Mass Audubon’s 
Moose Hill 

School & Group Programs 
Grades PreK - 12 

Including... 
Native Americans 
Colonial Life 
Maple Sugaring 
Adaptations 
Weather 
Landforms 
Rocks 
Ponding 
Trees 
Climate Science 
Tracking 

Moose Hill Wildlife Sanctuary 
293 Moose Hill Pkwy ¶ Sharon, MA 
www.massaudubon.org/moosehill
As a unique sanctuary, Moose Hill marks the ecotone boundary between the flat, southeast region and the hill region of Massachusetts. Historically, this represented the boundary between the Wampanoag and Massachusetts tribes. Hands on observation of our stone walls, fields, and barns show evidence of the Colonial period. These exciting features allow for a broad spectrum of educational and entertaining programs based on ecology, geology and history.

Schools consistently return to Moose Hill because of our quality programs, professional staff and beautiful site. We currently serve 80 schools and 6,000 students annually, and still have time for you!

For the teachers: We provide teachers with detailed program information that includes vocabulary, objectives and connections to the frameworks. Teachers can easily access this information on our website. Upon scheduling your program, we will send you a “Field Trip Plan” to help you iron out the details of transportation and permission slips.

For the students: We engage youth in learning while understanding their individual needs and desires. Programs include a mixture of exploring, observing, listening, playing, and reflecting. Through our program goals, children connect with nature through hands-on, outdoor experiences.

Affordable: We strive to keep program costs low. The fee for most 2-hour programs is $9 and the usual full-day is only $13 per student! If transportation costs are preventing you from coming to us, we offer “field trips” at your site!

Homes are Habitats
Animals have the same needs as people—food, water and shelter. While exploring forest and field habitats with students, our teacher-naturalists focus attention on specific native wildlife, the signs they leave behind and how their needs are met. Students enjoy playing an active game that reviews what they have learned.

Maple Sugaring Season
Explore this magical time when the sap rises! Learn how tree function changes through the seasons; observe tools used by Native Americans; try using a hand drill and hammer; and savor the different tastes of maple sap and syrup.

* Offered only in February and March.

Surcharge: $1/student

Native American Pathways
Enjoy a guided walk as you learn to view the forest as local Native Americans did—seeing the earth as your source of food, medicine and shelter. Listen and learn from a legend and visit our wetu!

Senses Galore
Heighten your senses and use them to explore the forest as a wild animal does. Use “different eyes” like binoculars to see like a hawk and other optics to see like an insect, test your nose along a scent trail and play a game to test your hearing skills!

Signs of the Season
Discover the delights of a walk in the woods as you observe how the plants and animals respond to seasonal weather changes. Play a game using natural elements to help you learn about the outdoor world!

Tree-mendous
Through role-play, students come to understand how a tree functions and changes with the seasons. Learn about conifers and broadleaf trees and identify some trees by leaf shape. Observe the life cycle from seedling to maturity to decay while we discover which animals rely on trees!
Grades 3 – 5 Field Trips

**Life Science**

**Ecosystem of the Vernal Pool**
Explore pool edges for signs of amphibians, study water samples in search of insect larva and determine what makes up the food chain of this ecosystem. This program is designed to be paired with our Pond in the Classroom program.

**Habitat Hunt**
Discover three habitats unique to different native animals and learn how to classify them based on food, shelter, and water you have found. Play “Oh Deer” to discover how population size is dependent upon the availability of resources in their habitat.

**Insect Safari**
Investigate the forest and field edges in search of insects, determine the insect group that they belong to and place them in the food chain. Learn about insect classification as you sing our “Insect Song”. Enjoy a relay game while you learn about different types of metamorphosis!

**Pond Life**
Use tools to sample the wetland edge as you learn to classify aquatic insects; observe stages of metamorphosis and discover the adaptations used to survive in a watery world. Build an aquatic food chain using the creatures we discover. This program is enhanced when combined with our Pond in the Classroom program.

**Maple Sugaring Through Time**
Learn first-hand that plants make sugar! Discover the connection between the properties of water and the adaptations of trees to the season, try the tools used by Native Americans and Colonial farmers and observe the process of concentrating sap to produce syrup. Offered in February and March. Surcharge: $1/student

**Rock On**
Through games, hikes and comparisons students will learn about the rock cycle and how soils are formed. Use a simple key to determine rock type; observe signs of erosion and weathering atop Moose Hill! This program can be combined with our Landform program for a full day.

**Tracks and Traces**
Examine the physical characteristics of body, leg and foot type determine an animal’s track pattern and apply this knowledge to solve track mysteries. Explore the trails for the signs animals leave behind and discover how burrows and scat are used to identify an animal! Offered in all seasons.

**Trees are Terrific**
Explore the forest as you learn to classify trees, observe the life cycle from seed to log, and dig into the earth to discover that decomposing leaves help to create soil. Enjoy activities that will help you to understand tree anatomy and how it functions to make sugar and adapts to seasonal changes.

**Earth Science**

**Erosion and Landforms of New England**
Bring earth’s history to life for your students as they stand on bedrock that was formed in the Paleozoic and see first-hand how glaciers have marked the New England landscape through weathering and erosion. Climb to the summit to observe exposed bedrock, striations, and evidence of plucking. Visit our glacial erratic and use critical thinking skills to determine the path the glacier took. See evidence of erosion on our property and see ways in which erosion is naturally controlled. This program can be combined with our Rock On program for a full day.

**Weather & the Forest Community**
Act out being air molecules to gain an understanding of the atmospheric conditions that influence weather. Take simple weather measurements and make a forecast. Enjoy a walk as you discover how the forest community is adapting to climate change over time. Surcharge: $1/student

**Social Science**

**Colonial Life**
The challenges of the early days come to life as students card and spin wool; write with quills; dress in Colonial-style clothing and make decisions about where to build a homestead. This program can be held partially indoors or held at your school.

**Native American Life**
Experience various aspects of local tribal life—hear a legend in the wetu (home), see foods that were gathered and grown, use a fire bow and drill, play games, and make a symbolic necklace craft. This program can be held partially indoors. We can also bring this program to your school.

Surcharge: $1/student
Adaptations and the Food Web
Compare mammal skulls and discover the adaptations that allow animals to survive as a predator or prey. Use your knowledge to identify an unknown skull. Enjoy a short hike while looking for signs left behind by primary and secondary consumers, determine the food chains involved and link these to create the diverse food web of this ecosystem.

Climate Science & the Forest Community
This program introduces students to how Climate Science data is collected and used. Enjoy a guided walk as you discover how the forest community has adapted to climate and learn what scientists think will happen to this forest in response to climate change.

Decomposition Mission
In this activity, students investigate the fascinating and complex process of decomposition and lay the foundation for deeper understanding of concepts related to matter and energy transfer in ecosystems. Through exploration and discussion, students go beyond simple definitions. Instead, students discover key characteristics of decomposition as they create a sequence for decomposing wood and leaves.

Forest Ecosystem and Adaptation
Ecosystems are constantly changing. Discover the keystone species that cause most change to our forests; learn to identify invasive species, observe a field undergoing succession and look for signs of competition among plants. A role-play activity will bring understanding of the environmental issues of fragmentation and habitat loss.

Fungi and Lichen
This program allows students to explore to common forest organisms that are far more abundant than most people realize. By using hand lenses and their own eyes students will learn the roles these two organisms play in forest ecology.

Landforms of New England
Bring earth science to life for your students as they see first hand how glaciers have marked the New England landscape of Moose Hill. Stand atop an esker while you imagine a river passing under the ice. Climb to the summit to observe exposed bedrock, striations and evidence of plucking. Discover how geologists use erratics to determine the glacier’s path.

Maple Sugaring Science
Learn the science and economics of maple sugar industry. Measure the density of sap and discover what defines syrup; learn how the adaptation of trees to winter is critical to sugaring; and observe the changes in technology since Native American times!

Ropes of Ecology (3 hours)
Our Ropes of Ecology program combines the group development aspects of a traditional teambuilding program with ecological literacy. The program is hands on and can cover specific topics such as geology, hydrological cycle, and ecological terminology. Or you can select an overview type of program which can focus on several topics.

Teambuilding (3-6 hours)
Our team development program provides a custom designed experience for your students. This program is a great way to start off your school year or build your school group or team.

Tracks and Traces
Learn how the physical characteristics of body, leg and foot type determine an animal’s track pattern and apply this knowledge to solve track mysteries. Explore the trails for the signs animals leave behind and discover how burrows and scat are used to identify an animal!

Weather and the Forest Community
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Watersheds and Wetlands
See a demonstration of watershed function; use a contour map to develop a hypothesis about water flow at Moose Hill and evaluate the actual topography to determine if you are correct. Make wetland and upland soil comparisons; learn about wetland indicator plants; and play a game that demonstrates the importance of wetland protection.

Weather and the Forest Community
Act out being air molecules to gain an understanding of the atmospheric conditions that influence weather. Take simple weather measurements and make a forecast. Enjoy a guided walk as you discover how the forest community has adapted to climate and learn what scientists think will happen to this forest in response to climate change.

Surcharge: $1/student
Grades 9-12 Programs

Bird Language
The communication network of birds is a vast, complex, and delicate instrument. Pressure to survive, evade predators, and find food has shaped our winged companions' perceptive and communicative capacities. The calls, postures, and other behaviors of birds convey much information to those who understand their patterns. The attentive, trained observer can deduce through bird language the location of predators and other actions on the landscape.

Climate Science
Using climate data for Massachusetts and New England this program brings students through an exploration of what climate science is and how the data is used. We will also look at what is changing here by having students make observations that will be added to our citizen science work.

Ropes of Ecology (3 hours)
Our Ropes of Ecology program combines the group development aspects of a traditional teambuilding program with ecological literacy. The program is hands on and can cover specific topics such as geology, hydrological cycle, and ecological terminology. Or you can select an overview type of program which can focus on several topics.

Seeing Nature Through the Work of Muir and Thoreau.
John Muir and Henry David Thoreau explored nature through direct experience and intentional reflection. This program guides students through parts of Moose Hill and provides them with direct prompts based on the writings of Muir and Thoreau.

Teambuilding (3-6 hours)
Our team development program provides a custom designed experience for your students. This program is a great way to start off your school year or build your school group or team. Our program can be done either as a half or a full day option. Specific topics can also be focused on such as leadership, communication, planning, and developing a sustainable community.

Tracking and the Science of Observation.
Tracking has been called the origins of science. This program introduces students to the methodical practice of gathering information about tracks left behind by animals and using that information to determine what made those tracks. This program also focuses on learning to determine when and how the animal was moving.

Program Options and Fees

Field Trips at Moose Hill

<table>
<thead>
<tr>
<th>Option</th>
<th>Fee</th>
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</thead>
<tbody>
<tr>
<td>Basic (1.5 hours)</td>
<td>$8 per student</td>
</tr>
<tr>
<td>General (2 hours)</td>
<td>$9 per student</td>
</tr>
<tr>
<td>Each additional ½ hour</td>
<td>$1 per student</td>
</tr>
<tr>
<td>Full Day (4.5 hours)</td>
<td>$13 per student</td>
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</tbody>
</table>

- Some programs have additional charges.
- Full Day usually includes 2 programs with a half hour lunch break (ex. 9 am - 1:30 pm)
- Groups of 130 can be accommodated with the Full Day.
- The Nature Center is handicap accessible as are some trails with the use of our all-terrain wheelchair.
- Chaperones/Teachers: 1 adult is free per 6 students. One-on-one aides are free of charge.
- Minimum fee is based on 10 participants per Moose Hill teacher-naturalist scheduled for your program.

Classroom Presentations

<table>
<thead>
<tr>
<th>Program Duration</th>
<th>Fee</th>
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<tbody>
<tr>
<td>30-minute</td>
<td>$65 per class</td>
</tr>
<tr>
<td>45-minute</td>
<td>$80 per class</td>
</tr>
<tr>
<td>55-minute</td>
<td>$100 per class</td>
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</tbody>
</table>

- Some field trip programs can be brought to your site.
- Visit www.massaudubon.org/moosehill for a listing of our classroom presentations.
- Group size is limited to one class per presentation to allow interaction with the naturalist. Additional naturalists are available.
- A surcharge may be applied to programs that require specimen collection, intensive supplies, a pre-visit or to those beyond a 30 minute drive from Moose Hill.

Call 781-784-5691 x 8102 or email moosehilledu@massaudubon.org
Classroom Programs

Field Science Programs
Our teacher-naturalist takes you and your students outside to investigate ecosystems in your schoolyard or at a local habitat or conservation land. Invite us to work with each of your grade levels! Program choices include Senses, Trees, Habitats, Food webs, Water and Landforms, and Adaptations. Fees are similar to those below.

Classroom Discovery Programs
Choose from the many topics listed here or ask us to create a program specific to your needs. Program activities may include interactive discussions, specimen study, and educational games.

Grades K-1
(30 minute programs are described in this section.)

Bats – Learn about the only winged mammal – how big are these creatures? What do they eat? How do they eat? Where do they go in the winter?

Butterflies – Learn that butterflies are insects and understand their life cycle, hear a Native American legend and discover how the patterns on their wings help butterflies evade predators.

Eggs and Nests – Learn why birds don’t use nests year round. Look at nests and determine how they differ. Play a game to discover how much work it is for parent birds to feed a nest full of babies.

Frogs and Toads - Learn how these creatures differ as well as what they have in common. Explore the survival techniques of amphibians and visit with one.

Honeybees – Learn the three types of bees in a honeybee hive. Props are used to illustrate the different roles a worker bee takes on during her life.

Insects – Explore the life cycle of insects and learn how to identify some common species. Study the body parts of an insect. Games make this a fun class.

Native American Pathways – Select one of the following programs that teach about the lifestyle of local tribes—Foods Gathered and Grown or the Home and Legends.

Outdoor Exploration – Enjoy a guided walk through the woods and/or fields on school property. Use your observation skills! Specific topics such as senses, seasons or animals may be selected. This may be combined with any of the classroom presentations.

Opossums – Discover cool facts about this marsupial and how playing dead is not really a game.

Owls – Learn how owls have adapted to hunting at night by studying a skull, talons, and feathers. Study our models of New England owls and hear their calls!

Salamanders - Discover the differences between lizards and salamanders. Visit with a salamander and learn about local species.

Turtles – What makes a turtle a reptile? Listen to a story about box turtles. Learn about native turtles. Examine turtle shells and discover why a snapping turtle deserves respect.

Winter Survival – A Native American legend leads us into a discussion on how animals hibernate, migrate, or stay active during the cold months. Feel the difference between an animal’s summer and winter coat. Test and discover the insulating ability of fur, fat, and feathers.

Grades 2-6
(Programs are 45- or 55-minutes in length. Group size is limited to one class per presentation to allow for interaction with the naturalist.)

Amphibians – Learn how frogs, toads, and salamanders differ as well as what they have in common. Explore the survival techniques of amphibians and visit with one. This program combines well with our Vernal Pool field trip.

Bird Beak Adaptations – Short beaks, long beaks…does it make a difference to the bird? Try your hand at manipulating tools that mimic bird beaks and learn what different birds eat. Discover why some birds must migrate in the fall. Surcharge: $10/classroom.

Butterflies and Host Plants – The different food needs of caterpillars and butterflies are compared. Students work through an activity where they identify an image of a butterfly with a field guide and then determine its needs during different stages of its life cycle.

Colonial Life – The challenges of the early days of New England come to life for students as they card and spin wool; write with quills; dress in Colonial-style clothing and/or determine where to build a homestead. Select two of the listed options per hour. Additional naturalists are available to add programs and create stations the students rotate through. Surcharge: $10/classroom.

Compass Skills – Through games and instruction, students learn the parts of a compass and how to take bearings. We provide the compasses; you provide the yard or gym!

Endangered Species – Discussion and interactive games introduce students to some of Massachusetts’ threatened and endangered animals. Learn how threats such as habitat loss, fragmentations, and incompatible land use affect how animals and plants survive and flourish.
Grades 2-6-continued

**Food Chains** – Students work together to create food chains and determine what plants they rely on. Discover how niches within a habitat are utilized and how the chains interact.

**Habitats** – Learn what animals need from their environment in order to make it a home. Through interactive games, students learn about our native animals, the habitats they depend on, and how our actions can affect a natural community.

**Insects Galore** – Explore the life cycle of insects and learn how to identify some common species. Study the body parts of an insect. Older students learn the different types of metamorphosis and how to determine insect orders by wing type. This program combines well with either an Outdoor Exploration at your site or our Insect Safari field trip.

**Mammal Adaptations** – Study mammal skulls to explore the qualities that predator and prey animals need for survival. Learn to categorize animals as carnivore, herbivore, omnivore, and insectivore by their teeth. Groups determine the identity of their “unknown” animal by comparing skull diagrams.

**Minerals and Rocks** – Learn the difference between minerals and rocks. Discover the common items around your house made from minerals. Work at stations to answer questions about the characteristics of minerals. Surcharge: $10/classroom.

**Native American Life** – Experience various aspects of local tribal life—Foods Gathered and Grown; the Home and Legends; Games of Skills and Chance; and/or Clothing & Ornaments. Select two of the listed options per hour. Additional naturalists are available to add programs and create stations the students rotate through. Surcharge: $10/classroom.

**Nocturnal Animals** – Learn how owls and bats have adapted to hunting at night. Study the skull, talons, and feathers of an owl. Learn about New England owls and hear their calls so you can know who is in your backyard! Learn about our native bats—how they eat, where they are found and why they are in danger.

**Outdoor Exploration with Focus of Your Choice** – Enjoy a guided walk through the woods and/or fields at your school or community. The walk emphasizes children’s observation skills and discussions of seasonal elements. Specific focus topics such as trees, habitats, insects or animals may be selected. This may be combined with any classroom presentation.

**Pond in the Classroom** – We bring the pond to you. Select this program to learn about insect food chains, adaptations, classification, and metamorphosis. This program combines well with our Vernal Pool field trip. Surcharge: $10/classroom.

**Tracking Skills** – After discussing how different four-legged mammals move, children try to waddle, gallop, and step the way animals do. Interpret tracking stories and look at tracks set into sand.

**Trees are Terrific** – Three interactive games demonstrate photosynthesis, food webs, and competition among plants. This program combines well our Treemendous field trip.

**Vernal Pools** – Live animals, slides, and models give your students first-hand knowledge of this habitat. Learn why scientists classify vernal pools as forest habitats rather than wetlands! Motivate your students to further protect these unique pools.

**Teambuilding**

**(Grades 6-12 and adults)**
The Moose Hill staff can bring a teambuilding program to your school. Our program is mobile and can be done in a variety of locations. Our team development program provides a custom designed experience for your students. This program is a great way to start off your school year or build your school group or team. Our program can be done either as a half or a full day option. Specific topics can also be focused on such as leadership, communication, planning, and developing a sustainable community. We also do professional development programs for teachers and staff. Our programs are custom designed with your goals in mind.

Program costs are based on a per-person rate and length of your program. Contact us and let us help your group take their next step.

**Ropes of Ecology**

**(Grades 6-12 and adults)**
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