

# **Maple Magic Lesson Plans**

**Grade 2**

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## **Maple Magic WebQuest**

Lesson #1—Prior to Field Trip

By Rachel Lockhart & Emily TenBarge

Class: 2nd grade inclusion

Subject/ Content: Science

**Standards:** Standard 3: Life Science

- 2.3.1 Observe closely over a period of time and then record in pictures and words the changes in plants and animals throughout their life cycles- including details of their body plan, structure and timing of growth, reproduction and death.
- 2.3.2 Compare and contrast details of body plans and structures within the life cycles of plants and animals

### **Materials:**

#### **Teacher:**

- Access to a computer lab
- Webquest site: [www.zunal.com/webquest.php?w=107580](http://www.zunal.com/webquest.php?w=107580); Webquest name: “Maple Magic”

#### **Student:**

- Computer
- Printer or printout of the Maple Magic worksheet
- Pencils for each student
- Tag board or poster board for final project
- Crayons or colored pencils
- Paper for report

### **Objectives:**

- After completion of the Webquest, students will be able to name 4 products made from a maple tree with 90% accuracy.

- When given Maple Magic handout, students will be able to complete the worksheet with 90% accuracy.
- After completion of the activity, students will be able to present a report and draw a picture to represent a product made from a maple tree with 90% accuracy in alignment with the rubric.

**Accommodations/Modifications:**

- Students will be placed into pairs according to their ability levels. Higher achieving students will be paired with lower achieving students. The highest and lowest achieving students will not be placed together.

**Lesson Focus:**

- **Attention Grabber:**

“What do maple trees do for us? Can they make our breakfast better? Make our sports better? Can they help us sleep at night? You are going to find out! We are going to the computer lab to go on a Maple Magic Webquest!”

- **Importance/Relevance of skill:**

Trees are all around us. Many of them are maple trees. Maple trees have many uses for everyday life.

- **Review of relevant rules:**

Respect, by listening and not talking, should be given to the teacher during the instruction portion of the lesson. Students should raise hands and wait to be called on if you have any questions while in the computer lab. Students will be paired according to the teacher. Students are to work cooperatively with their partner.

- **Primed background knowledge:**

Students are familiar with trees and may or may not realize that many are maple trees.

- **Judicious review:**

The review at the beginning of the lesson will include the vocabulary words necessary for understanding and completing this assignment. The words include: maple trees, sap, parts of the tree, including trunk, leaves, roots and branches. Discuss some products made from trees: paper and any object made from wood.

### **Lesson presentation:**

- **Explanation of skill:**  
I will explain to the students that they are going to complete a Webquest with a partner.
- **Model/demonstration of how to perform skill:**  
No demonstration needed. All information and instructions are included in the Webquest

### **Guided Practice:**

- No guided practice needed.

### **Independent Practice:**

- Students will complete the Maple Magic Webquest and complete the final project per the instructions in the Webquest.

### **Assessment:**

- Students will be assessed on their completed worksheets and their group's final project. The rubric is included in the Webquest.

### **Closure:**

- The class will discuss the products displayed from the groups. Ask "Did anyone see anything else that the maple tree can provide that was not presented?" Ask "What was your favorite product?" Explain to the class that the tomorrow's lesson will cover the maple tree through the seasons.

## 4 Seasons Grid- Maple Magic

Lesson #2-Prior to Field Trip

By Rachel Lockhart & Emily TenBarge

Class: 2<sup>nd</sup> Grade

Subject/ Content: Science

### **Standards:**

- Science 2.3.1  
Observe closely over a period of time and then record in pictures and words the changes in plants and animals throughout their life cycles-including details of their body plan, structure and timing of growth, reproduction and death.
- Language Arts 2.2.7  
Interpret information from diagrams, charts, and graphs.
- Language Arts 2.5.1  
Write brief narratives based on experiences that:
  - move through a logical sequence of events (chronological order, order of importance).
  - describe the setting, characters, objects, and events in detail.

### **Materials:**

- Teacher:
  - Sample grid paper
  - Markers
  - Ruler
  - Pictures of a maple tree during each season (spring, summer, winter, fall)
  - Pencil
  - Books for extension and A Tree for All Seasons
- Student:
  - Grid paper
  - Markers
  - Ruler
  - Pencil
  - Notebook paper

### **Objectives:**

- Students will be able to identify a maple tree during all four seasons of the year.

- Students will understand the changes that maple trees make throughout the year.
- After completion of the charts and writings, students will be able to determine when sap can be produced from the trees.

### **Activities/ Procedures:**

- **Attention Grabber:**

Greet students and ask them what the four seasons are. Ask them what season we are currently in. What are some things that go along with the seasons? Ex: Spring and rain, winter and snow, fall and leaves changing colors, etc.

- **Importance/ Relevance of skill:**

We are exposed to weather and climate changes every day. The seasons greatly impact what the weather is and how the surroundings in nature look. We will investigate the changes in maple trees throughout each season and recognize when maple trees are ready to be tapped.

- **Review of Relevant Rules:**

Respecting the teacher and classmates is done by raising your hand and waiting to be called on, listening and not talking aloud, and waiting for directions before taking action. Using the art materials is a privilege and will be taken away if any unnecessary play is taking place. Once the grids are complete, the work areas can be cleaned and the art materials can be put away.

- **Primed Background Knowledge:**

The Maple Magic Webquest will be completed and students will be able to recognize the characteristics and uses of the maple tree.

- **Judicious Review:**

Vocabulary words that will be reviewed during this lesson include: season, maple tree, season grid, sap.

### **Lesson Presentation:**

- **Explanation of Skill:**

I will explain that students will be making their own season grid of a maple tree. They must write a detailed summary for every season explaining characteristics of the maple tree. The students will sit as a class and listen to the book, A Tree for All Seasons.

- **Model/demonstration of how to perform skill:**

I will have a completed sample grid for students to view before they begin. The model will be on display throughout the activity for reference. Students will receive paper and will be instructed to fold it in half and then in another half to make four sections. Using a ruler, students can then draw a line down each fold to divide the paper in four equal sections. The students will then be instructed to label each section with a season. This can be written in marker at the bottom of each section. The upper left being winter, the upper right being spring, the lower left being summer, and the lower right being autumn (fall).

**Guided Practice:**

I will have pictures of the tree during each season posted for students. They can view these to come up with ideas on how they want to illustrate the tree during every season. They students will need to understand that each picture will look different because the tree looks different throughout the year.

**Independent Practice:**

Students will complete the grid by drawing illustrations of the tree during each season. They will then write a brief summary of the tree and its characteristics during each season. This can be written on a separate piece of paper and then attached to the back once the illustrations are complete.

**Assessment:**

The assessment for this lesson will include completion of the grid and writing for every season. Asking questions such as ‘*What does a maple tree look like in the winter?*’ will help determine their understanding of the concept of tree changes throughout the year.

**Extention Activities:**

I will have books available for students to look at. They can read the books and collect additional information from them. These will include:

- A Tree for All Seasons
- Why Do Leaves Change Color?
- A Tree Is a Plant
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**Students with Disabilities:**

Accommodations for this lesson can be made with students who have disabilities. Assistance can be given when folding and writing on the grid. Books can be passed around so all students can see the pictures.

**Closure:**

Students will present their grids to the class and read their explanations. We will then determine, as a class, that sap is collected from trees in the winter around February and March. Students have gained knowledge about the four seasons and what maple trees look like during each one. After this lesson is complete, students will visit Wesselman's Nature Center for a trip and learn how to tap a maple tree. They will watch maple syrup being made and get to taste the syrup that has been produced.

## **Tapping a Maple Tree- Maple Magic**

Lesson #3—After Field Trip

Rachel Lockhart & Emily TenBarge

Class: 2<sup>nd</sup> Grade

Subject/ Content: Science

### **Standards:**

- Science 2.4.2  
Identify technologies developed by humans to meet human needs. Investigate the limitations of technologies and how they have improved quality of life.
- Science 2.4.3  
Identify a need and design a simple tool to meet that need.

### **Materials:**

- Teacher:
  - Sample tree made of brown construction paper
  - Ziploc bag
  - Foil
  - Tin pan
  - Tape
  - Bucket
  - Books for additional information
  - Steps for Making Maple Syrup (can be found online at [Pittsburgh.about.com](http://Pittsburgh.about.com))
- Student:
  - Brown construction paper
  - Ziploc bag
  - Foil
  - Tin pan
  - Bucket
  - Tape

### **Objectives:**

- Students will be able to demonstrate how to properly tap a tree for sap.
- Students will understand that trees cannot be tapped for sap all year round

- After completion of the demonstration, students will be able to determine the appropriate technology it takes to tap a maple tree.

### **Activities/ Procedures:**

- **Attention Grabber:**

Greet students and ask them what they like to put on pancakes. Ask them where syrup comes from? (They will know the answer since they have been on the field trip to Wesselman's Woods)

- **Importance/ Relevance of skill:**

Technology and tools surround the world around us. Some simple things, such as maple syrup, are produced and can be produced much closer than expected. The skill of tapping a maple tree will help students with the understanding of where their food actually comes from. This may help with environmental awareness and community protection.

- **Review of Relevant Rules:**

Respecting the teacher and classmates is done by raising your hand and waiting to be called on, listening and not talking aloud, and waiting for directions before taking action. Using the materials is a privilege and if the tools are using in inappropriate ways, they will be removed from the class. Once the trees and materials are made and ready, the areas must be cleaned up so the presentations can begin.

- **Primed Background Knowledge:**

The Maple Magic field trip will be taken before this lesson. The students will have seen the process and tasted the syrup from Wesselman's Woods.

- **Judicious Review:**

Vocabulary words that will be reviewed during this lesson include: sap, syrup, sugar bush, and tap

### **Lesson Presentation:**

- **Explanation of Skill:**

I will explain that students will be making their own model of tapping a maple tree. Students will be divided in groups of 4-5. They will be required to re-create the tapping that they have seen on the field trip. The book, Ininatig's Gift of Sugar, will be read and discussed as a class.

- **Model/demonstration of how to perform skill:**

I will have a completed sample tree for students to view before they begin. The model will be on display throughout the activity for reference. Students will receive paper and will be instructed roll it, making it look like a miniature tree trunk. Using foil, students will then form a tap that can be used to “tap” the tree. The bag and pan are used for collection of sap. Each student will choose a different role in tapping the tree. The roles will include: placing tap on tree, placing bag under tap, moving bucket to catch additional sap, and taking sap to be boiled into syrup.

**Guided Practice:**

I will have a completed tree and tap set up in the room so students can go that the model for guidance.

**Independent Practice:**

Students will work as a group to determine roles and develop their tree set up. They will understand that their models will not be set to scale and are used to represent the different steps in tapping a maple tree. Once the models are made, the students will take their roles and explain them to the guests in the room (grandparents) so they can visually understand how to tap the maple tree for sap.

**Assessment:**

The assessment for this lesson will include the model they have created and the presentation they give for the grandparents. Each student must work together as a group to create a successful project.

**Extention Activities:**

I will have books available for students to look at. They can read the books and collect additional information from them. These will include:

- Ininatig’s Gift of Sugar
- A Tree Is a Plant
- A First Look At Leaves
- The Tree Book
- Sticky Trees
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**Students with Disabilities:**

Accommodations for this lesson can be made with students who have disabilities. Assistance can be given when creating the model trees. Books can be passed around so all students can see the pictures.

**Closure:**

Students will present their models and will explain each step. They will determine the simple tools that are used to create syrup for us to enjoy. Students will recognize the simple tools and the uses they have in the community. After this lesson is complete, students will complete the Home/School Connection activity. They will be comparing prices, tastes, textures, and smells of syrups that are store bought and syrup that is made at Wesselman's Woods.