

PNW BOCES CENTER FOR ENVIRONMENTAL EDUCATION PROGRAMS FOR GRADE 1

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

BIRDS & WILDLIFE SURVIVAL BEHAVIORS

1-LS1-2: Read texts and use media to determine patterns of parents and offspring that help offspring survive

GROWING UP IN A POND: SIMILARITIES AND DIFFERENCES

1-LS3-1 Make observations to construct an evidence-based account that some young plants and animals are similar to, but not exactly like their parents.

HOW NATURE ENGINEERS FOR WINTER SURVIVAL

1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

NATURE'S ENGINEERS: INSECTS

1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

CLASSIC CEE PROGRAMS

(click on title to link to description)

A, BEE, C'S OF THE HONEY BEE

AMAZING JOURNEY OF WATER

BIRDS & RAPTORS

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SEED STUDY

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

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

WHERE DOES YOUR FOOD COME FROM?

WILDLIFE

GRADE 1 PROGRAMS

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



NYS SCIENCE STANDARD PROGRAMS

BIRDS & WILDLIFE SURVIVAL BEHAVIORS

Location: School/Madden **Presentation Style:** Individual Class Visits **Instructional Resources:** PP presentation, animal artifacts, live animal ambassador

Through a unique look at birds and other wildlife, students will examine the patterns in survival behaviors. Students will examine animal artifacts and media, various survival behaviors including vocalizations and camouflage. Concluding the program students will engage in observation of a live animal ambassador, learn what survival behaviors help the animal, and how those techniques are used by adults to protect their young.

GROWING UP IN A POND: SIMILARITIES AND DIFFERENCES (SPRING ONLY)

Location: School **Presentation Style:** Individual Class Visits **Instructional Resources:** PP presentation, insect mounts, live animal ambassadors

Using artifacts, live animals (availability based on weather conditions), and media, students will learn about the lifecycles of some plants and animals that live in a pond. They will make observations to determine the similarities and differences between the adults and juveniles. As an in-class assessment, students will be given numerous pictures and artifacts of juvenile and parent pond plants and animals. They will be asked to identify the similarities and differences of the juveniles and their parents using evidence from what they learned.

HOW NATURE ENGINEERS FOR WINTER SURVIVAL

Location: School **Presentation Style:** Individual Class Visits **Instructional Resources:** PP presentation, plant and animal artifacts, live animal ambassador

Students will be introduced to how animals use their external body parts to survive in the winter. Through the exploration of animal artifacts, students will use structure and function as evidence to determine which animals go dormant, migrate, and stay active. The program will conclude with an introduction to Biomimicry and several bio-inspired designs devices that mimic external animal structures which help humans survive and meet their needs. A post program design activity will be provided. The activity asks students to pick a human problem and choose one external body part that helps plants and animals survive winter to inspire a design solution to their chosen problem.

NATURE'S ENGINEERS: INSECTS

Location: School **Presentation Style:** Individual Class Visits **Instructional Resources:** PP presentation, insect mounts, live animal ambassador

Through the exploration of unique artifacts, students will use structure and function as evidence to determine how insects rely on their unique body parts to have their needs met. The program concludes with an introduction to biomimicry and a design activity using a particular insect and its unique way of capturing water to inspire design solutions that they could use to collect water.

CLASSIC CEE PROGRAMS

A, BEE, C'S OF THE HONEY BEE

Location: School

Presentation Style: Assembly/Class Visits

Instructional Resources: PP Presentation, animal artifacts

Only female honey bee's sting, honey bees visit at least 2 million flowers to make just one pound of honey and honey bees are responsible for over a third of the food we eat. These are just a few amazing facts this program will present that will have students looking at bees in a whole new way. In addition to facts, this program will cover pollination, anatomy, the honey bee's role in the ecosystem and how important the honey bees are to humans. The current honey bee issues will be addressed and students will have a chance to see all of the equipment beekeepers use as they learn how we get honey from the hive to the jar.

AMAZING JOURNEY OF WATER

Location: School/Madden

Presentation Style: Assembly/Class Visits

Instructional Resources: PP Presentation, a highly interactive "water molecule" simulation involving dice rolling and a representation of water moving around the world

Students will be introduced to watersheds and how water moves through and is stored in its various forms through the water cycle as well as the natural services water provides in an ecosystem. Building on this information, students will participate in an interactive activity where they will be viewing the water cycle from the point of view of a water molecule. They will be given different scenarios within a watershed to create their very own "Amazing Journey" as a water molecule.

BIRDS & RAPTORS

Location: School/Madden

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.

CLASSROOM POND STUDY

Location: School

Presentation Style: Assembly/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.

COMPOSTING: NATURE'S RECYCLERS AND DECOMPOSERS

Location: School/Madden

Presentation Style: Assembly/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.

GRADE 1 PROGRAMS

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EARTH PORTABLE CLASSROOM (FEE)

Location: School

Presentation Style: Individual Classes but need an open space with a 23' ceiling

Instructional Resources: Earth Globe

Available in late May to early June, this unique program brings a 20' high x 22' diameter hand-painted representation of our earth into your school. Your class will enter the globe through a zipper along the International Dateline in the Pacific Ocean. Once inside, students can participate in activities covering: continents, oceans, mountains, rivers, cities, geographic terms and places in the news. They may also discuss environmental issues such as rainforests, coral reefs, ozone, pollution, and growing deserts. Program length is 40 minutes for 3rd grade. The globe can accommodate no more than 25 students. NO MORE THAN six programs can be done in one day.

Program Cost: \$175/member \$190/non-member per program or \$600/member \$650/non-member for a full day (no more than 6 programs) (this program is eligible for state aid through the environmental CO-SER)

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 Classes Outside if Possible

Instructional Resources: Introduction using Live Animal Ambassadors, Animal Artifacts with interpretive hike to follow

The focus of this program is a guided hike either at 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 relationships between the habitat and its inhabitants. This program can be adapted to any grade level and many focus areas including: food webs, human impact, sustainable management, problem solving, living and non-living things, and wildlife. A forest ecology program can also include a plot study, forest measurements, and tree identification.

HIBERNATION/WINTER ADAPTATIONS/BLUBBER GLOVE

Location: School/Madden

Presentation Style: Assembly/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/Madden

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.

MAP MAKING ADVENTURE

Location: School/Madden

Presentation Style: Individual Class Visits

Instructional Resources: Mapping boards and supplies, various map examples, optional PP presentation

Students will become junior cartographers in this marvelous mapping program! After learning about parts of a map and the many different types of maps, they will be broken up into small groups and challenged to map an area using the plane table mapping technique. This program includes options such as simple games, interactive presentations, and hands-on demonstrations. This program can be done either at Madden or on your school grounds.

MARINE ECOSYSTEMS

Location: School/Madden

Presentation Style: Class Visits

Instructional Resources: PP presentation, specimens, models

75% of the earth's surface is covered in water! This program introduces students to the different marine ecosystems and the life that inhabits our oceans. From the beach, down to the deep hydrothermal vent communities, using shells, plants and preserved specimens, models, colorful slides and real life stories, participants will learn about the animals and plants that live there, why the ocean is important to us, how humans are impacting the ocean and some of the ways humans are using what they are learning from ocean animals to solve human problems.

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 the Madden Outdoor Education Center, students will also visit a replica of a Native American wigwam.

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, puppets, and storytelling books, outdoor activities relating to these stories

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 **Presentation Style:** Assembly/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 them and explore their special adaptations. Through the use of animal sounds, artifacts, and a live ambassador animal, students will learn about why some animals are active at night and how their specialized senses enable them to survive in the dark.

NO-TRASH LUNCH

Location: School/Madden **Presentation Style:** Individual Class Visits **Instructional Resources:** PP presentation, examples of different lunch packaging and recycling material

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 the packaging gets used once and thrown away. What a waste of natural resources! This program helps young people understand the consequences of throw-away lunches and 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, students will be introduced 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 exciting pollination tag game on your school's field.

POND ECOLOGY (SPRING ONLY)

Location: Madden/Local Pond near School **Presentation Style:** Individual Class Visits **Instructional Resources:** models and live organisms from the pond

Students will determine the differences between a pond and a lake, before going outside to visit the Madden pond! There, they will use scoop nets to catch samples of the animals and insects living there. Following the collection period, the group will observe and identify their catch, using identification keys, learn about metamorphosis, interdependence, food chains, some of the organism's fascinating adaptation as well as the conditions necessary for a healthy pond. If you can't come to Madden, we can bring the pond to you!! See our *Classroom Pond Study* program.

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.

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

Location: School **Presentation Style:** Individual Class Visits **Instructional Resources:** Visual 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.

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 **Presentation Style:** Assembly/Class Visits **Instructional Resources:** PP presentation, pelts, skulls, shells, claws, artifacts, models 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.