

## CUMMING NATURE CENTER SCHOOL PROGRAMS

### MAPLE SUGARING PROGRAM

During this program, students will learn about the production of maple syrup- a uniquely American food made since the times of the Iroquois. Students will learn about sap and how sugar is created by green plants. At the conclusion of this program, students will have the opportunity to taste the product.



#### New York State Department of Education Elementary and Intermediate Learning Standards in Science

##### **Elementary Scientific Inquiry (Standard 1):**

- Key 1: Students will ask questions about the production of sap.
- Key 2: Students will explore and observe how trees create sap.
- Key 3: Students will determine why this process is important.

##### **Elementary Science/ Physical Science (Standard 4):**

- Key 1: Students will make observations about seasonal changes.

##### **Elementary Science/ Living Environment (Standard 4):**

- Key 4: Students will understand different life stages of plants.
- Key 7: Students will experience how humans interact with their environment.

##### **Intermediate Scientific Inquiry (Standard 1):**

- Key 1: Students will develop hypotheses about why trees produce sap.
- Key 2: Students will make observations that will allow them to understand these processes.
- Key 3: Students will be able to defend their hypotheses based on the observations made.

##### **Intermediate Science/ Physical Science (Standard 4):**

- Key 1: Students will recognize the connection between the movement of the earth and seasonal changes.

##### **Intermediate Science/ Living Environment (Standard 4):**

- Key 4: Students will observe the developmental patterns of plants as they relate to the production of sap.
- Key 7: Students will learn how humans depend on nature.

#### Program Objective

1. To encourage an appreciation and understanding of the natural world through hands-on educational experiences.
2. To enable students to make a connection between our food sources and the natural world.
3. To provide an interactive atmosphere in which to learn about American history.

#### Program

1. Pre-visit materials will prepare and enhance your students visit to the nature center. The material is intended to introduce key vocabulary words and offer an activity that will introduce the students to one of the key concepts of the program.
2. The visit to the nature center will focus on a trail-side experience with an environmental educator. All participants should dress for the weather (most of the program will be held outside). Students will make observations about their environment and will engage in interactive activities that will teach them about the production of maple syrup.
3. Post-visit material will encourage positive attitudes about the natural environment and reinforce the material covered at the nature center.
4. To ensure proper billing, the RMSC must have received a completed purchase order from your school prior to your program. The program will automatically be billed to you after it has taken place.

**All groups unable to secure a purchase order, must pre-pay for this visit.**

#### Key Vocabulary

**Photosynthesis:** The process by which plants turn sunlight into food energy.

**Sap:** A sticky substance made of water, sugar, and dissolved minerals that flow inside the tree.

**Pioneers:** Early European settlers of New York.

**Seneca:** Also known as the Iroquois or Haudenosaunee, were Native Americans local to this part of New York.

#### Suggested Pre-visit Activity

How do plants drink water? Do they collect it in their leaves as it falls from the sky, or do they drink it out of the ground through their tiny roots? Explore this question by conducting an experiment using celery.

\* Slice a small piece off of the bottom of a stalk of celery to allow for water circulation (do not remove the leafy parts). Fill a glass with water and add a few drops of blue food coloring. Place the stalk of celery into the glass of colored water. After a few days, the celery leaves will begin to change color!

\* At the same time, place a second piece of celery in soil (or anything else to keep it upright). Spray the leaves with water daily. Be careful not to spill any water into the soil. Eventually, the celery will die due to dehydration.