

Tree Rings

Standards Addressed

Environmental Education Standards:

- A. Questioning and Analysis: A.4.2, A.4.3, and A.4.4.
- C. Environmental Issue Investigation Skills: C.4.2.
- D. Decision and Action Skills: D.4.1.

Science Education Standards:

- A. Science Connections: A.4.1, A.4.2, A.4.3, and A.4.5.
- C. Science Inquiry: C.4.1, C.4.2, and C.4.7.
- F. Life and Environmental Science: F.4.1, F.4.2, F.4.3, and F.4.4.

Key Concepts/Content

- 🌲 To determine a tree's age from its rings.
- 🌲 To identify the student's birth year and other significant dates in his/her life on the tree's rings.
- 🌲 To identify other significant historical dates by placing them in appropriate locations on the tree's rings.
- 🌲 To identify what occurred in the tree's life cycle such as fire, insect attack, or drought in comparison to the student's own, or in comparison to dates placed upon the rings.
- 🌲 To question, analyze, and investigate those things that occurred within the tree's life and demonstrate decision-making skills using data, suggest alternatives, and predict alternatives.
- 🌲 To understand that every organism goes through a life cycle of growth, maturity, decline, and death while its role in the ecosystem changes.

Getting Ready

Students should know that a tree's age can be determined by its annual rings. Each ring has two parts: a wide, light part and a narrow, dark part.

Through observation of a real tree's rings, students should be able to identify changes that occurred during the tree's life and to determine the type of year, wet or dry, each ring represents.

- Materials Needed**
- ✦ Cross sections or increment bore cores from a variety of trees (contact a local forester for help: [http://www.dnr/state.wi.us/org/land/forestry/ftax/county.htm](http://www.dnr.state.wi.us/org/land/forestry/ftax/county.htm))
 - ✦ Copies of the student worksheet
 - ✦ Significant dates in the student's, Wisconsin's, or the nation's history
 - ✦ Ruler and pencil

- Procedures**
1. Review the kind of information that can be learned from a cross section of a tree.
 2. Hand out copies of the two-page activity pages of Reading Rings, adapted from *Ranger Rick's Nature Scope*, Volume 2, Number 1, National Wildlife Federation.
 3. Have students locate the four examples in Part 1 and place them on the tree ring page, Part 2.
 4. Have students count back on the rings to locate the year in which they were born and place it on the tree ring page.
 5. Continue placing other significant dates from the students' lives, and from the history of Wisconsin and the nation they may have researched or been assigned.

- Evidence of Student Understanding**
- Students should be able to recognize the evidence of fire, drought, insect attack, and dead branches on their line drawings.
 - Students should be able to correctly place their birth year and other significant years in their lives on the line drawing.
 - Students should be able to correctly place other significant dates on the line drawing as assigned by the teacher.

- Students should be able to identify years of greater or lesser precipitation, and hypothesize years in which things such as farming, forestry, insect attack, or growth would have been good or bad.

Resources

 RANGER RICK'S *NATURESCOPE*, Volume 2, Number 1, National Wildlife Federation, 1400 16th Street, NW, Washington, DC 20036-2266.

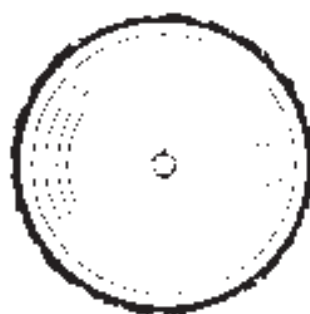
 Wisconsin Department of Natural Resources, *contact information*

 EEK-Environmental Education for Kids (<http://www.dnr.state.wi.us/eeek/>)

Activity Sheet

Tree Rings Part 1

If every condition was perfect a cross cut of a tree and its rings would look like this. However no ecosystem is perfectly in balance year after year.



1



A tree falls near a smaller tree or a building is too close to a growing tree.



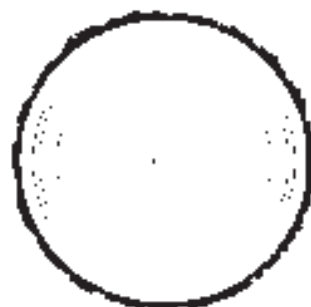
2



A forest fire damages a tree or insects lunch on it.



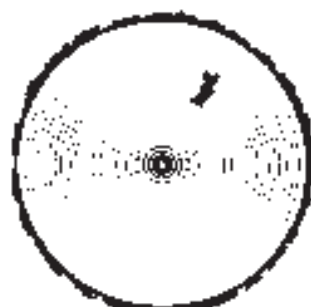
3



Summer droughts or more insects have munched away!



4



The tree loses a branch.



Activity Sheet

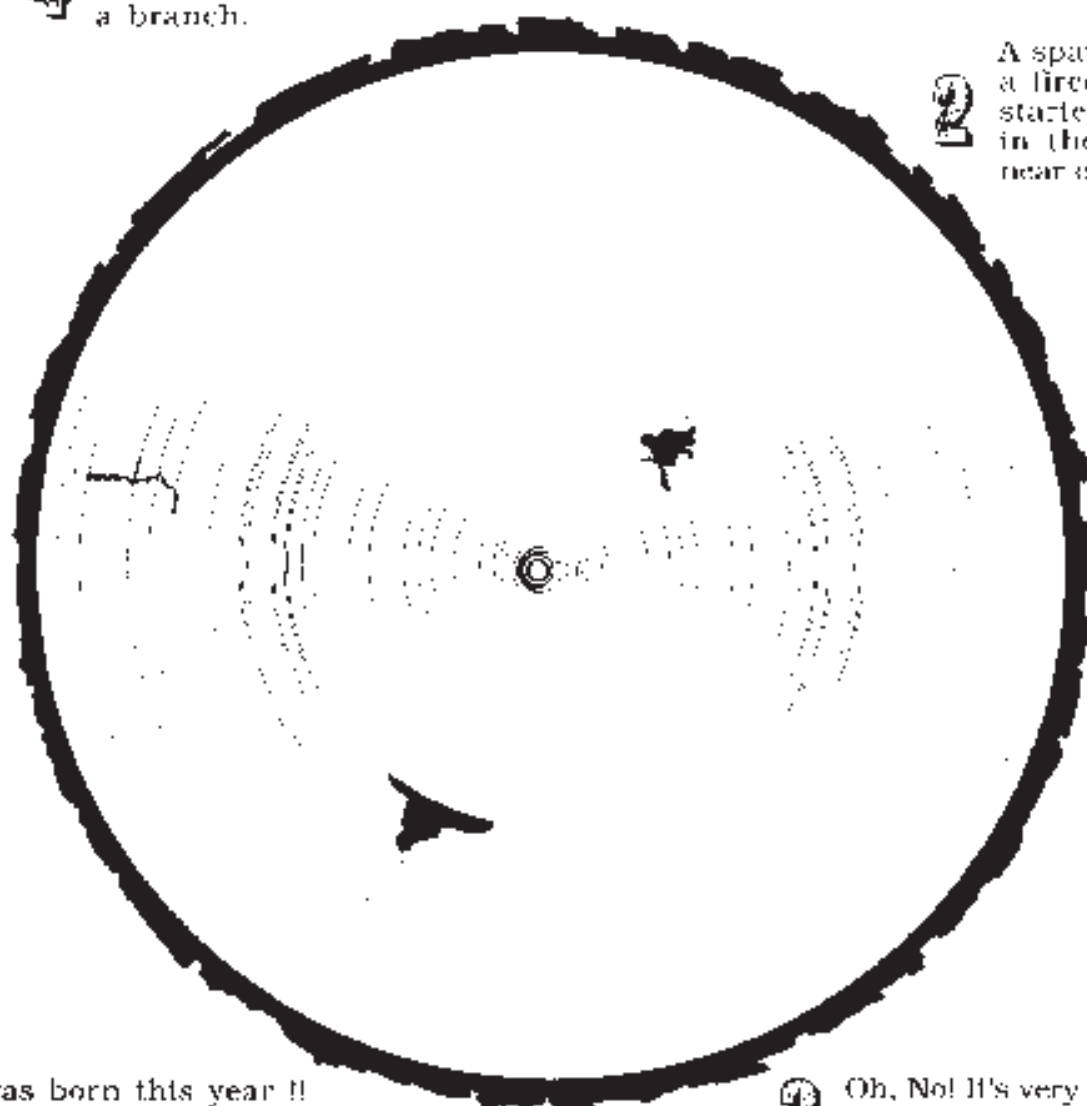
Tree Rings Part 2

Read and study the types of damage from Part 1.
Write the number on the drawing below that shows
the type of damages you see on this tree cross section.
If you need to draw pointers.

4 Lightning
breaks off
a branch.

3 Eight years
ago it was
very dry.

2 A spark from
a firecracker
started a fire
in the grass
near our tree.



I was born this year !!

My Mom's birth year
shown in the tree rings?

3 Oh, No! It's very dry and
hot and the insects
are back again!

2 Insects eat most
of the leaves off in
the spring.

1 A barn, which fell down,
used to be too close to this
tree when it was young.

