

## TEACHER'S GUIDE

### GUIDE FOR INCORPORATING Ann Purmell's **MAPLE SYRUP SEASON** into your classroom (Holiday House, 2008)

#### LANGUAGE ARTS

The word "maple" comes from an Old English word that looks very similar, "mapel."

Story starters:

Imagine you're a maple tree and maple syrup season is about to begin. What are you thinking? Feeling? Seeing? Smelling?

Imagine if the sap from other kinds of trees could be made into other edible things—could Poplar trees make pop? Could Pine trees make pineapple juice?

Imagine you had a sugarbush. Review all of the jobs in Maple Syrup Spring. Which one would you want? Why? Who in your family would be the best for the other jobs? What would be the best part about working together? What would be the most difficult part about working together?

Native Americans used to call maple syrup "sweetwater," why do you think that is?

Finger play

First you take the tree and you tap it, you tap it, (tap fingers)  
then you take the sap and you boil it, you boil it, (wiggle fingers)  
then you take the syrup and you eat it, you eat it! (lift finger to lips)

Poetry

"Love and Maple Syrup"  
Song lyrics by Gordon Lightfoot

Love and maple syrup goes together  
Like the sticky winds of winter when they meet  
When lonely lovers come to rest  
Beneath the trees they do their best  
But still they can't be free  
Looking for the world to be  
Anything but what they see  
Longing to be understood  
By the heart that shapes the wood

If you go into the forest, gaze up through the leaves  
And see the sky that's almost wild  
You must learn to understand  
What makes the forest greet a man  
Like a mother's only child

In the north where winter's claw  
Relaxes now to keep the laws of nature under control  
People come and stand in line  
To rob the forest of her wine  
But they don't feel the cold

Looking for the world to be  
Anything but what they see  
Longing to be understood  
By the heart that shapes the wood

Love and maple syrup goes together  
Like the sticky winds of winter when they meet  
When lonely lovers come to rest  
Beneath the trees they do their best  
But still they can't be free

Love and maple syrup shine like  
Embers warm, like thoughts divine  
They tell us it is spring  
Love and maple syrup stir  
The thoughts of people into words

Of songs that they can sing  
Looking for the world to be  
Anything but what they see  
Longing to be understood  
By the heart that shapes the wood.

## **SCIENCE**

Ask students to locate the part(s) of the tongue that recognize sweetness using a dropper and maple syrup. What parts recognize salty tastes? Bitter tastes?

Questions to investigate:

Where does the tree get the sap?

If the leaves make the sugar how can we get sap without leaves on the tree?

Where is the sap kept or made by the tree?

How does the tree know it's maple sugar time?

Bring in a hygrometer and show students how it works

Use a water table to help students learn about liquid measurements such as those used in the preparation of maple syrup.

About 40 gallons of sap are required to make 1 gallon of maple syrup. Ten gallons of sap will produce about one quart of finished syrup.

Allow students to measure liquids in ounces, cups, pints, quarts, half gallons and gallons.

How many gallons of sap are needed to make one half gallon of maple syrup?

How many ounces are in one half gallon? How many cups?

Students can learn to read a thermometer. During the months of February through April students track daily temperatures on a graph to determine when sap is rising. If you do not live in a climate where maple syrup is produced, students could still track the weather in a sap producing climate via the Weather Channel or Internet. For sap to flow, daytime temperatures

need to be between 40-50 degrees, with evening temperatures in the mid to upper 20 degrees.

Take a nature walk. Ask students to identify trees in your area. Do they see any maple trees? Several types of maple trees produce sap for making syrup: Red maple, black maple, and silver maple. Most syrup comes from what is called a "sugar maple" sometimes called a hard maple or rock maple. The genus species name is "Acer saccharum." Black maple or "Acer nigrum" also produces sweet sap similar to the sugar maple.

## **RECIPES**

Some residents of Vermont celebrate maple syrup season by eating—are you ready?—maple syrup, plain raised doughnuts and dill pickles. Each bite of donut is dipped in syrup and eaten with nibbles of pickles every couple of bites. The sweet and sour combination is supposed to be delicious. Let your students decide!

If you're fortunate enough to live in an area where conditions are favorable, allow students to try making "sugar on snow" just like the family in Maple Syrup Season—on the cleanest snow possible, of course.

What's better with maple syrup than pancakes or waffles? You could teach students to make them from scratch, a mix or even use the frozen variety that pops in the toaster or microwave. Eating together provides a wonderful opportunity to teach character traits such as sharing, waiting your turn, and using good manners at the table.

As long as you're making pancakes, why not allow students to make the butter to go with them.

### **Homemade Butter**

Fill baby food jars half full with whipping cream and screw the lids on tightly. Allow students to turn shaking each jar. After about five minutes the cream will be whipped, and about a minute later lumps of yellow butter will form. Rinse off the liquid whey and add a pinch of salt, if desired. Top those pancakes!

## **Mashed Maple Syrup Apples**

4 Red Delicious apples (do not substitute with another variety)

$\frac{1}{2}$  Cup Maple Syrup

$\frac{3}{4}$  Cup coarsely chopped walnuts

$\frac{1}{4}$  Cup melted butter

1 t. ground cinnamon

1 T sugar

Preheat oven to 400 degrees. Use a small, unbuttered baking dish for baking the apples and a 9x4 inch loaf pan for the mashed mixture.

Peel and core apples, but leave them whole. Place close together on baking dish. Add  $\frac{1}{2}$  inch water and bake until very soft (about 1 hour). Remove from oven and cool.

Place apples in a medium bowl. Turn broiler on high.

Add maple syrup, walnuts, butter and cinnamon to the apples. Mash with a large fork. Scrape mixture into baking dish. Sprinkle sugar on top. Broil until top has caramelized to a rich brown (about 3 minutes). Enjoy!

Source: [homecooking.about.com](http://homecooking.about.com)

Another treat is "maple cream" which despite the name doesn't really contain any dairy. It's called cream due to its consistency after the maple syrup has been boiled further to remove more moisture, then cooled and stirred until it becomes creamy. Because it spreads like butter, students may enjoy a little taste on toast, a cracker, English muffin or a peanut butter and "cream" sandwich.

## **HISTORY**

After the passage of the 1764 Sugar Act imposing high tariffs on imported sugar, maple sweeteners became increasingly popular among colonists.

After colonists learned how to tap maple trees, they realized the practice of slashing trees the best way to get the sap. Not only was it wasteful, but

it hurt the trees. Similar to what is used today, colonists began to taps, troughs and buckets.

According to the Massachusetts Maple Producers Association, many of the big maple trees in New England have been tapped yearly for over 100 years!

## **GEOGRAPHY**

Maple syrup is only produced in North America. There are thirteen native maple trees in North America.

Ask students to look at a map and identify where the following species are distributed geographically:

1. Sugar Maple—NE US & SE Canada
2. Black Maple—NE US & SE Canada
3. Red Maple—E US & SE Canada
4. Silver Maple—E US & SE Canada
5. Boxelder—Eastern & Central US & Canada
6. Mountain Maple—NE US & SE Canada
7. Striped Maple—NE US & SE Canada
8. Bigleaf Maple—Pacific coast of US & Canada
9. Chalk Maple—SE US
10. Canyon Maple—US Rocky Mountains
11. Rocky Mountain Maple—Western US
12. Vine Maple—Pacific coast of US & Canada
13. Florida Maple—SE US coastal plain

Ask students to locate the following states and Canadian province on a map of North America:

In the United States:

Vermont (the largest producer)

New York

Maine

New Hampshire

Massachusetts

Connecticut

Utah

Michigan

Ohio

Virginia

Canada:

Quebec

## **VOCABULARY/SPELLING**

Ask students to spell and define the following terms from MAPLE SYRUP SEASON's glossary.

For an additional activity, this list could be given to students in random order so that they can alphabetize the words.

breaking out

bucket hat

evaporator

filtering tank

finishing pan

firebox

gathering buckets

gathering tank

hydrometer

running of sap

sap

sheeting

spout

storage tank

sugar bush

sugar on snow

sugarhouse