Join the naturalists to learn about the science of photosynthesis and maple sugaring, visit our “sugar bush” to see tapped trees, taste sap and syrup, and collect sap & see it boiling down to syrup.

TUESDAY - FRIDAY
January 20 to March 6

► To schedule a field trip call (301) 962-1480

► $5 per student
BRING YOUR SCIENCE AND SOCIAL STUDIES LESSONS TO LIFE WITH BROOKSIDE NATURE CENTER’S MAPLE SUGARING PROGRAM — IT’S SWEET!

OVERVIEW:
In this sweet 1-hour program, students will visit the Harper 1870’s Homestead and explore Brookside Nature Center’s Sugar bush when sap starts flowing and animals are waking up from their long wintery nap.

During an indoor presentation (about 20 minutes) students will learn about the history of maple sugaring, learn about a Native American legend on how maple syrup was first discovered, and learn about maple trees and why the sap is sweet.

Following the indoor presentation the group will go outdoors for 40 minutes to identify maple trees, collect sap, visit the evaporation station, and do a taste test of sap and syrups.

PLEASE DIVIDE YOUR GROUP FOR THE OUTDOOR PROGRAM:
Students will be lead by Nature Center Naturalists through the various learning stations to learn about different phases of syrup making. We encourage small learning groups of 15 to increase hands-on exploration and naturalist interactions.

WEATHER & TIME PERMITTING:
The majority of the program takes place outside, students and chaperones should be dressed for the weather. If you have time, you and your students are invited to explore the forest on a hike through the forest as it is waking up for Spring!

PRE-TRIP ACTIVITIES:
The Colorful Celery Tree
This exploration demonstrates where water flows in a stalk of celery and helps explain how and where sap might be collected from a maple tree.

Materials needed:
Celery with leafy tops
Clear glasses
Water
Food Coloring

Directions:
► Trim away the bottom of a celery stalk leaving the leafy part intact.
► Fill a glass with one to two inches of water.
► Add enough food coloring to make a very dark solution.
► Put the end of the celery stalk into the glass and let it sit all day.

Plants need water to make their food. Sap is the fluid that circulates in a plant to carry water to leaves and bring sugar to different parts of a growing plant.

Sap is generally 97 percent water and 3 percent sugar. Sugar stored in the roots of the plant in winter begins to flow in the sap when the days become longer and warmer and buds begin to burst to form new leaves later in spring. The tubes that carry the sap are xylem and phloem. The xylem carries sap upward from the roots and the phloem carries it downward from the leaves.

MAPLE SUGARING VOCABULARY:
Boil - The temperature at which a substance changes from liquid to gas. The boiling point of sap is 219°F.
Bucket - Sometimes a bucket or pail is hung on a spile to collect sap.
Drill - A tool used to create a hole in the tree. This process is called tapping a tree.
Evaporator Pan - The container used to hold sap during boiling.
Freeze - To change a substance from liquid to solid by cooling. Sap starts to flow when temperatures outside rise above freezing during the day.
Gallon - A measure of liquid. On average it takes 40 gallons of sap to make 1 gallon of syrup.
Hydrometer - A tool to measure the sugar content of a liquid by how high it floats in a cup of sap or syrup.
Maple Syrup - Concentrated sap of sugar maple trees.
Photosynthesis - The process by which green plants convert carbon dioxide and water with the help of the sun’s light into sugar and oxygen.
Roots - Roots anchor a plant in the ground, absorb water and minerals from the soil and store food for a plant.
Sap - Is a watery substance that travels through a tree’s sapwood.
Sapwood - The most recently formed layer of wood under the bark containing the xylem and phloem.
Spile - A spout tapped into a tree to drain sap.
Sugarbush - A group of sugar maple trees that are tapped to make maple syrup.
Tap - The act of drilling a hole into a maple tree to collect sap.
Trunk - The trunk provides support for the tree and carries the sap throughout the tree. It is the part of the tree that is tapped to get the sap.

Adapted from the W. K. Kellogg Experimental Forest - Michigan State University