

The Science of Tree Dating

Dendrochronology is the scientific process of using tree rings to understand what happened in the environment during the life cycle of a tree.

Objectives:

- To learn to identify the different parts of a tree cross-section.
- To infer from a tree's rings what damage or stress might have occurred during its life.

Supplies:

- Tree stump or limb of a fallen tree
- Picture of tree cookie (provided) if cannot find one
- Pins (optional)
- Small paper labels (optional)
- White paper plate (optional)

Method:

1. Find a tree stump or a fallen tree limb outside. If this is difficult to find you can use the picture of a tree cross-section on the next page.
2. Use the diagram and definitions provided to locate different sections of the tree trunk.
3. You can print the image and write on it. Or use pins and small pieces of paper to make labels and push into the wood itself.



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The Science of Dating Trees cont.

Method Continued:

- Count ONLY the darker circles to determine the age of your tree.
 - ◇ How old is your tree?
- Use [Reading the Rings of a Tree](#) poster to help you discover events that might have happened during your tree's life.
 - ◇ Do you see signs that there was a drought?
 - ◇ Do you see any signs of an insect infestation?
 - ◇ Do you see rings that show a period of good weather?

Additional Activity Idea:

- Use a paper plate to create your own tree cookie.
- The bumpy perimeter can be the bark. The smooth inside edge can represent the cambium, and the center circle can be the hardwood.
- Use crayons to draw the rings and create a tree cookie that is the same age as you.
- Try labeling when important events happened in your life. When were you born? When did you start school?

Source: Project Learning Tree, Tree Cookies Activity



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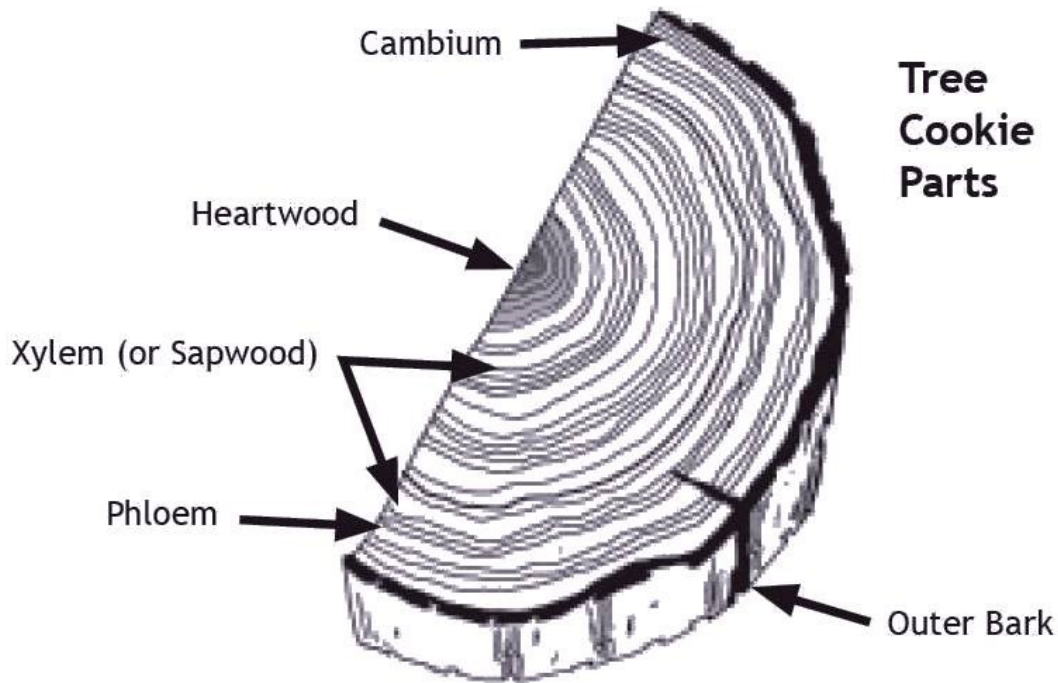


Source: <https://www.science-sparks.com/how-old-is-a-tree/>



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Source: <https://www.plt.org/family-activity/tree-cookies/>

Tree Trunk Layers:

- Heartwood—Central core made of dense, dead wood which provides strength for the tree.
- Sapwood—Also called xylem, brings water and nutrients up from the roots to the leaves. The older xylem becomes the heartwood.
- Cambium—Thin layer of growing tissue which makes new cells.
- Phloem—Also called the inner bark, carries sap from the leaves to the rest of the tree. At certain times of the year, it may transport stored sugars from the roots to the rest of the tree.

Source: Project Learning Tree, Tree Factory Activity



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