



SUBJECT
HISTORY/SCIENCE

GRADE 3

Did the Wampanoag have maple syrup?

Name _____

Project Summary

You are going to figure out if the Wampanoag might have had maple syrup before trading with Europeans; and, if so, how they might have made it.

Below is some information that will help you in your investigation.

What is maple syrup?

Maple syrup is a thick, sugary liquid that is usually made from the sap of the sugar maple tree, although it can also be made from other types of maple trees.

In climates like that of Massachusetts, these maple trees store starch in their trunks and roots before the winter. This starch is then changed into sugar that rises in the sap in late winter and early spring.

The sap rises in the wood just under the bark. Maple trees are tapped by drilling or cutting holes into their trunks and collecting the sap that comes out of the holes.

If you wanted a cup of maple syrup, you would need to collect about 40 cups of maple sap. The sap is then boiled to evaporate about 39 cups of the water, leaving you with one cup of concentrated sweet syrup.

Early Native American myths about maple syrup

Early myths about maple are widespread through the Eastern Woodland Indians, possibly including the Wampanoag.

According to legend, Glooskap, the Creator, had at first made life too easy for his People by filling the maple trees with a thick syrup that flowed year-round. One day, Glooskap found a village of his People strangely silent – the cooking fires were dead, weeds had overtaken the gardens. Glooskap discovered the villagers laying in the woods, eyes closed, letting the syrup from the maple trees drip into their mouths.

Glooskap brought fresh water from the lake and using his special power filled the trees with water until the syrup ran from them thin and fast. He then ordered his people up, telling them that the trees were no longer filled with the maple syrup, but only a watery sap. He told them they would have to hunt and fish and tend their gardens to survive. He promised that the sap would run

again, but only during the winter when game is scarce, the lake is frozen, and crops do not grow.

How could the Wampanoag make maple syrup without metal pots?

History is silent on whether Native Americans boiled down the sap to maple syrup in something other than metal pots, but there is no archeological evidence of any non-metal pots that might have been durable enough to do the task of boiling sap for long periods.

Does that mean that the Wampanoag did not have maple syrup until they traded furs with the Europeans for iron pots? Possibly, but if there were no maple syrup before the late 1500's, why would there be an ancient Indian myth about Glooskap and maple syrup?

In 1755, a young colonist was captured and "adopted" by a small group of natives in the region that is now Ohio. In 1799 he published his story in *An Account of the Remarkable Occurrences in the Life and Travels of Col. James Smith*, which includes a description of how the Native Americans made maple sugar **without metal pots!**

Was what he wrote true? How could they have made maple syrup without metal pots? He claims that there is a way. Figuring out a way is your job. You do, however, need a little more knowledge that the Wampanoag had in order to put your third grade knowledge to work. Here's that knowledge.

How do you identify a sugar maple tree that has no leaves?

Since the gathering of sap occurs in the late winter and early spring, when the maple trees have no leaves, the Wampanoag had to know how to locate sugar maple trees by their bark, twigs, and buds. While all maples trees have sugar in their sap, sugar maple trees have a much higher proportion of sugar in their sap. (Look for trees whose trunks are larger than 12 inches in diameter.)

Bark: Brownish grey in color; chunks that are peeling off to the side as a result of trunk growth. Long, irregular, thick vertical plates that appear to peel from the trunks in a vertical direction.

Twigs: Opposite branching, where the twigs grow off opposite each other. Sometimes the twigs of a sugar maple may look like they are alternating, but this is because some of the twigs have broken off. Twigs are reddish brown, shiny, slender, and relatively smooth.

Buds: Sharply pointed buds at the ends of the twigs.

How to make containers from birch bark.

The Wampanoag knew how to use birch bark to make many useful items.

Birch bark is the thin, flexible bark from a birch tree. It is a very versatile material with which to make containers. It can be used to make baskets, bowls and cups, and even canoes and shelters. It is waterproof (if there's no holes in it, of course!). Birch bark has other uses too. It will burn, even when wet, and is therefore ideal for starting fires.

The best time to remove birch bark from the birch tree is in the spring when the sap is running. However, it can be removed at any time. Ideally you would remove the bark only from a fallen tree. If your needs cannot be met this way, then of course take it from a living tree. Be careful not to damage the inner layer of bark below the outer layer that you are taking. Damaging the inner bark may kill the tree.

Birch bark can be rather brittle when you try to bend it. The secret is to heat it briefly over a flame. Don't scorch it, just heat it. You will find that it immediately becomes very pliable!



A Birch Bark Water Container

Think like a Wampanoag!

Now, using the above information and your knowledge as an educated third grader who can think both inside and outside the box, can you imagine how **you** could make maple syrup this spring without a metal pot? If you can imagine a way, then the Wampanoag could have done something very similar before the Europeans came to Massachusetts.

Your Assignment:

First, work with your thoughts alone. Jot down a few thoughts.

Then, share with a classmates and get and give feedback.

Finally, write down how you think maple syrup might have been made, if you think it could have been done.

[] No, it would have been impossible to make maple syrup before the Europeans arrived with metal pots.

[] Yes, it might have been possible. Here's how:

Footnote to "Did the Wampanoag have maple syrup?"

According to James Smith in his book, *An Account of the Remarkable Occurrences in the Life and Travels of Col. James Smith*, here is how the Indians made maple syrup without metal pots.

"Shortly after we came to this place, the squaws began to make sugar. We had no large kettles with us this year, and they made the frost, in some measure, supply the place of fire, in making sugar.

Their large bark vessels, for holding the stock-water (sap), they made broad and shallow; and, as the weather is very cold here, it frequently freezes at night in sugar time; and the ice they break and cast out of the vessels.

I asked them if they were not throwing away the sugar? They said no; it was water they were casting away, sugar did not freeze, and there was scarcely any in that ice.

They said I might try the experiment, and boil some of it, and see what I would get. I never did try it; but I observed that after several times freezing, the water that remained in the vessel, changed its color and became brown and very sweet."

Science Time: Explain how the process that Smith describes concentrated the sugar in the remaining liquid, making it more like maple syrup.

Standards:

History/Social Studies

GRADE 3 LEARNING STANDARDS

Building on knowledge from previous years, students should be able to:

New England and Massachusetts

3.2 Identify the Wampanoags and their leaders at the time the Pilgrims arrived, and describe their way of life. (H, G)

3.3 Identify who the Pilgrims were and explain why they left Europe to seek religious freedom; describe their journey and their early years in the Plymouth Colony. (H, G, C, E)

- A. the purpose of the Mayflower Compact and its principles of self-government
- B. challenges in settling in America
- C. events leading to the first Thanksgiving

Grade 3: Technology/Engineering

ETS1. Engineering Design

- 3.3-5-ETS1-1. Define a simple design problem that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost that a potential solution must meet.*
- 3.3-5-ETS1-2. Generate several possible solutions to a given design problem. Compare each solution based on how well each is likely to meet the criteria and constraints of the design problem.*
- 3.3-5-ETS1-4(MA). Gather information using various informational resources on possible solutions to a design problem. Present different representations of a design solution.*