# Potawatomi Farming

## Objective

Students will read about early farming among the Potawatomi people and compare two stories about maple syrup. Students will learn that maple syrup is not sweet when it comes from the tree and conduct an experiment to find what percentage of sugar makes a substance taste sweet. Students will evaporate sugar water to demonstrate how the sap from a maple tree can become sugar.

## Background

The Citizen Potawatomi people came to Oklahoma from the Great Lakes area during the Indian Removals. They are relatives and allies of the Ojibwe and Ottawa tribes, and the name "Potawatomi" refers to their role as "fire keepers" in that alliance. They are Algonquian-speaking people, and their name for themselves is "Nishnabek" (related to the Ojibwe word "Anishinabeg.") There are around 28,000 Potawatomi Indians today.

Potawatomi women planted and harvested corn, beans, squash, and tobacco, and gathered wild rice and berries. The men hunted deer, elk, and wild birds and caught fish. They converted forests into enriched agricultural fields using an ancient technique known as "slash and burn." During *Gtegangises* (Planting Moon), tools made of bone, stone and wood were used to cultivate crops, including peanuts, potatoes, onions, melons and the "Three Sisters" (corn, beans and squash).

Crops and a variety of nuts (acorns, chestnuts and beechnuts) were harvested during *Dgwaget (*fall*)* and stored for the winter in underground pits and baskets.

Early in the spring, when their food was about to run out, the Potawatomi tapped maple trees for syrup. They collected sap in birch bark pails and poured it into log troughs hollowed from basswood trees. The large surface area and shallow depth of the troughs was ideal for ice formation. Every morning, ice was removed, leaving a more concentrated sugar solution behind. The concentrated solution could then be boiled to make sugar.

Wooden evaporating dishes were placed on flat stones over the coals of a fire that burned night and day. In the old times, families would all move together to "sugar camp," where firewood and equipment had been stored the year before. Most.of the time was spent stirring. When the syrup reached just the right consistency, it was beaten so that it would solidify in the desired way, into soft cakes, hard candy, and granulated sugar. Then it was stored in birch bark boxes called *makaks*, and sewn tight with spruce root. Given birch bark's natural preservatives, the sugars would keep for years.

## Materials

- five small paper cups for each student
- five 1-liter bottles
- water
- sugar
- maple syrup

## Oklahoma Academic Standards

GRADE 3

Speaking and Listening: R.1,2,3,4; W.1,2.
Fluency: F.1. Reading and Writing Process: R.2. Critical Reading and Writing: R.1
Economics: 1,2.
Oklahoma History: 3,5,11
Life Science: 1-1

GRADE 4

Speaking and Listening: R.1,2,3,4; W.1,2.
Fluency: F.1. Reading and Writing Process: R.2. Critical Reading and Writing: R.1
Regional Geography: 2D,3,4
Life Science: 1-1

GRADE 5

Speaking and Listening: R.1,2,3,4; W.1,2.
Fluency: F.1. Reading and Writing Process: R.2. Critical Reading and Writing: R.1
Physical Science: 1-1,2, 4

## Vocabulary

**agricultural—** having to do with the science or occupation of cultivating the soil, producing crops, and raising

**allies—** groups associated or united with another for some common purpose

**concentrated—** increased the amount of a substance in a space by removing other substances with which it is mixed or in which it is dissolved

**consistency—** the degree of thickness, firmness, or stickiness

**converted—** changed from one substance, form, use, or unit to another

**cultivate—** to prepare land for the raising of crops

**enriched—** fertile

**evaporate—** to pass off or cause to pass off into vapor from a liquid state

**granulated—** formed or crystallize into grains or granules

**harvest—** the gathering of a crop

**Indian removals—** a policy of the US government in the 19th century whereby Native Americans were forcibly removed from their ancestral homelands in the eastern United States to lands west of the Mississippi River, thereafter known as Indian Territory

**preservative—** something that has the power of protecting from spoilage

**slash and burn—** a method of agriculture in which existing vegetation is cut down and burned off before new seeds are sown, typically used as a method for clearing forest land for farming

**trough—** a long shallow container

## Procedures

1. Read and discuss background and vocabulary.
2. Provide copies of the two stories about maple syrup included with this lesson. Students will read them individually or as a class and discuss how they are different and how they are the same. Which story is a fable, and what is the moral?
3. Maple sap does not taste sweet when it first comes out of the tree. It is only about 2 percent sugar. The rest is water that has to be boiled down before it begins to taste sweet.

   —Provide each student with 5 small paper cups numbered 1-5. Fill the cups with sugar water containing different concentrations of sugar as follows:

   1. 1 liter of plain water
   2. 1 liter of water with 10 grams of sugar (1 percent)
   3. 1 liter of water with 20 grams of sugar (2 percent)
   4. 1 liter of water with 30 grams of sugar (3 percent)
   5. 1 liter of water with 40 grams of sugar (4 percent)

   —Students will sample each of the cups and rate each cup as follows:

   - not sweet
   - a little sweet
   - sweet
   - very sweet

   —Provide each student with a small amount of maple syrup to compare with the sugar water.
4. Demonstrate the evaporation of sap to produce maple sugar by conducting the following experiment. Provide each student with a shallow bowl and a small amount of sugar water you have prepared ahead of time by mixing sugar in water and heating it. Students will observe the sugar water to see how long it takes the water to evaporate, leaving the sugar in the bottom of the bowl. Discuss the results.

## Extra Reading


Bruchac, Joseph, and Murv Jacob, *The Circle of Thanks: Native American Poems and Songs of Thanksgiving,* Troll, 2003.

Cook, Connie Brummel, and Scott Cameron, *Maple Moon*, Fitzhenry and Whiteside, 1999.

Glatzer, Jenna, *Native American Festivals and Ceremonies,* Mason Crest, 2002.

Keoke, Emory Dean, and Kay Marie Porterfield, *Food, Farming, and Hunting (American Indian Contributions to the World)*, Facts on File, 2005.

San Souci, Robert, Cut From the Same Cloth; American Women of Myth, Legend and Tall Tale, Putnam Juvenile, 2000.

St. Antoine, Sara (editor), and Trudy Nicholson and Paul Mirocha, *The Great North American Prairie: Stories from Where We Live*, Milkweed, 2004.

# Two Maple Syrup Stories

## Nanabozho and the Maple Trees

When Nanabozho, the Anishinaabe Original Man, our teacher, part man, part manido, walked through the world, he took note of who was flourishing and who was not, of who was mindful of the Original Instructions and who was not. He was dismayed when he came upon villages where the gardens were not being tended, where the fishnets were not repaired and the children were not being taught the way to live. Instead of seeing piles of firewood and caches ofcorn, he found the people lying beneath maple trees with their mouths wide open, catching the sweet syrup oft he generous trees. They had become lazy and took for granted the gifts ofthe Creator. They did not do their ceremonies or care for one another. He knew his responsibility, so he went to the river and dipped up many buckets of water. He poured the water straight into the maple trees to dilute the syrup. Today, maple sap flows like a stream of water with only a trace of sweetness to remind the people both of possibility and of responsibility. And so it is that it takes forty gallons of sap to make a gallon of syrup.

## How the Squirrels Taught the People to Make Sugar

It is said our people learned to make sugar from the squirrels. In late winter, the hungry time, when caches of nuts are depleted, squirrels take to the treetops and gnaw on the branches of sugar maples. Scraping the bark allows sap to exude from the twig, and the squirrels drink it. But the real goods come the next morning, when they follow the same circuit they made the day before, licking up the sugar crystals that formed on the bark overnight. Freezing temperatures cause the water in the sap to sublimate, leaving a sweet crystalline crust like rock candy behind, enough to tide them over through the hungriest time of year.

Our people call this time the Maple Sugar Moon, Zizibaskwet Giizis, The month before is known as the Hard Crust on Snow Moon. People living a subsistence lifestyle also know it as the Hunger Moon, when stored food has dwindled and game is scarce. But the maples carried the people through, provided food just when they needed it most.

Stories excerpted from Robin Wall Kimmerer, “Maple Sugar Moon,” *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants,* Milkweed, 2015.

Compare the two stories. Which one is a fable and which one is fact? What is the moral of the fable?

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