



School Program Name: **Maple Sugaring Classroom Presentation**
Name of Sanctuary: Moose Hill Wildlife Sanctuary
Grade Level: PreK - 2
Location Options: Moose Hill Wildlife Sanctuary
Time: 60-minutes; during the month of March
For more info: moosehilledu@massaudubon.org

Program Description

Learn how trees make sugar and the changes they go throughout the year to ready for this season. Listen to a Native American legend about the discovery of maple sugar and see some of the tools used by Native Americans, early settlers in North America, and modern sugar farmers. Savor the different tastes of maple sap and maple sugar.

Group size is limited to one class per presentation to allow interactions with the naturalist.

Massachusetts State Curriculum Frameworks

Subject: Science and Technology
Topic: Life Science

Living Things and Their Environment

PreK-2 Life Science #7: Recognize changes in appearance that animals and plants go through as the seasons change.

Subject: Science and Technology
Topic: Earth and Space Science

The Sun as a Source of Light and Heat

PreK-2 Earth Science #4: Recognize that the sun supplies heat and light to the earth and is necessary for life.

Subject: Science and Technology
Topic: Physical Science

States of Matter

PreK-2 Physical Science #2: Identify objects and materials as solid, liquid, or gas. Recognize that solids have a definite shape and that liquids and gases take the shape of their container.

Subject: Science and Technology
Topic: Technology



Materials and Tools

PreK-2 Technology #1.2: Identify and explain some possible uses for natural materials (e.g., wood, cotton, fur, wool) and human-made materials (e.g., plastic, Styrofoam).

Engineering Design

PreK-2 Technology #2.1: Identify tools and simple machines used for a specific purpose, e.g., ramp, wheel, pulley, lever.

Lesson Objectives

Students will know and be able to:

- Recognize that the sun is the source of light and heat.
- Recognize and compare the signs of winter and spring.
- Recognize that trees and other plants make sugar to grow. Recognize that sap is made of water and sugar and it flows up and down the tree.
- Summarize the process of turning maple sap into syrup.
- Identify three tools used in the process of making maple syrup.

Vocabulary

Tree	Season	Tool	Evaporate
Trunk	Spring	Ruler	Water
Branch	Winter	Drill	Steam
Root	Temperature	Spout	Boil (212 degrees F)
Leaf	Liquid	Bucket	Freeze (32 degrees F)
Bud	Syrup	Lid	
Sap	Sugar	Mokuk	
Sun	Tap	Yoke	

Assessments

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

- When asked to name the source of light and heat, students will say “the sun.”
- Students will describe two signs of winter and two signs of spring.
- Students will demonstrate knowledge that trees make sugar to grow.
- Students will explain that sap is made of water and sugar.
- Students will demonstrate their understanding of different tools by participating in a wrap-up activity.



Summarizer

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

- Students will sing the Tree Song, naming the parts of the tree and that it makes sugar to grow.
- Students will taste sap and syrup and describe the process needed to make syrup.
- Students will select a picture of a tool seen during the tour, name it and describe its function.



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.
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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.
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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.

