Maple Syrup Science

Grades: 3-5

Standards
Michigan K-12 Standards in Science

Next Generation Science Standards

STEM Connection
Students will learn about the complex environmental and biological factors that are involved in maple syrup production. Maple syruping is a STEM rich activity.

Take Home
Activity worksheets are available via email upon request.

Overview

Students will experience the exciting process of making maple syrup from tree sap. This naturalist-guided program will include an introduction to the techniques used to identify the proper trees for tapping, a walk to the “sugar bush” to see tapped trees and sap collection buckets, and a discussion of the sap collection process. The program will conclude by gathering as a group around the outdoor sap stove for a demonstration of how maple syrup is made. All participants will be offered a taste sample of syrup produced on site! During this program we will cover plant physiology, historical aspects, and the regional occurrence of maple syrup production.

Details

- This program lasts 1½ hour and can be adapted to suit your needs
- Offered in March
- Appropriate for Grade Levels 3-5

The Experience

In this program, students will be engaged in a multifaceted program experience with activities that may include:

- Exploring a forest habitat where we tap Sugar and Black Maple trees to make maple syrup
- Learning and using techniques of tree identification
- Seeing sap from local trees being boiled down into maple syrup in an outdoor sap evaporator

Helpful Hints

This program will be held in the great outdoors, please make sure students are dressed for the weather and potentially slippery, icy, snowy, and/or muddy conditions.

Standards

3rd Grade
3-LS3-1
Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. **

- Students will become aware of the environmental factors that make it possible for sugar maples to thrive in our region.

L-LS4-4

Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there change. * **

- Students will be encouraged to consider how climate change may pose a threat to the long-term survival of sugar maple trees in our region, and how that may impact the centuries-old tradition of making maple syrup.

4th Grade
4-LS1-1
Construct an argument that plants and animals have internal and external structures that function to support survival, growth, and reproduction.

- Students will explore and discuss how maple trees mix stored sugar with water to make sap, which in late winter/early spring moves through internal structures to nourish leaf and branch growth.

3-5- ETS1-1
Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

- Students will learn about how the price of maple syrup correlates to environmental and economic factors.

5th Grade
5-PS3-1
Use models to describe that energy in animals' food was once from the sun.

- Students will be able to correlate how sugars found in maple syrup were stored as a result of the previous growing season's photosynthesis.

* - Integrates traditional science content with engineering.
**- Allow for local, regional, or Michigan specific contexts or examples in teaching and assessment.