

## PNW BOCES CENTER FOR ENVIRONMENTAL EDUCATION PROGRAMS FOR KINDERGARTEN

### **NYS SCIENCE STANDARD PROGRAMS** (click on title to link to description)

#### **EXPLORING THE WEATHER WITH MY SENSES**

*K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals in the places they live.*

#### **FOREST SYSTEMS**

*K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals in the places they live.*

#### **INSECTS: NATURE'S ARCHITECTS**

*K-LS1-1- Use Observations to describe patterns of what plants and animals (Including humans) need to survive.*

#### **MODELING PLANT AND ANIMAL SYSTEMS: THE BEAR AND THE BEECHNUT**

*K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals in the places they live.*

#### **NOCTURNAL SYSTEMS: I HAVE WHAT I NEED AT NIGHT**

*K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals in the places they live.*

#### **POND SYSTEMS**

*K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals in the places they live.*

#### **WILDLIFE: HOW ANIMALS CHANGE THEIR ENVIRONMENT**

*K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals in the places they live.*

### **CLASSIC CEE PROGRAMS** (click on title to link to description)

BAT AND MOTH

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SOIL - THE BASIS OF LIFE

SUPERMARKET BOTANY (SEE WHERE DOES YOUR FOOD COME FROM?)

TURTLES, FROGS, TOADS, SNAKES, WHAT'S THE DIFFERENCE?

WEATHER

WHERE DOES MY GARBAGE GO?

WILDLIFE

KINDERGARTEN PROGRAMS  
PNW BOCES CENTER FOR ENVIRONMENTAL EDUCATION PROGRAM  
To BOOK A PROGRAM: <http://portal.pnwboces.org/cee/>



## NYS SCIENCE STANDARD PROGRAMS

### **EXPLORING THE WEATHER WITH MY SENSES**

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** Hands-on senses stations, weather data sheets, live animal ambassador

This program introduces students to the various kinds of weather we have in the Hudson valley. Through engaging and a hands-on presentation, students will learn what makes weather and how meteorologists measure and record weather conditions. The class will make its way outside and use real meteorology tools to gather weather data, then analyze the data and look for local weather patterns.

### **FOREST SYSTEMS**

**Location:** Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** pictures of plants and animals, soil compaction experiment

Beginning with an introduction to the forest habitat, students will establish the pattern of what all living things need to survive. They will make observations of living organisms during an interpretive walk, discover what causes positive and negative impacts to the forest, and learn how to reduce their impact on the forest while in the classroom.

### **INSECTS: NATURE'S ARCHITECTS**

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, insect mounts, live animal ambassador

Students will learn the basic parts of an insect and then make the claim that "Insects can change their environment". While investigating three insects, students will observe the pattern that animals change the environment to meet their needs, and use those insects as evidence to support or refute their claim. The program concludes with a hands-on activity and a live animal ambassador that will be used as more evidence to support the claim made at the beginning of the program.

### **MODELING PLANT AND ANIMAL SYSTEMS: THE BEAR AND THE BEECHNUT**

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** Animal artifacts, beech nuts, animal artifacts and laminated pictures, live animal ambassador

Using animal and plant artifacts from different habitats, students will draw models of plants and animals getting what they need from the places they live and the system of which they are a part. A live animal ambassador will be brought to the class for students to explore and to demonstrate what part an animal plays in the habitat it lives. This program contains a formative assessment of the models that students will create and provides a follow up assessment teachers can use.

## NYS SCIENCE STANDARD PROGRAMS

### **NOCTURNAL SYSTEMS: I HAVE WHAT I NEED AT NIGHT**

**Location:** School/Madden

**Presentation Style:** Individual Classes

**Instructional Resources:** PP presentation, animal artifacts and live animal ambassador

What do plants and animals need to survive at night? This program will allow students to observe and explore the needs of plants and animals and their various adaptations to get their needs met. Students will be observing media and exploring a live animal ambassador to look at patterns in the structure and function of nocturnal plants and animals.

### **POND SYSTEMS**

**Location:** Madden

**Presentation Style:** Individual Classes

**Instructional Resources:** Pond Specimens, pond specimen props

What lives in a pond and how do the organisms that live in a pond get what they need? What makes a pond a system? Students will use Madden's Pond as a laboratory to explore what lives there and collect and explore live specimens. Students will then create interactive pond systems models that demonstrate how plants and animals that live in a pond get what they need.

### **WILDLIFE: HOW ANIMALS CHANGE THEIR ENVIRONMENT**

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, animal artifacts, live animal ambassador

This program uses the beaver and a deforested mountain system to help students understand how plants and animals can change their environment. Through the use of beaver artifacts and media, students will be able to construct the argument that plants and animals can have a profound effect on their habitat. In addition to beaver artifacts, a live animal ambassador will be brought for the class to examine and determine what part the animal plays in changing its system.

## CLASSIC CEE PROGRAMS

### **BAT & MOTH**

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, bat skeleton and other bat specimens, game

This program focuses on the simple bat-moth food chain to help students understand their interdependence and how bats hunt through the use of echolocation. To better understand echolocation, students will play the bat-moth game. After the first round, the students will use their observations of when the moth was able to escape the bat to create a list of questions to understand why. Using what they learned, students will play another round to determine if their observations were correct. **Assembly Model Not Available - 1 class/45 minutes**

### **BIRDS & RAPTORS**

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, preserved bird specimens and parts, bird guides, live avian ambassador

This program introduces students to the sights and sounds of birds, with a focus on their unique characteristics! Through our interactive presentation, students will explore bird adaptations such as feathers, beaks, and talons by examining our artifacts that include a variety of feathers, preserved bird specimens, and bird guides. Students will also have the opportunity to observe these adaptations on a live ambassador bird of prey.

## CLASSIC CEE PROGRAMS

### **CLASSROOM POND STUDY**

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP Presentation, live animals from a pond, preserved animals and specimens, ID Charts

This program is designed for groups that are unable to travel to Madden. Students will learn what makes a pond different from a lake and the amazing process of complete and incomplete metamorphosis. Through the use of organisms from Madden's pond, students will have a chance to get a close look at the creatures and learn about their role in the ecosystem, how these animals depend on one another and their habitat, their place in the food web and the conditions needed for a healthy pond.

**Assembly Model Not Available - 1 classes/1 hour**

### **COMPOSTING: NATURE'S RECYCLERS AND DECOMPOSERS**

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP Presentation, live animal ambassadors, hands-on activities

Recycling of paper, bottles, and cans has become part of our culture. Now it is time to take the next step in recycling: school composting. Food leftovers are the single-largest component of the waste stream by weight, in the United States. Americans throw away more than 25% of the food we prepare, about 96 billion pounds of food waste each year. We spend about 1 billion dollars a year to dispose of food waste. This program will introduce students to the value of composting, the three different types of composting, and get up close and personal with some of the creatures that turn our food scraps into rich nourishing soil. This can be an informational program to teach students about composting or an introduction to creating a compost program for your school. The program can be presented to one class that would like to start a classroom compost program, or for the whole school to set up a school-wide program. For whole schools, our staff can work with your faculty to design a program tailored to your school's needs. This option is available for a special fee.

### **FOOD WEBS: WHO EATS WHOM?**

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** Animal artifacts, hands-on simulation, live animal ambassador

This interactive program introduces students to the daily flow of energy from the sun to producers and consumers. After learning how to classify animals based on their level in a food pyramid, students will participate in a hands-on simulation to help them understand how critical the balance of predators and prey is to the ecosystem by trying to create a sustainable food web system. During the presentation, students will meet a live animal ambassador and learn about its role in the ecosystem.

### **FOREST ECOLOGY**

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** hike in forest or short PowerPoint, pictures, game/activities, live animal

The Forest Ecology program is focused on a guided hike through the Madden property or a local nature trail. Using interpretive stops, games, and 'hands-on' activities, the students will be introduced to the temperate forest and the dependent relationships between the habitat and the organisms that live there. **Assembly Model Not Available - 1 classes/1 hour**

## HIBERNATION/WINTER ADAPTATIONS

*Location: School/Madden*

*Presentation Style: Individual Class Visits*

*Instructional Resources: PP presentation, animal artifacts, blubber experiment, live animal ambassadors*

There are four main methods animals use to survive the winter: go dormant, hibernate, migrate, or stay active. This program introduces students to each method, how it is done, and which animals use each method. During the interactive stations, students will examine animal pelts, preserved specimens and skulls of various animals that use each method, do an experiment to test the insulation quality of blubber and meet one of our animal ambassadors that would normally be dormant or hibernating in the wild.

## INSECTS: INCREDIBLE CREATURES

*Location: School*

*Presentation Style: Individual Class Visits*

*Instructional Resources: PP presentation, preserved insect specimens, live animal ambassador, insect guides*

Did you know that there are more than a million different kinds of insects on our planet? Through a presentation and hands-on activities, students will learn the specific characteristics that entomologists use to identify insects and compare them to their relative, the spider. Every student will become an “amateur entomologist” as they learn about simple and complete metamorphosis, the difference between pests and helpful insects, and what role these insects play in our ecosystems. This program includes live animal ambassadors and specimens.

## KEEP IN TOUCH

*Location: School*

*Presentation Style: Individual Class Visits*

*Instructional Resources: Animal artifacts, live animal ambassador*

In this sensory program, students will explore four of our five senses (we save taste for lunch time) through various interactive activities. These can include touching a mystery object in a box or bag and describing the object using descriptive words; smelling various smell jars to identify the item in the jar; using insect viewers and rainbow glasses to view the classroom; and listening to the sounds of common animals made by their classmates, then trying to identify the animal makes that sound. Then, using pictures, live animals, and pelts, they will learn how some common animals use their senses.

## NATIVE AMERICAN

*Location: School/Madden*

*Presentation Style: Individual Class Visits*

*Instructional Resources: PP presentation, animal artifacts, Native American artifacts, games and toys, live animal ambassador*

This program takes a close look at the indigenous tribes of the Hudson Valley and their fascinating culture. Students will learn about their pre-European lifestyles and philosophies, meet a live animal ambassador, and take part in hands-on activities such as examining fur pelts, playing native games and looking at their toys, exploring native artifacts, and playing a matching game between Native American and present-day items. In longer programs, Native American games and storytelling activities can be included if requested. **ON TRIPS TO MADDEN, STUDENTS WILL VISIT A Native American WIGWAM.** If time permits, students will participate in games played by Native American children. If a group wishes to do a full-day program, wikiups building (Lenape for temporary shelter), Native American games and storytelling activities will be included.

## NATURE ACTIVITIES TO RECONNECT WITH OUR NATURAL WORLD

*Location: School/Madden*

*Presentation Style: Individual Class Visits*

*Instructional Resources: game supplies*

Nature Deficit Disorder? Not here! We will take your students outside to learn and connect with our natural world through a series of fun and educational nature games! This program can complement almost any area of focus from predator/prey relationships, to camouflage, trees, or animals. Just let us know what you are studying!

## **NATURE SCAVENGER HUNT**

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** scavenger hunt sheets, collection buckets, animal artifacts

Students will become detectives by using four of their five senses to search for a number of items in the outdoors such as a leaf, something round, water, or a live animal. Following the search, a discussion will focus on what they found and the role of those objects in our ecosystem.

## **NATURE STORY TELLING**

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** animal artifacts, props, books

This program gives your students the opportunity to experience story telling in its purest form. Using animated voices, gestures, expressions and in some cases, songs, our story tellers will present a story with a nature or Native American theme that will engage and enthrall your students. This program can be tailored for specific items, shapes, smells, and numbers for primary students and may be adapted to include local history and folklore for older students. Specific story preferences can be requested.

## **NOCTURNAL WORLD OF NEW YORK**

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, listening to animal calls animal artifacts, live animal ambassador

Using pictures of nocturnal and diurnal animals, students will be asked to create a list of differences between the animals and how these adaptations help nocturnal animals. Through the use of animal sounds, observations, asking questions, games and live animals students will learn more about why some animals are active at night and how their specialized senses enable them to survive the world of the night.

## **NO-TRASH LUNCH**

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** examples of throw away and no-trash lunches

The average elementary school produces 324 pounds of lunch trash every day. That adds up to 58,329 pounds a year. Not only is that a lot of trash to deal with, but a lot of material that gets used once and then thrown away. What a waste of natural resources! This program addresses the consequences of throw-away lunches and helps students develop solutions by showing how to pack a no-trash lunch.

## **POLLINATOR PARTNERSHIPS**

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, animal artifacts, game supplies

In this program, we will introduce your students to the important interactions between plants and pollinators. Through our interactive presentation, students will investigate butterflies, hummingbirds, bees and bats to learn how they are specially adapted to pollinate certain flowers and how flowers are dependent on pollinators. After exploring the various pollinator adaptations, we can either head outside to explore your school garden or woods to look for signs of pollination or play an interactive pollination tag game on your school's field.

## **POND ECOLOGY (SPRING ONLY)**

**Location:** Madden or local pond

**Presentation Style:** Individual Class Visits

**Instructional Resources:** field trip: visit to pond to catch organisms, classroom program: live animals

Students will begin by examining the differences between a pond and a lake, before going outside to visit the Madden pond! Here, they will use scoop nets to catch samples of the animals and insects living there. Following the collection period, the group will use id charts to identify and observe their catch, learn how these animals are dependent on the habitat, what they need for survival, the pond food chain and cool adaptations. If you can't come to Madden, we can bring the pond to you!! See our *Classroom Pond Study* program.

## RECYCLING: WHAT HAPPENS TO MY RECYCLABLES?

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, packaging and plastics

Recycling is something that is familiar to almost everyone, but when an item goes into the bin, what happens to it and is it truly sustainable? We will begin with an explanation of closed loop recycling (i.e. glass and metal) vs. open loop recycling (plastics) and measure both on a sustainability scale. We will follow the route both closed and open loop items take and what they become. Products made with recycled content will be used to assess the level of sustainability and examine other product options. **Assembly Model Not Available - 1-2 classes/1 hour**

## SEED STUDY

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, seed sorting activity, seed game

Through seed sorting and critical thinking, students will learn the differences between a seed and a non-seed in this fun, interactive program! The lesson will also include the parts of a seed and all of the different ways seeds travel. After investigating many different types of seeds, students will play a game where they discover how hard it is for seeds to sprout, and why they are so valuable to the natural world.

## SOIL - THE BASIS OF LIFE

**Location:** School/Madden

**Program Style:** Individual class presentations with hands on station work

**Instructor Resources:** Hands on soil making experiment, live animal ambassadors, natural artifacts

From the food we eat, to the clothes we wear, to the air we breathe, humanity depends upon the soil beneath our feet. Although it is only a thin layer of our planet, it nurtures life, supports cities, forests and oceans and feeds all terrestrial life on Earth. Soil could arguably be called Earth's most critical resource. Part biology, part chemistry and part CSI, students will learn the "dirt" on soil as we examine its remarkable properties, its crucial role in the carbon cycle, how it is made and its ecological importance.

This program includes live specimens, a PowerPoint as well as a soil making experiment.

## SUPERMARKET BOTANY (SEE WHERE DOES YOUR FOOD COME FROM?)

## TURTLES, FROGS, TOADS, SNAKES, WHAT'S THE DIFFERENCE?

**Location:** School/Madden

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, animal artifacts, preserved animal specimens, photographs, live animal ambassador

Turtles, frogs, toads, snakes... what's the difference? This program examines the characteristics and adaptations of amphibians and reptiles, and the differences among species within in each class. Students will then rotate through hands-on stations including amphibian and reptile artifacts and preserved specimens. Students will also meet a living reptile, to dispel some of common misconceptions about them.

## WEATHER

**Location:** School

**Presentation Style:** Individual Class Visits

**Instructional Resources:** PP presentation, meteorological tools, data collection pages

Rain, sleet, snow, humidity, muggy, what does it all mean!? This program will introduce the concepts and tools necessary to understand the weather. Students will learn about weather forecasting through the use of simple meteorology tools, how the water cycle affects our daily weather, and what different cloud types tell us about the coming weather. They will leave the program with an understanding of the importance of weather prediction and how to collect weather data. After a presentation indoors, we will head outside to use meteorology tools to collect data and then analyze and discuss the data collected to make a short-term forecast.



## **WHERE DOES MY GARBAGE GO?**

**Location:** *School*

**Presentation Style:** *Individual Class Visits*

**Instructional Resources:** *PP presentation, hands on samples*

Lunch is over and your students clear off their tables, and toss their uneaten food, paper napkins and cups, and plastic utensils into the nearest trash can and like magic, it goes “away”. But where is away and what is the impact of our garbage? Beginning with the understanding that the average American generates approximately 6 pounds of trash a day, we follow the trail of food, plastic, glass, metal, old batteries and electronics as they make their way to landfills, waste-to-energy incinerators, electronic waste dumps, recycling plants, composting facilities and our oceans. Students will be asked to assess the pros and cons of each of the garbage destinations. Then through a wants vs. needs activity, we will compare and assess the impact of reduction vs. production of garbage.

## **WHERE DOES YOUR FOOD COME FROM? (FORMALLY SUPERMARKET BOTANY)**

**Location:** *School/Madden*

**Presentation Style:** *Individual Class Visits*

**Instructional Resources:** *PP presentation, food samples and games*

What seeds do we find in the produce section of the supermarket? Exploring food typically found in the produce section, we will determine what parts are edible and if a new plant can be grown from a seed from one of those plants. Through games and activities, students will learn all about how food arrives at the supermarket and will never look at the produce aisle the same way again!

## **WILDLIFE**

**Location:** *School/Madden*

**Presentation Style:** *Individual Class Visits*

**Instructional Resources:** *PP presentation, pelts, skulls, taxidermy and live animals*

This wildlife program is designed to give students an understanding of the classification system of animals, animal habitats, animal adaptations and consumers’ crucial role within an ecosystem. Among the topics that will be discussed are camouflage, natural services such as how fox and possums keep ticks away, and threatened and endangered species. Through demonstrations and activities using pelts, skulls, and many of our rare animal artifacts, students will gain an up close and personal understanding of wildlife and their role in the ecosystem and our lives.