Program Summary

The ecosystems of Long Island offer students and teachers a myriad of learning opportunities. Since the study of students' local environment and environmental literacy have been shown to be powerful learning experiences, the Western Suffolk BOCES Outdoor Environmental Education Program (OEEP) integrates the geography, plants, animal species and aquatic life that surround us into a multi-disciplinary approach to promote efficient and effective learning. By employing direct observation and hands-on learning experiences outside the classroom, the OEEP enriches and strengthens the existing school curriculum, and provides children the opportunity to explore and connect with the natural world. The program also fosters the rational use and preservation of the natural environment by laying the foundation for responsible action.

Examples of Goals we can help your district meet:

- Conduct authentic science activities that directly and effectively support the NYS Science Learning Standards for Science education and each district’s learning objectives
- Provide students with first-hand, interactive experiences with nature
- Utilize natural resources in inter-disciplinary projects where students must observe, hypothesize, experiment, analyze, and interpret data, and draw conclusions
- Integrate environmental concepts into the instruction of language arts, math, social studies, science and the arts
- Help students meet learning standards set forth by the New York State Department of Education
- Provide teachers with the in-service training, curriculum development, and special program services they need to support their instruction.

Day Use

Since teacher participation is the most vital aspect of the success of this program, teachers participate in a two day environmental education training program. This training provides teachers with knowledge and professional resources to effectively conduct a class at two of our outdoor learning labs. Through the training, teachers will be engaged in activities relating to:

- New York State Science Learning Standards
- Marine, Freshwater, and Terrestrial Ecology
- Earth’s Systems, Weather and Climate, Structure and Function of Organisms, and Inheritance and Variation in Traits

Throughout the training, teachers build curriculum guides that apply to each specific site where they are enrolled. Teachers then implement lessons made up of the equipment, resources, and staff at each site.

Caleb Smith Outdoor Learning Lab

Located in the 543 acre Caleb Smith State Park Preserve, the laboratory contains numerous displays and serves as a terrific site to facilitate exploration of the deciduous woodlands and ponds.

Sunken Meadow Outdoor Learning Lab

A state of the art science facility equipped with a plethora of displays and live organisms serves as a base for teacher trainings and STEM-based student activities. It is located in a secluded section of the 1,226 acre Sunken Meadow State Park. This facility provides a unique hands-on learning environment to explore a salt marsh, beach, and dune habitat.

Connetquot Outdoor Learning Lab

Located at the site of the historic Snedecor Inn, this site provides an opportunity to explore a river ecosystem equipped with a working trout hatchery and greenhouse. In addition, the learning lab is located within Long Island’s Pine Barrens.

Residential Programs

Teachers and students live and learn together at sites on or off Long Island. This intensive experience allows classes to focus on the natural environment and build an unrivaled bond by participating in many group and team building activities.

Residential programs are preceded by in-service training and planning guidance. In addition, staff is available throughout the experience for teacher assistance.

On Long Island

Dorothy P. Flint
Cornell Cooperative Extension/4H Div., Riverhead

- Features: Woodlands, a working farm, and a boardwalk/trail to the seashore
- Facilities: Science center, open-air arts and crafts building, and 40 cabins.
  (Fall/Spring)

Camp Quintipet
United Methodist Church, Shelter Island
- Activities: Pioneer Homestead, Indian Village, Blacksmithing, Forest Ecology
- Features: 372 acre Campus in the foothills of the Catskills.
- Facilities: Bunkhouses, dining hall
  (Fall/Winter/Spring)

OFF Long Island

Frost Valley Environmental Education Center
Frost Valley YMCA, Olliveron
- Activities: Project Adventure, geology, and orienteering
- Features: 4,500 acre Catskill Forest Preserve.

- Facilities: Winterized facilities, two program centers, 45 cabins, 9 lodges, and dinning hall
  (Fall/Winter/Spring)

Greenskill Outdoor/Environmental Education Center
YMCA-YWCA Camping Services of Greater New York, Hugneton
- Activities: Wildlife studies, Project Adventure, forest ecology.
- Features: Deciduous and coniferous forest, fields and ponds
- Facilities: Activity lodges, modern dormitories, dining hall
  (Fall/Winter/Spring)

Sharpe Reservation
The Fresh Air Fund, Fishkill
- Activities: Hiking, camping, fresh-water studies.
- Features: 2,550-acre site in southern Dutchess County
- Facilities: Self-contained residence, dining hall
  (Fall/Spring)
Special Service Programs

At sites throughout Long Island, OEEP staff guide students through customized, first-hand investigations of the natural world, providing them with a variety of unique, authentic science experiences. Outdoor education staff can also create customized programs for individual school districts.

Challenge Course
To instill group cooperation skills and team-building abilities as part of your school’s Character Education Efforts, make the Challenge Course experience a part of your curriculum! The Challenge Course at the Sunken Meadow Outdoor Learning Lab allows students to work in small groups under the guidance of an instructor/facilitator. During the experience, students progress through a series of increasingly difficult group tasks.

Earth Balloon
This 19-ft. inflatable globe uses high quality satellite images to provide exciting and interactive science and geography programs ranging from Biomes to Human Development. Grade-appropriate programs take place in your school to support the K-12 curriculum, especially promoting geographic literacy. The Earth Balloon can be used in multiple classes each day.

StarLab
This portable planetarium provides an introduction to astronomy and the wonders of the night sky. Grade-appropriate programs take place in your school and can be tailored to meet each class’s learning objectives. While the StarLab is used by one class at a time, the lab can be used in multiple classes each day.

In-School Science Programs

Conservation Biology
Whether through a native brook trout reintroduction project or an invasive pine beetle study and pine tree reintroduction project, several options for exciting, engaging, real-world science projects are available.

Grades 1 through 3

Ecology Awareness
The program introduces basic ecology principles and concepts through the investigation of woodland, freshwater, and marine environments.

Marine Studies I
Students explore, investigate, and compare marine habitats, flora, fauna, and Long Island nautical heritage.

Nature Discoveries
Activities emphasize an inter-disciplinary approach to geology, botany, reptiles and amphibians, insects, and mammals. Students learn about the availability of natural materials, how they are used, and how to use them in crafts and hobbies.

Grades 4 through 6

Bay Investigations
Conducted in Shinnecock Bay aboard the research vessel Peconic, or in the Great South Bay from Captree Boat Basin while on board, students use a variety of nets and sampling equipment to analyze the physical and biological environment of the bay.

Exploring Long Island’s Secret Wilderness
Students are acquainted with the Pine Barrens through field excursions, classroom and field exercise, a canoe trip, and guest lectures. Students develop an understanding of groundwater, watershed, fire climax forest, and plant and animal competition.

Field Natural History
Students learn the geology, biology, and history of freshwater, marine, and terrestrial environments by studying the Nissequogue and Carmans watersheds.

Fire Island Ecology
This program is focused on interpreting Long Island’s barrier beach environment.

Introduction to Intermediate Level Science: (Grades 5-6)
In this exciting program, students investigate either a freshwater ecosystem or compare two different biological communities. Students will employ process skills emphasized by the NYS Science Learning Standards, including transect studies, use of dichotomous keys, and microscopy.

Marine Studies II
Students will explore, investigate, and compare marine environments, including estuary/salt marsh, rocky inter-tidal, and seashore. Studies are conducted at Sunken Meadow State Park and Flax Pond in Stony Brook.

Studies in Long Island History
This program incorporates DBQ and fieldwork to support the New York State Social Studies Standard. This includes field trips, guest speakers, and a written research project focusing on Long Island’s history.

Grades 7 through 12

Dissections
In school or at one of our Outdoor Learning Labs, students will dissect an organ or an entire organism while being led by a trained biologist. This is a great addition to any biology or psychology class. Specimens available to dissect include, but not limited to: frogs, pigs, sheep brains, sheep eyes, bovine hearts, bovine ovaries, squid, and clams.

Exploring Long Island’s Fisheries Resources
Students investigate fish anatomy, physiology and ecology, explore fishery habitats, and learn about the socio-economic factors affecting fisheries.

Farming the Sea: A Mariculture Project
Students learn about a new type of agriculture — mariculture — by growing hard-shelled clams under controlled conditions. The clams will be seeded in Long Island Sound to help restore coastal waters. Field work is included.

Insects
This program focuses on Long Island insects and their adaptations, anatomy, morphology, and diversity. Each topic contains an associated “hands-on” activity.

Marine Mammals:
Students will work with a researcher to conduct a postmortem on a porpoise, dolphin, or seal in a classroom. Program includes a slide/lecture necropsy.

Ornithology:
This is an introduction to the avian world through bird watching. Through field work and readings, students observe and learn firsthand how birds function.

Whales: Study and Research:
Students learn about marine mammal behavior, adaptations, and their role in the ocean’s ecosystem.

Field Research Expedition Program
Critical thinking skills are developed as students investigate environmental issues and conduct independent research projects. This program involves international and domestic travel and research and publication of projects.

Create a Customized Program
Since school districts have their own unique curriculum needs, the Outdoor Environmental Education Program staff is available to work with district staff to create innovative and customized programs and projects. These programs allow students to practice authentic science, meet the district’s science education scope and sequence, and gain the content and skills necessary for mastery of the New York State Core Curricula and NYS P-12 Science Learning Standards.
Science Enrichment Excursions

Through Cooperative agreements with other agencies, the OEPP can broaden program offerings and help participating districts choose and education experience that best supports their curriculum or enrichment objectives.

Grades K-12
Excursions from Manhattan to Montauk and beyond. BOCES Staff will discuss and offer assistance with all science-based excursions. The OEPP works with museums, Cornell Cooperative Extension, the Riverhead Foundation for Marine Research and Preservation, aquariums, etc.

SUNY Stony Brook
- Biotechnology Teaching Laboratory—Grades 7-12

Local History
Led by historians or scholars at historic sites, students become truly become immersed in historical archeology and native American studies.
- Colonial life and Technology (Blydenburg Park)
- Cultural History Workshop (School Site)
- Technology Workshop (School Site)

Stem Programs

Remote Operated Vehicles (ROV)
This program takes a unique spin on field science. It emphasizes engineering and business and tasks students with building a fully functional remotely operated vehicle (ROV) that will explore and collect data in a marine environment. The goals set for the student are to have a functional ROV, keep it within budget, and in a Shark Tank Style presentation, market it to their peers.

Drone Building
A unique program where students blend the fields of technology and science research to construct a drone that is capable of being used to conduct serial science research to collect data. Students will learn how drones are used in the field, the benefits of their use and expand their knowledge of technology by constructing the drone.

MakerSpace Activities
A variety of engineering and problem solving activities where students are tasked with designing and assembling various objects or machines. Some of the resources we have available are a 3D printer, LittleBits™ and MakerSpace Kits.

Building Tasks
In this program students will work in groups to learn about the basics of structural engineering to compete in a design challenge. In several groups students will learn about the research and development stage of engineering—they will design a structure, and ultimately construct a structure that will be used to compete against other groups.

For further Information Contact:
Outdoor Environmental Education Program
810 Meadow Road
Smithtown, NyY11787
631-360-3652

Western Suffolk BOCES Non-Discrimination Notice
The Board of Cooperative Educational Services of Western Suffolk County, New York does not discriminate on the basis of age, religion, creed, ethnic origin, national origin, marital status, race, color, gender, sexual orientation, veteran status, weight, disability or handicap in the educational programs or activities it operates and provides equal access to the Boy Scouts and other designated youth groups. This policy of non-discrimination includes the recruitment, hiring and advancement of employees, salaries, pay and other benefits; counseling services to students; student access to course offerings; lawful political activities; educational programs and other activities; and the business activities of the Board. Inquiries concerning the application of regulations prohibiting discrimination may be referred to the BOCES Compliance Officer, Dr. Hugh M. Gigante, who may be contacted at 507 Deer Park Road; PO Box 8007, Huntington Station, NY 11746-9007 or 631-549-4000, ext. 204 or email igigante@wsboces.org. Or, inquiries made by contacting the Office for Civil Rights at NY Office for Civil Rights, U.S. Department of Education, 32 Old Slip, 26th Floor, New York, NY 10005-2500 or call 646-428-3900, or fax 646-428-38 or TDD 800-877-8339 or email OCR.NewYork@ed.gov or file form at http://www2.ed.gov/about/offices/list/ocr/complaintintro.html
The StarLab
Presented by the
Outdoor Environmental Education
Program

Looking for an exciting and engaging way to bring the night sky to your classroom? Our state-of-the-art digital StarLab helps students develop a strong understanding of astronomy, biomes, celestial motion, celestial navigation, and more!

Program Offerings

Science
Our Solar System and the Universe - *The Big Bang and the Universe; Our Solar System:
Small Bodies in Space*
Apparent Motion - *Daily Apparent Star Motion, Seasonal Constellations, Sun's Path, Moon Rise and Set*
Our Moon - *Phases of the Moon, Eclipses, and Tides*
Space Exploration - *Missions to the Moon; Probe Missions*
Planet Biomes - *Biomes, Animal Habitats and Adaptations, Live Animal Examples*
Earth Mapping - *Coordinate Grid Systems, Time Zones, Navigation*
Physics - *Doppler Shift, Apparent Brightness*

Social Studies
Mythical Constellations - Tie constellations to ancient Greek and Roman mythology.
Constellations over Time - How constellations have changed over time and vary from culture to culture.

Math
Earth Math - *Scale, Time and Time Zones, Degree Measurements, Meridian Lines, Angles*

Design Your Own Program! - Our educators are happy to help design a program that meets the specific needs and requirements of your students and curriculum. The StarLab is a very versatile educational tool! Literature, cultural studies, music, art, math and more can be infused into programming, so let your creative side shine!

<table>
<thead>
<tr>
<th>Program Scheduling</th>
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<tbody>
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Each program can accommodate one class per session and up to six sessions per day

For more information, please contact:
Daniel Oggeri, Program Coordinator
Outdoor Environmental Education Program
810 Meadow Road, Smithtown, NY 11787
Phone: (631) 360-3652 • Fax: (631) 360-1486 • Email: doggeri@wsboces.org
The Earth Balloon
Presented by the
Outdoor Environmental Education Program

Looking for an exciting and engaging way to bring the whole world to your classroom?
The Earth Balloon helps students develop a strong understanding
of geography, scale, geology, biomes, and more!

Program Offerings

Science
Welcome to Your Planet - oceans, continents, landforms; atmosphere and the solar system
Shakes, Quakes, and Plate Tectonics - formation of the Earth, earthquakes, volcanoes, Ring of Fire, geology
Round and Round We Go - earth rotations, seasons, weather and climate; animal migrations
Planet Water - oceans, currents, trenches; water cycle, and fresh water availability
Blue Planet Biomes - biomes, animal habitats and adaptations, live animal examples

Social Studies
People, Places and Change - historical explorations of regions; cities, populations, human impact, resources
Around-the-World - geography investigation, world-wide scavenger hunt, mapping and symbols

Math
Earth Math - scale, time and time zones, degree measurements, meridian lines

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