Making Maple Syrup

TEACHER: *Take a look at this unusual photo. Can you tell what is happening?*

STUDENTS: Something is dripping.

You're right. Something is dripping in this picture, but do you know what it is?

Water, maple sap, etc.

The drop in the photo looks a lot like a drop of water coming out of a faucet. But, this isn't regular water, and it isn't coming from your kitchen sink. This is maple sap, and it comes out of a maple tree. Do you know what sap is?

Liquid inside a tree, etc.

Sap is a liquid that is found in trees and plants. It is made mostly of water, sugar and other nutrients that help nourish the trees and plants. In a maple tree, the sap is found on the inside of the tree, under the bark. It passes through the tree all the way from the roots, up to each branch and leaf. It helps to keep the tree strong and healthy. Do we have sap in our bodies?

No

Instead of sap, we have blood circulating through our bodies to keep us strong and healthy. The skin on our bodies holds the blood inside of us, just like the bark on a tree holds the sap inside. What happens when you get a small cut on your skin?

You bleed

When you get a small cut, it usually bleeds for a while and then the skin cells grow back and it heals. A small cut on your knee might hurt a bit, but it usually doesn't keep you from running, playing, and doing all of the things you usually do.

The tree in this photo has a "spile" in the trunk. The spile is a small spout that is drilled into the trunk of a tree to help catch the dripping sap. Drilling a spile into the tree is like giving the tree a small cut. What would happen if you drilled too many holes into the tree?

It would die, get sick, etc.

Trees are living things, just like us. Trees can still live if they get a cut, but just like humans, if you hurt them too much they will become weak and unhealthy. Drilling one hole in the tree doesn't hurt it.

A lot of sap will drip from that one spile. The sap only drips from the tree in the early spring, when the nights are cold and the days are becoming warmer, so people only tap trees once a year. Buckets hang from the spiles to hold the sap. When the buckets are full, they are collected. The sap is poured into a large metal pan and placed over a fire to slowly boil. As the sap is heated, it becomes thicker and sweeter. Do you know what it will turn into?

Maple syrup

That's right. Maple sap turns into maple syrup, when it is slowly cooked for a long time. Raise your hand if you have tried maple syrup.

(Have children raise their hands.)

The sap in this picture is coming from a sugar maple. Sugar maples are very special trees. Can you guess why the sugar maple is called a "sugar maple?"

Because it has sugar in it

The sap has a lot of natural sugar. Not all trees have a sweet sap that can be collected and turned into maple syrup. We are lucky to have sugar maples growing where we live. People around Ithaca, NY have been collecting maple sap from trees for hundreds of years. The Native Americans were the first to discover that sugar maples could be "tapped" to get the sweet sap, and heated to make syrup. Although maple trees grow in many places, sugar maples can only grow and be tapped in a few places in the world, including New York State. Do you know any other places where people make maple syrup?

Canada, Vermont, etc.

Most of the maple syrup in the world (80%) comes from Canada. But New York State is the third largest producer. Vermont, New Hampshire, Wisconsin, Ohio, Michigan, Pennsylvania, Massachusetts, and Connecticut all make maple syrup too.

No one knows for sure how the Eastern Woodland Indians in New England and Canada discovered maple syrup, but there are many stories. How do you think it happened?

(Let children share ideas – This can be done as a whole group, or kids can turn to their neighbor and share their thoughts.)

Kindergarten Standards:

NYS Common Core Kindergarten Social Studies Standards

- K.8.a Climate, seasonal weather changes, and the physical features associated with the community and region all affect how people live.

Kindergarten ELA Power NYSCCLS (ICSD Power Standards in Bold)

Reading Standards for Informational Text: Kindergarten

- **Integration and Knowledge of Ideas**
  7. With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).

Writing Standards: Kindergarten

- **Research to Build and Present Knowledge**
  8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

Speaking and Listening Standards: Kindergarten

- **Comprehension and Collaboration**
  1. Participate in collaborative conversations with diverse partners about *kindergarten topics and texts* with peers and adults in small and larger groups.
    a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).
    b. Continue a conversation through multiple exchanges.
    c. Seek to understand and communicate with individuals from different cultural backgrounds.
  2. Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
  3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
- **Presentation of Knowledge and Ideas**
  6. Speak audibly and express thoughts, feelings, and ideas clearly.

Language Standards: Kindergarten

- **Vocabulary Acquisition and Use**
  6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

Next Generation Science Standards for Kindergarten

K-ESS3 Earth and Human Activity

- ESS3.A: Natural Resources
  1. Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)