

# Middle & High School Discovery Box List

Discovery Boxes are available to leaders for use on a first-come, first-served basis. Call to reserve boxes at 870-4330.

All boxes come complete with equipment and activity guides including necessary background materials for the hands-on, site-specific activities. The boxes on this list are especially appropriate for middle and high school students. 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 students 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 Box themes.

## 1. Plants

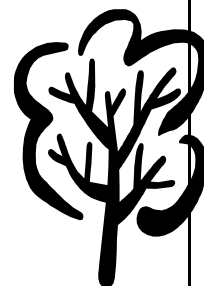
### KEYING OUT TREES

**Length:** 1 – 1 ½ hours

**Source:** Naturescope

**Area:** Indoors or Outdoors – seated

**Summary:** “Key out” groups members according to their physical features, then use the same technique to identify common leaves.



### SEED ME THIS

**Length:** 45 minutes

**Source:** Adapted from Adirondack Educational Manual and Naturescope

**Area:** Indoors or Outdoors – open space

**Summary:** Learn different ways seeds disperse and how they are adapted for specific habitats. Hike to look for adaptations for different habitats, then challenge students to modify a bean seed.

## 2. Animals

### GOING BATTY

**Length:** 30 minutes—1 hr

**Source:** K. Bukowy, Bat Conservation Int'l, 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.

### OWL PELLETS

**Length:** 1 hour

**Source:** Parts adapted from Naturescope

**Area:** Indoors or Outdoors – seated

**Summary:** Discover what owls eat and 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.

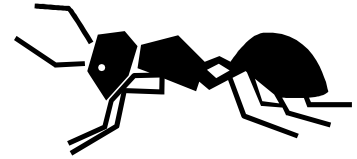
Nasco

[www.pelletsinc.com](http://www.pelletsinc.com)

[www.enasco.com](http://www.enasco.com)



## 3. Invertebrates



### 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 sweep nets 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.

### MASTERS OF MIGRATION

**Length:** 45 minutes – 1 hour

**Source:** Adapted from the MonarchWatch Program

**Area:** Outdoors, open area

**Summary:** Learn about the life cycle of a butterfly, then act out how monarch butterflies migrate to Mexico and 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 figure out the characteristics common to their order of insects and create their own insect that fits into their order. Several orders of insects are introduced (Coleoptera, Hemiptera, Odonata, Hymenoptera, and Orthoptera), with information on other common orders.

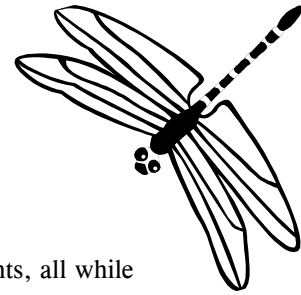
### WHIRLIGIGS ‘N WATER BUGS

**Length:** 45 minutes

**Source:** Blue Jay Point Staff

**Area:** Outdoors – Blue Jay Point’s Garden Pond

**Summary:** Dip a net into the Blue Jay pond and get the real scoop on what types of aquatic life inhabit its waters.



## 4. Ecology

### 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.

### BEAT THE CLOCK

**Length:** 45 minutes

**Source:** Adapted from *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 a very 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.

### 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.

# BLUE JAY POINT COUNTY PARK

## **DRAWN TO NATURE (a special Lodge Discovery Box)**

**Length:** 1 hour

**Source:**

**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 creative and descriptive writing skills to complete your journal entry.

## **LOOK WHAT’S AT YOUR FEET!**

**Length:** 1 hour and 1 overnight    **Source:** *Hands-On Nature*, *Nature Naturally*, and Kristin Arnebold

**Area:** Outdoors

**Summary:** Observe the forest floor and fallen logs to gain insight into wildlife rarely thought of or seen. To practice observation skills, students pick a spot on the forest floor and collect information from it. An overnight activity reveals what organisms can be found in a shovel full of soil.

## **NOCTURNAL NATURE**

**Length:** 1 hour, plus a hike

**Source:** Blue Jay Point Staff

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

**Summary:** Use this combination of factual information, pictures, and animals legends to learn about nocturnal nature. Listen to recordings of different owls found at Blue Jay 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 language and listening skills with this challenging, but quiet activity. A simple line drawing of a natural object is described as a partner tries to reproduce the drawing.

## **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.

## **TRIAL OF FREDDIE THE FUNGUS, THE**

**Length:** 2 hours

**Source:** Adapted from *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 of 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 of wetlands.

## **WETLAND 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.



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

**Length:** 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).

## 5. Environmental Studies

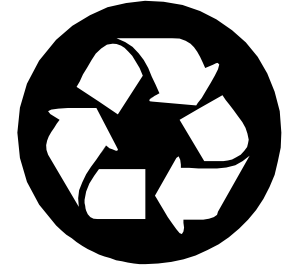
### DON'T GET WASTED

**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.



### ETHI-REASONING

**Length:** 1 hour

**Source:** Adapted from Project WILD

**Area:** Indoors or Outdoors – seated

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

### INDOOR SCAVENGER HUNT

**Length:** 20 – 40 minutes

**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 great rainy/hot/cold day activity! Water quality, current environmental issues, habitat types, and more will keep you busy as you search for elusive answers! Following activity, discuss as a class!

### 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 this “birth” as raw materials to their “death” or “rebirth” 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!

## 6. Earth Science

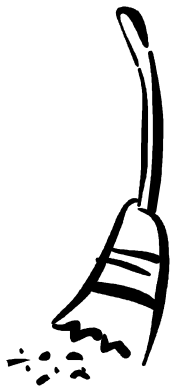
### BIG SWEEP

**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. 1 ¼ mile hike), BJP lakeshore 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!!



# BLUE JAY POINT COUNTY PARK

## DISCOVER OUR ECOLOGICAL ADDRESS

**Length:** 30 min. – 2 hours

**Source:** Adapted from Project WET and NC Office of EE website

**Area:** Outdoors

**Summary:** This box contains multiple activities, each lasting approximately 30 minutes. **Water Drop Match:** Where does the water go when it rains? Learn what a river basin is as you discover Blue Jay Point's river basin and what makes it special (this particular activity could be done inside). The following activities use Blue Jay's giant N.C. river basin map. **River Basin Riddler Relay:** This action-packed, trivia-based fact game promotes participant learning about N.C.'s 17 river basins (best for class-size groups). **River Basin Hopscotch:** Participants label the 17 N.C. river basins and increase their fitness by "hopscotching" across the map while practicing the basins' locations (great for small groups!). **Map Makers:** Using the provided information, participants label geological features, cities, etc. on the giant map with sidewalk chalk. Participants draw in the major rivers and tributaries, then trace how the water flows in the basins.

## DISCOVERING DROUGHT

**Length:** 1 - 2 hours

**Source:** Adapted from Project WET *Discovering Drought* publication

**Area:** Indoors

**Summary:** How can there be drought in a rainforest—or in a desert? What exactly is a drought? Learn these answers and more, such as droughts around the world, predicting and planning for droughts and dendrochronology (history and life of a tree).

## 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 with lichen

**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.

## MINERAL MADNESS

**Length:** 1 – 2 hours

**Source:** Various sources

**Area:** Indoors or Outdoors – seated

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

## THIRSTY FOR WATER CONSERVATION

**Length:** 1 – 2 hours

**Source:** Aquatic Project WILD and Project WILD

**Area:** Indoors or Outdoors, seated, followed by a hike to the lake

**Summary:** Explore what is polluting our waters 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.

