.

ORDERING INSECTS

Length: 1 hour
Source: Stephanie Avett
Area: Indoors or Outdoors - seated
Summary: Discover how scientists categorize living things. Students use pictures and models to try to figure out the characteristics common to their order of insects and create their own insect that fits into that order. Several orders of insects are introduced (Coleoptera, Hemiptera, Hymenoptera, Odonata, and Orthoptera), with information on other common orders (Lepidoptera, Diptera, and Homoptera).

SPIDER SENSATIONS •

Length: 15 minutes
Source: *Hands on Nature*
Area: Anywhere
Summary: Taking on the role of a spider, play a simple game to learn how web-spinning spiders know by touch, rather than sight, when they've captured their prey.

WEB IT!

Length: 30 minutes
Source: OBIS
Area: Outdoors - spider habitat
Summary: With the aid of spray mists, investigate the adaptations and behavior of spiders.

WHIRLIGIGS AND WATER BUGS

Length: 45 minutes
Source: Blue Jay Point staff
Area: Outdoors - Blue Jay Point's Garden Pond
Summary: Dip a net into the Blue Jay Point pond and get the real scoop on what types of aquatic life inhabit its waters.

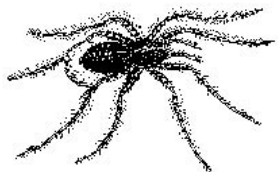
3. ANIMAL LIFE

AM I A BIRD?

Length: 15 - 30 minutes
Source: Leigh Scott-Prater
Area: Anywhere
Summary: Develop language skills and encourage interaction between students, all while increasing awareness of the wild animals that might be living in our backyards.

BACKBONE BOOGIE

Length: 1 hour
Source: *Naturescope*
Area: Indoors or Outdoors - open area
Summary: Discover what makes mammals different from other vertebrates while learning about the characteristics of the five major vertebrate groups in this "Steal-the-Bacon" style activity.



BEAT THE CLOCK

Length: 45 min.
Source: *North Carolina WILD Places*
Area: Indoors or Outdoors - open area
Summary: Students attempt to "beat the clock" while exploring amphibian development and some of the difficulties facing amphibian habitats. For an amphibian, development is risky business, as once the egg has been laid, there's no turning back! The trick is to develop lungs and get out of the vernal (temporary) pool before it dries up—a task that is not easily done. Information about several of North Carolina's special amphibian species is included.

BEAVERS OF BLUE JAY

Length: 30 - 45 minutes plus hike time
Source: Blue Jay Point staff
Area: Anywhere
Summary: Learn about this fascinating mammal that calls Blue Jay Point home. Handle a beaver pelt and beaver chew sticks. If time allows (1 hour needed), take a hike down the Beaver Point trail to look for beaver signs at the lake shore!

BIRD BEHAVIOR BINGO

Length: 30 minutes
Source: *Naturescope*
Area: Indoors or Outdoors - wherever you can see birds!
Summary: Observe birds in their habitat and understand why they behave as they do. A bingo game helps reinforce identification of the behaviors.

FROGS AND POLLIWOGS •

Length: 30-45 minutes
Source: *Hands-On Nature*
Area: Anywhere
Summary: Learn about the physical differences between frogs and tadpoles while discussing the metamorphosis process. Discuss how their adaptations affect their life and participate in an action play, "Merry Metamorphosis."

GUESS WHAT'S FOR DINNER?

Length: 30 min. – 1 hr
Source: Falls Lake EELE
Area: Indoors or Outdoors - open area
Summary: Students explore the transfer of energy within an aquatic food web in this interactive activity.

GOING BATTY

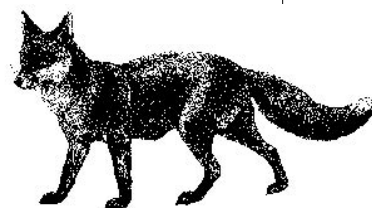
Length: 30 min. – 1 hr
Source: Kat Bukowy, Bat Conservation International, Wildlife Resources Commission
Area: Indoors/Outdoors
Summary: Learn all about bats through interactive games. Students will learn the difference between fact and fiction in a trivia game, how echolocation works in a game of Bat/Moth, and the differences in bats inhabiting the Eastern United States.

MAMMAL SAFARI

Length: 1 hour
Source: *Naturescope*
Area: Outdoors - forest, field
Summary: Hike to investigate burrows, dens, nests, droppings, rubbings, snips & chews, scat & tracks, etc. as clues to mammals and other wildlife (handout included).

MEET A MATE •

Length: 30 minutes
Source: *Naturescope*
Area: Anywhere
Summary: Students test the accuracy of their sense of hearing and compare themselves with animals that communicate largely by sound rather than sight. Attempt to find a mate using sounds hidden in film canisters.



NOSE KNOWS, THE •

Length: 30 minutes
Source: NPS Wolf Pac
Area: Anywhere
Summary: Test the accuracy of humans' sense of smell and compare it to that of other animals by locating members of your "fox family" using only your nose. Secret scents are contained in film canisters.
Allergy Note: This box uses artificial and natural flavorings for scents, including almond extract (tree nut).

OH DEER

Length: 30 minutes
Source: Project WILD
Area: Indoors or Outdoors - open area
Summary:: Learn about the components of habitat in this "move around" activity that will help students: identify food, water, and shelter as three essential components of habitat; describe the importance of good habitat for animals; define "limiting" factors and give 3 examples; and recognize that some fluctuations in wildlife populations are natural, as ecological systems undergo constant change.

OWL PELLETS

Length: 1 hour
Source: *Naturescope*
Area: Indoors or Outdoors - seated
Summary: Discover what owls eat and study the skeletal system by dissecting owl pellets. This box contains everything you need to complete an owl pellet lab, except for the owl pellets! Forceps, worksheets, and a lab video are included. Owl pellets can be purchased from the following sources – be sure to allow enough time for your order to be completed!

Pellets Inc.	Nasco
(888) 446-OWLS	(800) 558-9595
www.pelletsinc.com	

QUICK FROZEN CRITTERS

Length: 45 minutes
Source: Project Wild
Area: Outdoors - open area
Summary: Play an active version of "freeze tag," which illustrates the role of predator/prey relationships, adaptations, and limiting factors affecting wildlife populations.

REPTILE RELATIVES

Length: 30-45 minutes
Source: Sea Turtle Trek EELE and Laura Copeland
Area: Indoors or Outdoors
Summary: Become familiar with the adaptations, anatomy, and natural history of a sea turtle and a terrestrial turtle. Learn how certain adaptations make them well suited for the habitats they live in and why the sea turtle is endangered and the eastern box turtle is not.

SCALES-N-TALES

Length: 1 hour or more
Source: adapted from a lesson plan by Helen Eagleson and NC CATCH
Area: Lakefront (Sandy Point works well)
Summary: Use this box to complement a fishing experience at Blue Jay Point. Participants will learn to recognize the parts of a fish's anatomy, identify some species of local fish, record and evaluate scientific data using by using different kinds of organic bait. Develop language and writing skills by describing the event of catching a fish and concocting a "fish story". You must provide your own fishing gear and bait. All NC Fishing regulations apply.

WATERFOWL WONDERS

Length: 2¹/₂ hrs. including video—can be broken into 2 sessions
Source: *Naturescope*
Area: Indoors
Summary: Learn about waterfowl adaptations that help them be successful in their environment. Reinforce this information with a hilarious tabletop relay game before watching Canada Geese in action in the video "Fly Away Home!"

WHO'S WHO AT BLUE JAY (a special Lodge Discovery Box)

Length: multiple activities, length varies
Source: D'Nise Hefner
Area: Indoors
Summary: Keep your group busy with the multiple activities in this box. The activities are designed to perform a variety of housekeeping functions for groups that stay in the Blue Jay lodge, including Ice Breaker, Division into Groups, Visual Display of animals that call Blue Jay home, and Inclement Weather Activity (mini-reports and presentations).

4. ENVIRONMENTAL STUDIES

AIR BINGO •

Length: 30 minutes
Source: US Environmental Protection Agency – Air Pollution Training Institute Air Pollution Scavenger Hunt (adapted)
Area: large room sized area indoors or out.
Group size: 15 to 30 kids, Kindergarten to 2nd Grade (Ages 4 – 8)
Summary: This activity will help early elementary children begin thinking about the air around them and air quality concerns. Even young children have the power to influence the quality of the air around them.

BIG SWEEP

Length: 1 hour and up
Source: Keep America Beautiful
Area: Outdoors - Upper Barton fishing area, Lower Barton Bridge areas, (these areas require car access can hike back to Center or Lodge if desired-approx 1¹/₄ mile hike), BJP lake shore in dry weather.
Summary: Help out wildlife habitat and improve water quality by donning rubber gloves and picking up trash along the Falls Lake shore. Wear closed-toe shoes!!!

DRIP DROP

Length: 30 minutes
Source: Project WET and Christina Sorenson
Area: Outdoors (Open Area)
Summary: Students learn about erosion and sedimentation as they act as water drops traveling to a pond. Students will compare the speed at which water flows across land, with and without plant cover, and how this affects sediment pollution.

DON'T GET WASTED

Length: 30-45 minutes
Source: Blue Jay Point staff
Area: Anywhere
Summary: Encourage interaction between students while increasing awareness of how we can avoid sending waste to the landfill with this recycling icebreaker.



DON'T TAKE A "LICHEN" FOR POLLUTION

Length: 30 minutes - 1 hour
Source: Air and Waste Management Association: Environmental Resource Guide – Air Quality
Area: Outdoor area containing lichen
Group Size: Up to 30 children, Grades 3 - 8
Summary: In this activity the participants learn about different kinds of lichen and how they act as bio-indicators for air pollution. The participants will evaluate the relative health of the environment they are studying based on the presence, diversity, and size of lichen in the area.

DRAGONFLY POND

Length: 2 hours
Source: Aquatic Project Wild
Area: Indoors
Summary: Learn to evaluate the effects of different land uses on wetlands. This activity requires group decision-making on how to minimize any damaging effects on wetlands during construction.

EARTH BUDDIES •

Length: 1 hour
Source: *Naturescope*
Area: Anywhere
Summary: Encourage the development of an environmental ethic with these three separate, short activities. "**Happy Earth/Sad Earth**" allows students to discuss and vote whether pictures in a series of photos indicate activities that are good or harmful for the Earth. "**Nine Lives of a Peanut Butter Jar**" allows for creative thinking about reusing an everyday object. "**Good Lunch/Bad Lunch**" compares the "environmentally green" components of bagged lunches rather than the nutritional component!

ENVIRO GAMES

Length: multiple activities, length varies
Source:
Area: Indoors
Summary: Keep your group entertained and dry with many different environmental games good for rainy day fun!

ENVIRO SING-ALONG

Length: length varies

Source:

Area: Anywhere

Summary: Have an evening fireplace or campfire sing-along with this box, containing an audio tape of different environmental songs, along with song booklets.

EROSION GAME, THE

Length: 30 minutes

Source: Stevens Nature Center

Area: Indoors or Outdoors, open area

Summary: Demonstrate erosion and the effects that people and rain have on the landscape with this action-based game. The object of this game is for the soil to stay in the boundaries of a given ecosystem. In this instance, the "soil" should stay at Blue Jay Point and not run into Falls Lake.

ETHI-REASONING

Length: 1 hour

Source: Project Wild

Area: Indoors or Outdoors - seated

Summary: Students use critical thinking skills to evaluate situations that require ethical decisions.

EYE SPY •

Length: 30 minutes

Source: Kat Bukowy

Area: Blue Jay Center for Environmental Education

Summary: Students will increase their skills of observation in this visual indoor scavenger hunt. Most appropriate for younger audiences and students with reading/language differences.

INDOOR SCAVENGER HUNT

Length: 20-40 minutes, plus discussion

Source: Blue Jay Point staff

Area: Blue Jay Center

Summary: Team up to compete in an Indoor Scavenger Hunt through the Blue Jay Center exhibits with this rainy/hot/cold day activity! Water quality, current environmental issues, habitat types, and more will keep you busy as you search for elusive answers!

LIFE CYCLE OF EVERYDAY STUFF, THE

Length: 1-2 hours

Source: D'Nise Hefner and Stephanie Avett

Area: Indoors

Summary: Students gain an understanding of the life of everyday items, such as soccer balls, cell phones, and CDs, from their "birth" as raw materials to their "death" or "re-birth" after we've finished using them. Small and large group activities encourage students to act out the life of an everyday item, brainstorm ideas for reuse, learn about where different raw materials come from, and more!

MY CHANGING NEIGHBORHOOD

Length: 30 minutes

Source: *Where Have All the Birds Gone*, by John Terborg

Area: Indoors or Outdoors - seated

Summary: Introduce habitat loss with this feltboard activity and story that demonstrates the changes in wildlife, particularly songbirds, in a neighborhood over a period of years as development encroaches.

THIRSTY FOR WATER CONSERVATION

Length: 1 - 2 hours

Source: Aquatic Project WILD and Project WILD

Area: Indoors or Outdoors - seated, followed by hike to the lake.

Summary: Explore what is polluting our water with water pollution games and a water testing activity. "**Deadly Waters**" gives exposure to many possible pollutants, their causes, and how they affect the environment. "**No Water Off a Duck's Back**" focuses on different kinds of litter and how they adversely affect aquatic wildlife. Also, learn to test water quality by looking at temperature, turbidity, and pH. Compare and share your results with other groups by recording your data on our Falls Lake water quality sheet.

TRIAL OF FREDDIE THE FUNGUS, THE

Length: 2 hours
Source: *The Trial of Freddie the Fungus*, by Tremont Institute
Area: Indoors or Outdoors - seated
Summary: Students explore the interconnectedness of all forest life. Students learn that human ethics/values cannot be placed on wild plants and animals while they act out and discuss this activity.

WETLAND METAPHORS

Length: 30 minutes
Source: Aquatic Project WILD
Area: Indoors or Outdoors - seated
Summary: Citizens in our rapidly changing world should understand the benefits of wetlands as resources for humans and other species. By matching metaphoric objects and pictures to written wetland functions, this activity brings those benefits to life and encourages a new appreciation of the many important roles wetlands play.

WETLANDS WORRIES

Length: 1 - 2 hours
Source: National Wildlife Federation
Area: Indoors
Summary: Recreate a town meeting called to discuss the development of a wetland area. Role-play a developer or an Audubon Society representative—but get involved.