

TREES INSIDE AND OUT - Lesson Plan

Have students read the handout ([Parts of Tree](#)) before class.

View 'From the Forest' PowerPoint, anatomy of a tree (note: this includes a mnemonic for students.)

Tree Ring Exercise - Hand out simulated [tree "cookies"](#) and [Tree Ring Student Worksheets](#) for students to explore.

Have students locate bark, cambium, early or spring wood, late or summer wood and mark the oldest part of the ring.

Discuss the different ring widths and how growing conditions (temperature and precipitation) affect these.

Tell students these trees were cut at [Christmas 2010](#). These tree rings are similar age but have different growth patterns.

Ask and discuss these questions:

How old was the tree when it was cut? **20-25 yrs.**

How many years demonstrate better growing conditions? **Varies by sample**

How do the rings change if growing conditions were poor? **Tighter ring formation**

Which tree ring grew the year you were born? **Hint: You have to know the year a tree quit growing (i.e. was cut) to accurately date the tree rings.**

3 sample "cookies" have "flaws". Have students with these samples share with others.

View Tree Ring Extra PowerPoint for discussion

- Photo of burn scars dating back to 1652 based on tree ring research.
- Close up of burned tree scar formation. Sample "F" has damage that is scarring over.
- "E" shows a branch where the cross cut was made. Many branches of young trees are "choked off" by annual ring growth. A few branches continue to protrude, but may die later. Remnants of branches show as knots in lumber.
- "A" is compacted on one side; environmental cause – possibly strong predominant winds or it grew too close to another tree or building. Narrow side of tree did not get as much food or grow well. The photo is of a "flagged" tree deformed by strong, steady winds at timberline.

Supplies /Preparation

PowerPoint, projector and computer with access to YouTube.

Print (or view online) [reading page](#) for each student.

Print black and white [tree ring samples](#) (set of 6), [1 ring for each](#) student or team of 2-3. (These can be enlarged to fit one to a page, or cut in half and used as is.)

Print [Tree Ring Student Worksheet](#) – ½ page per student. These can be done in class or as homework.

PowerPoint presentations (2), print teacher's notes