

## FUN FACES OF WISCONSIN AGRICULTURE RING AROUND THE TREE



### **Activity Length:**

This Business Called Agriculture Activity- 20 minutes

How does your tree grow? – 30 minutes

Tree Ring and Student Timeline Comparison – 20 minutes

Christmas Tree Research Worksheet- 60 minutes (30 interviewing, 30 compiling data)

Christmas Tree Math Lesson – 30 minutes

### **Student Objectives:**

1. Learn the steps necessary in Christmas tree production
2. Explore the way trees grow and how to tell the age of a tree by its rings
3. Create a “tree-ring timeline” of the student’s life

### **Wisconsin Model Academic Standards:**

|                |       |       |       |       |
|----------------|-------|-------|-------|-------|
| English        | A.4.4 | C.4.1 | C.4.2 | D.4.1 |
| Math           | A.4.1 | B.4.5 | D.4.2 |       |
| Science        | A.4.1 | C.4.1 | E.4.8 |       |
| Social Studies | B4.2  |       |       |       |

### **Introduction: Freddy Fir’s Christmas Tree Fast Facts**

### **Additional Information available at:**

Wisconsin Christmas Tree Producers Association ([www.christmastrees-wi.org](http://www.christmastrees-wi.org))

National Christmas Tree Association (<http://www.christmastree.org/home.cfm>)

University of Illinois Extension (<http://www.urbanext.uiuc.edu/trees/education.html>)

Real Trees 4 Kids – ([www.realtrees4kids.org](http://www.realtrees4kids.org))

### **Important Terms:**

- Tree ring: A growth ring produced annually which assists in giving an indication of the environment and growing conditions the tree has experienced.
- Dendrochronologist: Scientist who studies the growth of rings in trees
- Stem: Young stems are made of xylem, phloem and cambium layers. The stem gives support and is also called the trunk.
- Phloem: Carry dissolved food and nutrients throughout the plant. Conducting tissue for photosynthesis.
- Cambium: Place of growth in the tree stem located between the inner bark and the wood of the tree.
- Xylem: New cells are produced each year. Gives support and transports water and nutrients upward in the plant. As xylem clog up over time, they become heartwood and help make up the cells we see as rings.
- Conifer: A gymnosperm which bears cones.

- Gymnosperm: Identifies trees usually known as softwoods or evergreens. Christmas trees are normally gymnosperms.
- Cone: seed bearing structure of certain gymnosperms.
- Evergreen: Retains at least some leaves through the fall and winter.

**Materials for this activity:**

- This Business Called Agriculture – from the Wisconsin Agribusiness Council
- Several cross sections of cut trees for students to view. Ask students who may have parents that cut wood for samples.
- Paper or poster board

**Lesson Outline:**

This Business Called Agriculture Activity

*Students will be able to create a timeline for Christmas tree production utilizing This Business Called Agriculture.*

1. Have students read page 27 (Wisconsin Crops) and individually complete the timeline at the bottom of the page.
2. When all students are finished, go over the correct timeline as a class discussing the importance of each step.

***Answers to the activity on page 27***

January-March: Planning, Ordering

April-June: Prepare Field for Planting; Dig trees to put in people's lawns

July-September: Fertilized; Protected from weeds, insects and animals; Shearing; Irrigate

September-December: Tagged; Cut; Shook; Baled; shipped and sold

**How does your tree grow?**

*Students will explore the signs about tree growth that are shown in a tree ring*

1. Visit (<http://www.realtrees4kids.org/sixeight/stemsrings.htm>) for background information.
2. Review the parts of a tree's stems and rings. Discuss differences in a young tree cross-section to an older tree cross-section. Identify the stem, phloem, cambium, xylem and any other parts of the cross-section.
3. Ask how many students have seen the inside of a tree trunk. Show a picture or the actual tree trunk cross section to the class. Try to determine the age of a tree by counting them and discuss variation in the rings.
4. Reasons for larger rings: longer growing season year, adequate fertilizer, abundant rainfall, and other good growing conditions.
5. Reasons for smaller rings: little rain, poor care, lower springtime temperature, shorter growing season, crowding from neighboring trees, and other poor growing conditions.

6. Reasons for variation in rings: Different shaped rings may show when something was pressed against the tree, dips in the rings show when something was inserted into the tree (maple sap spigot), different species react differently to growing conditions, narrow on one side and wide on the other indicates crowding of the tree on the narrow side, narrow rings followed by large rings indicate that an encroaching tree died and then the affected tree had a growth spurt, and climate changes. Trees also can show fires and floods by changing the way that the rings grow.

### Tree Ring and Student Timeline Comparison

*This activity will allow students to create their own version of a tree ring timeline compared to events in their lives.*

1. Distribute large pieces of paper to students and instruct them to create their own tree ring timeline of their life.
2. Remind them that the counting starts at the middle ring when the tree was youngest. Encourage them to vary their rings on years when they grew the most or to have dips on years that they broke a bone...
3. Require that they mark at least five important events from their life (moving to a new house, birth of a sibling, fun family vacation...) on their tree ring and then encourage them to decorate it creatively (use real bark or ripped paper for the outside of the tree, put leaves on the paper to decorate...)
4. Share with a partner their tree-ring timeline and then display the class timelines around the room.

### Christmas Tree Research Project

*This activity will give students an opportunity to interview people, collect data, and use the data to calculate percentages and make various types of graphs.*

1. Distribute copies of the Christmas Tree Research Worksheet to students.
2. They can survey other students, family members, school staff or friends. They should interview 25 people.
3. Review how to calculate percentages and the various types of graphs.
4. Students will analyze their data and complete the worksheet.
5. Students can give summaries of their data to the class.

### Christmas Tree Math Lesson

1. Distribute Christmas Tree Math Worksheet as a classroom activity or a homework assignment

### **Suggested Reading Materials:**

- "O Christmas Tree" listing of recommended Christmas tree children's books. List can be found at ([www.christmastrees-wi.org](http://www.christmastrees-wi.org)) and click on Teachers.

- *The Wonderful World of Christmas Tree*. Mid-Prairie Books

**Additional Worksheets:**

Careers Guide related to Christmas Trees  
Christmas Tree Research Worksheet

**Related activities:**

- For an extended project, encourage students to research one of the following five kinds of Christmas Trees that are grown in Wisconsin (Balsam Fir, Fraser Fir, Scotch Pine, White Pine and Spruce including White, Black Hills, and Colorado Blue.) Students can create a poster with needles, pictures and information to use as a “sales brochure”.
- Grow Your Own “Tree” in a Pine Cone Activity (page 12) in the Christmas Tree Fun For Children- available from Wisconsin Christmas Tree Producers Association ([www.christmastrees-wi.org](http://www.christmastrees-wi.org)).