Maple Production -
Hidden in History

Find twelve hidden objects in the picture.

FIND: fish, pencil, toothbrush, paper clip, ice cream cone, comb, needle, shoe, light bulb, piece of pizza, mouse, heart
Sugarbush Animal Classification

Maple producers have many animal friends who live in the sugarbush. Help them classify each animal on the list.

Sugarbush animals
Turtle
Squirrel
Wood Pecker
Rabbit
Deer
Chipmunk
Turkey
Peeper
Frog
Fox
Salamander
Snake
Grouse
Owl
Hawk

Mammals
1. __________
2. __________
3. __________
4. __________
5. __________

Birds
1. __________
2. __________
3. __________
4. __________
5. __________

Amphibians
1. __________
2. __________
3. __________
4. __________
5. __________

Name __________________________

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A maple tubing system is made up of several parts. At the tree is the spout, it is placed in the tap hole and connected to the drop line. Several drop lines will connect to the lateral line and several lateral lines will connect into the main line which delivers the sap to the sugarhouse or holding tank.

Maple Math – Adding spouts on tubing

The number of spout and drop lines on each of 4 lateral lines are listed below.

- Lateral line #1 has 4 spouts
- Lateral line #2 has 5 spouts
- Lateral line #3 has 5 spouts
- Lateral line #4 has 3 spouts

The 4 lateral lines are connected to a mainline. Add the spouts below.

Line #1  4
+Line #2  5
1st Total __

Line #3  5
+Line #4  3
2nd Total ___

How many spouts are on mainline?
Add 1st total ____ and 2nd total ____ = ____ spouts

If each tap hole yielded 20 gallons of sap during the sap season, this mainline would carry a total of 340 gallons of sap, enough to make 8 gallons of maple syrup.
Maple Languages

Maple syrup is made in North America but not everyone who makes maple syrup speaks the same language. In the United States most maple producers speak English while in Canada maple producers speak French, English or both. See if you can learn to speak and write both.

<table>
<thead>
<tr>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Say the number/ Spell the number</td>
<td>Say the number/ Spell the number</td>
</tr>
<tr>
<td>1. One</td>
<td>Un</td>
</tr>
<tr>
<td>2. Two</td>
<td>Deux</td>
</tr>
<tr>
<td>3. Three</td>
<td>Trois</td>
</tr>
<tr>
<td>4. Four</td>
<td>Quatre</td>
</tr>
<tr>
<td>5. Five</td>
<td>Cinq</td>
</tr>
<tr>
<td>6. Six</td>
<td>Six</td>
</tr>
<tr>
<td>7. Seven</td>
<td>Sept</td>
</tr>
<tr>
<td>8. Eight</td>
<td>Huit</td>
</tr>
<tr>
<td>9. Nine</td>
<td>Neuf</td>
</tr>
<tr>
<td>10. Ten</td>
<td>Dix</td>
</tr>
</tbody>
</table>

Quebec is the only place where more maple producers speak French than English.

The gray shading on the map shows where sugar maples grow, they only grow in the southern half of Quebec.
A maple tree grows by adding a new ring of wood each year. By counting the rings we can tell how old a tree is. How old are these trees?

This tree is too young to tap. How many growth rings does it have? ____

This tree is still too small to tap. How many growth rings does it have? ____

Turn to the back of this page when this side is finished
This tree is just big enough to tap for the first time, 10” in diameter. How many rings does this tree have? _____. How many years old is it? _____.

It takes many years for a maple tree to grow big enough to tap, usually 25 to 70 years, less years where it gets lots of sun, more years where crowded by other trees.
Across
1. I have fun when I __________
3. What I say when I meet someone __________
4. When I get maple candy I take a __________
5. I like to run __________ in a sugarhouse
8. When it rains the trees get __________
10. You collect sap in a sugar __________
11. Boiling syrup is very __________
12. The trunk of the tree is __________
13. I eat maple ice cream with a __________
16. A spout or __________ is placed into the tap hole
17. Sap comes from a __________
19. Pancakes with syrup I eat with a __________

Down
2. Sap is made up mostly of __________
6. Maple cream tastes so very __________
7. When the maple season starts, the woods are full of __________
9. Making maple syrup is hard work not __________
14. You can collect sap with a __________
15. Sap comes out of the tap __________
17. Sap is stored in a big __________
18. The sun makes a maple tree __________
20. Maple syrup is great to __________

Word Bank
Easy, Water, Hello, Horses, Tank, Pail, Play, Fork, Spile, Good, Snow, Bite, Bush, Round, Hot, Grow, Hole, Tree, Spoon, Wet, Eat, Around
Maple Words

Circle the words from the list as you find them in the puzzle.

Maple  Trees  Butter
Spoon  Farm  Soil
Cake  Sugarhouse  Woods
Old  Money  Tap
Hike  Ate  Bush
Steam  Cotton  Snow
Jug  Pan  Gallon
Cook  Snack  Tubing
Green  Eat

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Maple Geography

Maple syrup is made only in North America. It is made in some of the states of the United States and in several provinces of Canada. Draw a line from the state symbol on the map to the name of the state or province.

New York Vermont New Brunswick Maine Ohio

In the United States Vermont makes the most syrup followed by New York second and Maine third. In Canada Quebec makes more maple syrup than all the other states and provinces combined.
Maple Geography

Maple syrup is made only in North America. It is made mostly around the area of the Great Lakes, St. Lawrence River and the Atlantic Ocean. Draw a line connecting the Lake, the River and the Ocean to the correct name.

Lake Superior
St. Lawrence River
Lake Huron
Lake Michigan
Lake Erie
Lake Ontario

Sugar maple trees grow best where it is cold in the winter and plenty of rain in the summer. They do not grow well where it is either too hot or too dry.
In the 1700s and 1800s maple sap was usually boiled outside in large cast iron kettles hung over a wood fire. The whole family would be involved in collecting firewood and gathering sap. Usually the sap was boiled to make granulated maple sugar rather than the maple syrup common today.

Questions from the story and picture
1. Boiling sap takes a lot of heat, the fuel used to boil sap was ________.
2. Instead of making maple syrup from sap the early settlers made the sap into ________.
3. The sap was usually boiled in large kettles made of cast ________.
4. Today maple sap is usually boiled in a sugar house, back then it was boiled ________.
Maple Production in History – Gathering Sap

In the 1700s and 1800s maple sap was collected in wooden buckets. Gathering the sap was done by hand where the buckets full of sap were carried to the boiling kettles. At times a yoke was used to make the trip easier. If the sugar maples were too far away, sap was poured into a gathering tank that was mounted on a sled pulled by horses or oxen.

Questions from the story and picture:
1. As the sap came from the tree it was collected in ________ buckets.
2. A sled mounted with a gathering tank would be pulled by horses or ________.
3. A maple producer could carry buckets of sap more easily if they used a ________.
4. If the sugar maples were not too far away the _____ would be carried by hand in buckets to the boiling kettles.
Maple Letters

Match the letters to the numbers to complete the secret message!

MAPLE _____ ARE _____ IN FEBRUARY OR
20 18 5 5 19
20 1 16 16 5 4

_____ BY _____ A _____ _____ IN THE
13 1 18 3 8 4 12 12 9 14 7 19 13 1 12 12 8 15 12 5

_____. TREES WILL _____ 1, 2 OR 3 _____ Holes
20 18 5 5
8 1 22 5 20 1 16

_____ ON THE TREE _____ A _____ OR
4 5 16 14 4 9 14 7
19 9 26 5 19 16 9 12 5

_____ IS PUT ____ THE TAP HOLE. SPOUTS _____
19 16 15 21 20 9 14
8 1 22 5

EITHER _____ OR _____ TUBING ATTACHED
2 21 3 11 5 20 19
16 12 1 19 20 9 3

TO _____ THE SAP. SAP WILL _____ EACH _____
3 15 12 12 5 3 20
18 21 14
20 9 13 5

THE TEMPERATURE _____ BELOW _____
4 18 15 16 19 6 18 5 5 26 9 14 7

FOLLOWED BY A _____. SPOUTS ARE REMOVED
20 8 1 23

AT THE ____ OF THE SYRUP _____
5 14 4 19 5 1 19 15 14

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Maple Math - Addition

Add the numbers to find the letters that spell a tasty maple treat.

\[
\begin{array}{cccc}
8 & 5 & 6 & 1 \\
+2 & +6 & +9 & +2 \\
____ & ____ & ____ & ____ \\
Y & M & P & T
\end{array}
\]

\[
\begin{array}{cccc}
3 & 5 & 11 & 8 \\
+4 & +3 & +12 & +9 \\
____ & ____ & ____ & ____ \\
A & B & E & N
\end{array}
\]

\[
\begin{array}{cccc}
7 & 14 & 21 & 12 \\
+9 & +6 & +6 & +6 \\
____ & ____ & ____ & ____ \\
C & F & K & O
\end{array}
\]

\[
\begin{array}{cccc}
5 & 17 & 21 & 8 \\
+4 & +7 & +10 & +4 \\
____ & ____ & ____ & ____ \\
R & W & L & D
\end{array}
\]

11 7 15 31 23 16 18 3 3 18 17 16 7 17 12 10
Maple Spelling Words

<table>
<thead>
<tr>
<th>Say the word</th>
<th>Write the word</th>
<th>Use the word</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maple</td>
<td>_______________</td>
<td>I love maple syrup on pancakes.</td>
</tr>
<tr>
<td>2. Spoon</td>
<td>_______________</td>
<td>I use a spoon to put maple syrup on my ice cream.</td>
</tr>
<tr>
<td>3. Steam</td>
<td>_______________</td>
<td>When maple syrup is cooking it makes a lot of steam.</td>
</tr>
<tr>
<td>4. Tree</td>
<td>_______________</td>
<td>Maple syrup is made from sap that comes from the maple tree.</td>
</tr>
<tr>
<td>5. Green</td>
<td>_______________</td>
<td>A sugar maple tree has green leaves in the spring and summer.</td>
</tr>
<tr>
<td>6. Hike</td>
<td>_______________</td>
<td>It is great fun to hike through the sugarbush to watch sap running.</td>
</tr>
<tr>
<td>7. Jug</td>
<td>_______________</td>
<td>Maple syrup is often sold in a brown plastic jug.</td>
</tr>
<tr>
<td>8. Deer</td>
<td>_______________</td>
<td>Deer are a very common sight in the maple sugar bush.</td>
</tr>
<tr>
<td>9. Sap</td>
<td>_______________</td>
<td>It takes about 40 gallons of sap to make one gallon of syrup.</td>
</tr>
<tr>
<td>10. Leaf</td>
<td>_______________</td>
<td>A sugar maple leaf will usually turn yellow or orange in the fall.</td>
</tr>
<tr>
<td>11. Drill</td>
<td>_______________</td>
<td>A power drill is used to make the tap hole about 2 inches deep.</td>
</tr>
<tr>
<td>12. Pan</td>
<td>_______________</td>
<td>Sap is boiled in a syrup pan called an evaporator.</td>
</tr>
<tr>
<td>13. Sugar</td>
<td>_______________</td>
<td>Maple sap is usually about 2% sugar, maple syrup is about 67%.</td>
</tr>
<tr>
<td>14. Snow</td>
<td>_______________</td>
<td>Snow helps keep the sugar bush cool during the maple season.</td>
</tr>
<tr>
<td>15. Bush</td>
<td>_______________</td>
<td>A sugar bush is a forest with maple trees used to make maple syrup.</td>
</tr>
</tbody>
</table>

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Maple sap will flow from a taphole any time the temperature drops below freezing then warms up to above freezing again. Based on the high and low temperatures listed for each day, cross out the days when the sap did not run. To run the low temperature must be less than 32° F and the high above 32° F.

**April 2013 Calendar**

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Low 28° F High 30° F</td>
<td>Low 23° F High 31° F</td>
<td>Low 31° F High 40° F</td>
<td>Low 42° F High 50° F</td>
<td>Low 55° F High 61° F</td>
<td>Low 33° F High 38° F</td>
</tr>
<tr>
<td>7</td>
<td>Low 28° F High 31° F</td>
<td>Low 27° F High 36° F</td>
<td>Low 29° F High 39° F</td>
<td>Low 30° F High 44° F</td>
<td>Low 28° F High 45° F</td>
<td>Low 31° F High 50° F</td>
</tr>
<tr>
<td>8</td>
<td>Low 28° F High 50° F</td>
<td>Low 28° F High 58° F</td>
<td>Low 38° F High 41° F</td>
<td>Low 31° F High 44° F</td>
<td>Low 31° F High 45° F</td>
<td>Low 35° F High 56° F</td>
</tr>
<tr>
<td>9</td>
<td>Low 38° F High 50° F</td>
<td>Low 28° F High 58° F</td>
<td>Low 38° F High 41° F</td>
<td>Low 18° F High 30° F</td>
<td>Low 22° F High 31° F</td>
<td>Low 31° F High 39° F</td>
</tr>
<tr>
<td>10</td>
<td>Low 38° F High 49° F</td>
<td>Low 35° F High 57° F</td>
<td>Low 34° F High 50° F</td>
<td>Low 39° F High 60° F</td>
<td>Low 37° F High 52° F</td>
<td>Low 44° F High 49° F</td>
</tr>
<tr>
<td>11</td>
<td>Low 41° F High 49° F</td>
<td>Low 51° F High 71° F</td>
<td>Low 48° F High 74° F</td>
<td>Low 48° F High 74° F</td>
<td>Low 45° F High 53° F</td>
<td>Low 45° F High 53° F</td>
</tr>
</tbody>
</table>

**How many days did the sap run? _____**
Each spring a hole, called a tap, is drilled in a maple tree. When it warms up after a freeze, sap will run out of the hole into a pail or a tube to be collected for making maple syrup. Sap has some sugar in it but it is not very sweet.

Unscramble the words below shown in bold above then use The second column to put them in alphabetical order.

1. Meso ______ 1. ______
2. Ton _____ 2. ______
3. Etbu _____ 3. ______
4. Ringps ______ 4. ______
5. Lohe _____ 5. ______
6. Rete _____ 6. ______
7. Nur ____ 7. ______
8. Rugas_______ 8. ______
9. Apil _____ 9. ______
10. Pat ____ 10. ______
11. Pas ____ 11. ______
12. Ewtes_______ 12. ______
13. Rysup ______ 13. ______
14. Mepal ______ 14. ______
15. Swarm ______ 15. ______