

“A Tree-rif-ic Math Activity”

Standards Addressed

Environmental Education Standard:

A. Questioning and Analysis: A.4.2.

Science Education Standards:

A. Science Connections: A.4.2, A.4.3, and A.4.4.

Key Concepts/Content

- 🌲 To increase student understanding of systems in nature.
- 🌲 To increase student awareness of change in systems.
- 🌲 To understand that plants/trees are both alike and different.
- 🌲 To apply student mathematics skills using data to real-life situations.

Teacher Background

On Veteran’s Day, November 11, 1999, our nation’s tree, “The Millennium Tree,” will be cut in northern Wisconsin and then travel to Washington, DC, to be a part of the nation’s holiday celebration. This activity is designed to be a comparative study of a classroom tree to the Millennium Tree. To find out more details about the Millennium Tree, go to the tree website listed in the references at the end of the activity.

Getting Ready

Read a news release about our state’s Millennium Tree to students. Discuss how this is an honor for all Wisconsin. Ask students to think about what criteria they’ve used when obtaining an indoor or outdoor tree for their home. Then ask students to think about how their list of criteria might be similar to that used when selecting the Millennium Tree. You will want to have an indoor classroom tree or an outside tree for this activity.

Materials Needed

- ✦ Make copies of journal pages (see Appendix)
NOTE: Throughout this curriculum, many activities will involve entries into a student journal.
- ✦ Classroom tree or an outside tree (pine tree might be easiest for this activity)
- ✦ Tape measures
- ✦ Access to the Internet
- ✦ *Wisconsin Forest Statistics*
- ✦ News Release

Procedures

1. Determine the approximate age of your classroom tree, by counting the rings from the center of the tree to the outside edge. If a pine tree, count the branches up the tree for a guess at the tree's age. Have the students guess or estimate the tree's age. (Details for finding the approximate age of a tree are found on the Millennium Tree website, listed in the reference part of the activity.) Find out how old the "Millennium Tree" is; the data on the tree are found on the website. What is the age difference between the class tree and the Millennium Tree?
2. Measure the distance between the internodes (branch whorls) (definition found on the website) to determine the classroom tree's average annual height growth.
3. Cut a clean cross section near the base of the tree. Measure the tree's lateral (diameter) growth. Divide the diameter by the number of rings. Using the Millennium Tree website, see if you can find out how your tree's annual lateral growth compares to that of the Millennium Tree.
4. Calculate the height of the classroom tree (see pages 31-33). How many times taller is the Millennium Tree? (Note: The Millennium Tree is 70 feet tall.)
5. The Millennium Tree is a white spruce tree. What type of tree is the classroom tree? If your tree is not a white spruce, answer the following questions: How are the two tree types similar? How are the two tree types different? See booklet *Forest Trees of Wisconsin*.

6. Estimate the circumference of your classroom tree in inches or centimeters. Then measure the circumference of the tree using a sewing tape or piece of string. Compare the circumference of your tree to that of the Millennium Tree.
7. Create additional math problems about the classroom tree and/or the Millennium Tree. Or ask students to develop other math problems.
8. Extension Ideas: Math Quiz Activity Sheet.

Evidence of Student Understanding

Create a Venn Diagram (a venn diagram is a diagram that shows relationships of one object to another and is typically used in math relationships) on your journal page, showing the similarities and differences between the classroom tree and the Millennium Tree.

References/ Resources

 <http://www.millenniumtree.org>

 *Wisconsin Forest Statistics*

<http://www.dnr.state.wi.us/org/land/forestry/Look/highlights1996.htm>

or

<http://www.srsfia.usfs.msstate.edu/ewdata/ewrec.htm>

 A pamphlet, *A Look at Wisconsin's Forests*

Published by the Wisconsin Department of Natural Resources, Bureau of Forestry, Box 7921, Madison, WI 53707.



The Millennium Tree
Wisconsin's Gift to the Nation



A Tree-rif-ic Math Activity

Millennium Tree News Release—Just For Kids

On November 11, Veterans Day, the Millennium Tree will be cut near Rhinelander, Wisconsin. The North Central Research Station is proud to provide the tree for our Nation's Capitol. This is the first Millennium Tree ever in America! It is also the first tree to ever be chosen from Forest Service Research, by the Landscape Architect of the Capitol – Matthew Evans. The tree was selected for its deep green color, fullness, and shape.

The tree is a white spruce (*Abies glauca*) and stands 70 feet tall — the tallest national tree ever! To prevent damage to the tree, a crane will hold it upright and gently place it in a cradle for wrapping. It takes two days to wrap the tree and prepare it for travel because it is wider than a two-lane road. If the temperature is below freezing, the tree will be moved inside to a warm place so the branches can be bent for wrapping.

Once the wrappers have finished, the tree will be placed on a special truck with a watering system to keep the tree from drying out. The truck also has special sideboards where the people of Wisconsin can sign their names and seasons greetings to the people of America. The Millennium Tree will stop in many towns and cities in Wisconsin until it reaches Milwaukee on Saturday, November 27.

Governor and Mrs. Thompson will send the tree to Washington, DC on a special Amtrak train. It will take two days to arrive in Washington where it will formally be given to the Speaker of the House, Dennis Hastert from all of the people of Wisconsin.

The tree will stand on the west slope of the Capitol overlooking the Washington Mall and Monument. Over 10,000 lights and 5,000 hand crafted ornaments made by the citizens of Wisconsin will adorn the tree. Then on Tuesday, December 7 at about 6:30 Wisconsin time, the tree will be lit as a shining beacon of hope for the new Millennium — “Wisconsin's Gift to the Nation”.



A Fun Math Test About Wisconsin's Forests

Guess first and then look up the answers on the Millennium Tree web page — <http://www.millenniumtree.org>

1. What percent of the land in Wisconsin is forested?

- a. 13%
- b. 71%
- c. 46%
- d. 25%

2. Who owns Wisconsin's Forest?

Match the correct percentage with each group.

Choose from a.) 57% b.) 5% c.) 15% d.) 9% e.) 11%

State Forests

County and Municipal Forests

National Forests

Forest Industry and Corporations

Private Individuals (Farmers, landowners etc.)

3. The first forest inventory of Wisconsin was in 1936 and the most recent in 1996.

Does Wisconsin have less forest land in 1996 than in 1936?

Yes or

No

4. The oldest trees in Wisconsin, on average, outside of parks and protected refuges, are about how old?

- a. 300 years
- b. 125 years
- c. 50 years

