



Next Week:
Have a
Halloween
party!

The Marvelous Maple



photo by Stephen Goodhue, courtesy State of Vermont

Do you love pouring syrup over your pancakes? Are leaves turning bright colors in your neighborhood? There's a good chance that the syrup and the bright autumn colors both come from maple trees.

This week, The Mini Page learns more about the marvelous maple tree.

Nature's changing colors

In the fall, maple trees glow with the brightest colors of all trees. Summers with warm days and cooler nights produce the brightest fall colors.

Sometimes there are even more spectacular autumns when the summers have been dry. When there is little rain, **fungi**, such as mold, mildew and mushrooms, don't grow as much, so they don't suck as much moisture from the trees.

Trees that are under stress from drought or insects sometimes change colors earlier in the fall. If conditions are really bad, they might go straight from green to brown, without changing to the reds and yellows.

Helicopter seeds

All maple trees have papery wings attached to their seeds, which help them travel to new ground each fall. They are often called "helicopter seeds" because they spin in the wind.



Transformation

Leaves (and all other objects) get their color from the chemicals they are made of. In the summer, leaves contain a substance called **chlorophyll** (KLOR-uh-fil), which gives them their green color.

In the fall, cooler temperatures signal the tree to stop producing chlorophyll. As the chlorophyll breaks down, the leaves take on new colors, depending on what other chemical building blocks are still present in them.

Chlorophyll helps shield the leaf from sun damage. But even more important, it helps the tree capture sunlight. Plants use sunlight to create food. This process is called **photosynthesis** (foe-toe-SIN-the-sis).

Chlorophyll is like an engine that uses sunlight to turn water and carbon dioxide into sugars the plant can eat. It produces oxygen as a waste product. Chlorophyll turns leaves into little factories that produce sugar and oxygen.



photo courtesy State of Vermont

The brightest reds appear in the red maple, and not just in the fall. It always has some red on it — either red buds, flowers, leaf stems or leaves.



Sweet and sappy

Almost all maple syrup and maple sugar comes from the sugar maple tree. Its sap has more than twice as much sugar as any other kind of maple.

The sugar maple grows naturally only in the northeastern United States and eastern Canada. When planted anywhere else, it almost never flowers.

The maple tree is so important to Canada that its leaf is the country's symbol.



Because sugar maples live for a long time, they can produce a lot of sap during their lives. Some maple trees have been tapped for 100 years and are still producing sap.

Making sap

Around March, when the snow starts melting, tree roots warm up. This signals the trees that it is time to start growing leaves. Trees need to move the food stored in their roots up to the leaf buds so leaves can grow. This food is the sugary sap.

Sap flows for about six weeks. However, there might be only five or six times during those weeks when the sap is actually dripping from the holes made in the tree. These times are called **sap runs**. A sap run might last a few hours or a few days.

Resources



On the Web:

- bit.ly/MPmaple

At the library:

- "Whiz and the Secret Science of Maple Syrup" by Bumpa and Riley
- "October Is Having a Party!" by Caitlin Friebe

Try 'n' Find

Words that remind us of maple trees are hidden in this puzzle. Some words are hidden backward or diagonally, and some letters are used twice. See if you can find:

AUTUMN, CANADA, CARBON DIOXIDE, CHLOROPHYLL, COLORS, DRY, FLOWERS, FUNGI, HELICOPTER, LEAVES, MAPLE, OXYGEN, SAP, SEED, STEMS, SYRUP, TAP, TREE, VERMONT, WATER.

S I C H L O R O P H Y L L Z M
P G C A R B O N D I O X I D E
A N S E V A E L W N M U T U A
S U D M A P L E S D J Z L P R
F F L V W A T E R R E G R U O
V E R M O N T A E F E E K R H
C A N A D A C P P R L W S Y Y
S M E T S X F S W L T B O S R
O X Y G E N S R O L O C E L D
H E L I C O P T E R S J P R F



Cook's Corner

Vermont Maple Apple Rice Pudding

You'll need:

- 1 1/2 cups cooked plain white or brown rice
- 1/2 cup real maple syrup
- 3 large eggs, beaten
- 2 cups low-fat milk, heated

- 1/2 cup raisins or peeled, chopped fresh or dried apple pieces
- 1 teaspoon vanilla
- 1 teaspoon cinnamon



What to do:

1. Combine all ingredients in a greased 1-quart casserole.
2. Bake at 350 degrees for 40 minutes or until a knife inserted in the center comes out clean. Serve warm with whipped cream. Serves 4.

* You'll need an adult's help with this recipe.

Mini Jokes



Manny: What does a maple tree like to watch on TV?
Melody: Sap operas!

Eco Note



Tropical birds are disappearing fast, and scientists say extreme heat from climate change is largely to blame. A new study shows these birds are suffering dramatic population drops — as much as 38% since 1950 — due to more frequent and intense heat waves. Birds in places such as the Amazon face around 30 days of dangerous heat per year, compared to just three in the mid-20th century. While habitat loss is also a major threat to the birds' survival, researchers warn that climate change is now a bigger driver of declines in the tropics.

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For later:

Look in your newspaper for articles or photographs about trees changing colors.

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1. Underground parts of a tree that hold it in place (5-letter plural noun)
[][][][][]

3. Usually green parts of a tree growing from stems (6-letter plural noun)
[][][][][][]

2. Outside cover of the trunk, branches and tree roots (4-letter noun)
[][][][]

4. Parts of a tree growing from the trunk (8-letter plural noun)
[][][][][][][][]

1. The _____ of the big tree were buried deep in the earth.

2. Sylvia felt the rough gray-brown _____ on the tree trunk.

3. Maple _____ often change colors in mid-to-late October.

4. Billy climbs through the _____ to get higher up in the tree.

ROOTONYM®
by Jan & Carey Orr Cook

Study the definition. When you know the missing word, fill in the letter boxes and the sentence blanks.

Answers: Roots, Bark, Leaves, Branches.

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