



School Program Name:	Tree are Terrific
Name of Sanctuary:	Moose Hill Wildlife Sanctuary
Grade Level:	Grades 3 – 5
Location Options:	At the sanctuary or your site
Time:	2 hours or combine with a second program for a full-day field trip
For more info:	moosehilledu@massaudubon.org

Program Description

While exploring the trails of Moose Hill children come to learn how to classify trees and observe the life cycle and how it changes through the seasons through observations and role-play. Groups may select to either learn about tree anatomy or how to use a simple key for tree identification.

Significant savings are offered when you select a second program to create a full-day of hands-on learning at Moose Hill. This program combines well with Maple Sugaring Season (in March), Weather and Climate, and Habitat Hunt. Because of our large trail system and full-day option, we can serve up to 130 students for many programs. We provide a ratio of one Moose Hill teacher-naturalist to 12 to 14 students.

Massachusetts State Curriculum Frameworks

Subject:	Science and Technology
Topic:	Life Science

Learning Standards

Characteristics of Plants and Animals

3-5 Life Science #1: Classify plants and animals according to the physical characteristics that they share.

Structures and Functions

3-5 Life Science #2: Identify the structures in plants (leaves, roots, flowers, stem, bark, wood) that are responsible for food production, support, water transport, reproduction, growth, and protection.

3-5 Life Science #3: Recognize that plants and animals go through predictable life cycles that include birth, growth, development, reproduction, and death.

3-5 Life Science #4: Describe the major stages that characterize life cycles

3-5 Life Science #5: Differentiate between observed characteristics of plants and animals that are fully inherited (e.g., color of flower, shape of leaves, color of eyes, number of appendages) and characteristics that are affected by the climate or environment (e.g., browning of leaves due to too much sun, language spoken).

Adaptations of Living Things





- 3-5 Life Science #7: Give examples of how changes in the environment (drought, cold) have caused some plants and animals to die or move to new locations (migration).
- 3-5 Life Science #9: Recognize plant behaviors, such as the way seedlings' stems grow toward light and their roots grow downward in response to gravity. Recognize that many plants and animals can survive harsh environments because of seasonal behaviors, e.g., in winter, some trees shed leaves, some animals hibernate, and other animals migrate.
- 3-5 Life Science #10: Give examples of how organisms can cause changes in their environment to ensure survival. Explain how some of these changes may affect the ecosystem.

Energy and Living Things

- 3-5 Life Science #11: Describe how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within a food chain from producers (plants) to consumers to decomposers.

Massachusetts State Curriculum Frameworks

Subject: Science and Technology

Topic: Earth Science

Learning Standards

Soil

- 3-5 Earth Science #4: Explain and give examples of the ways in which soil is formed (the weathering of rock by water and wind and from the decomposition of plant and animal remains).
- 3-5 Earth Science #5: Recognize and discuss the different properties of soil, including color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants.

Massachusetts State Curriculum Frameworks

Subject: Science and Technology

Topic: Physical Science

Learning Standards

States of Matter

- 3-5 Physical Science #3: Describe how water can be changed from one state to another by adding or taking away heat.

Massachusetts State Curriculum Frameworks

Subject: Arts

Topic: Music

Singing



PreK-12 Music #1: Students will sing, alone and with others, a varied repertoire of music.

Massachusetts State Curriculum Frameworks

Subject: English Language Arts

Topic: Language

Learning Standards

Discussion

PreK-12 Language #1: Students will use agreed-upon rules for informal and formal discussions in small and large groups.

Questioning, Listening, and Contributing

PreK-12 Language #2: Students will pose questions, listen to the ideas of others, and contribute their own information or ideas in group discussions or interviews in order to acquire new knowledge.

Vocabulary and Concept Development

PreK-12 Language #4: Students will understand and acquire new vocabulary and use it correctly in reading and writing.

Lesson Objectives

Students will know and be able to:

- Identify and understand the difference between coniferous and deciduous trees.
- Name the parts of the tree: roots, trunk, branches, buds, leaves, etc.
- Understand and discuss how a tree functions using xylem, phloem, and cambium vocabulary.
- Understand how trees adapt to survive the seasons.

Vocabulary

Season	bark	bud
Branch	leaves	trunk
Roots	xylem	phloem
Cambium	decompose	nutrients
Seedling	sapling	mature tree
Snag	fallen log	conifer
Needles	deciduous	broad leaf
alternate branches	opposite braches	forest community
under-story	ground cover	shrub layer
canopy		



Assessments

How will the Mass Audubon educator know that the students have met the standards?

- Mass Audubon educator will observe students exploring, observing, and identifying the tree life cycle through the seasons, the functions of a tree, and how to identify the type of tree using a simple guide book.
- Students will participate in answering teacher prompted questions.
- Students will demonstrate their understanding of the tree life cycle and the functions of a tree by participating in a wrap-up activity.

Summarizer

How will the Mass Audubon educator close the lesson to see if students met your objective?

- Children will dramatize the layers of a forest as well as the life cycle of a tree at the end of a program with instructor guidance.
- As a group the children will physically create the layers within a tree and show each layer's function with their bodies.
- When shown an example of deciduous and coniferous tree students will be able to identify which category that tree belongs to as well as using guide-books (depending on which program was chosen) to identify the type of tree.



Mass Audubon School Programs

At Mass Audubon we strive to create learning experiences that are enriching, innovative, meaningful, and engaging. All our school programs are aligned with Massachusetts Curriculum Frameworks. Our network of wildlife sanctuaries and nature centers located in urban, suburban, and rural communities around the state enable us to have strong relationships with local schools.

Our Education Foundations

- Place-based education is an educational philosophy that connects learning to what is local for an individual. We help build conservation communities, working with students and teachers in cities and towns to develop place-based environmental education that is linked directly to their home community.
- Inquiry-based learning is focused on teamwork, being learner-centered, questioning ourselves and the world around us, providing a more focused, time-intensive exploration, promoting lifelong learning, communication, and learning as fun.
- We are fully committed to creating a positive and supportive environment for all learners.
- We strive to be culturally sensitive, recognizing and embracing cultural differences.

Differentiated Instruction

- We strive to create a positive learning environment that is inclusive, supportive to all learners, and sensitive to cultural diversity.
- Outdoor classroom experiences are structured to meet the needs of the particular learners.
- Students work in small groups using hands-on materials.
- A variety of educational media are used, including colorful illustrations.
- With advance notice, efforts will be made to accommodate all learning styles and physical needs.

Notes

- Nature exploration is dependent upon the weather and other conditions. A class might observe different wildlife than they expected to see. An outdoor lesson can sometimes provide unexpected, but enriching teachable moments on a natural history topic that was not planned.
- Mass Audubon nature centers each have a unique landscape and will customize programs to work best at their particular site.
- Our lessons can be adapted to incorporate a classroom teacher's needs when given enough notice.

