

Tree Parts & Functions

A Pre-Visit Lesson to *Trees Demystified*

Objectives: To recognize and identify the parts of a tree.
To explain the roles and functions of tree parts.
To identify and explain the significance of a tree's annual rings.
To create tree ring model of "life" and explain significance to classmates.

Curricular Area: Science

Skills: Observation
Communication
Cooperation

Time: One class period

Background Information:

- * Crown—part of the tree that consists of the leaves and the branches at the top of a tree.
- * Leaves—food factories of the tree. The leaves contain chlorophyll which gives leaves their green color and is responsible for photosynthesis. During photosynthesis, leaves use energy from the sun to convert carbon dioxide from the atmosphere and water from the soil into sugar and oxygen. The sugar (which is the tree's food) is either used or stored in the branches, in the trunk, or in the roots. The oxygen is released into the atmosphere.
- * Trunk (Stem)—supports the leaves and the branches of the tree and also contains the xylem, the cambium, the phloem, and the heartwood.
- * Heartwood—inner core of dead wood that supports the tree. As a tree grows, older xylem cells in the center of the tree become inactive and die, forming the heartwood.
- * Sapwood (Xylem)—the youngest layer of wood that transports water and minerals **up the tree** to the branches and the leaves.
- * Cambium—the growing layer that is only one to two cells thick. It makes new cells during the growing season that eventually become part of the phloem, part of the xylem, or more cambium. The cambium is what makes the trunk, branches, and roots grow larger in diameter.
- * Inner Bark (Phloem)—carries nutrients and sugar from leaves **down the tree** to its branches, trunk, and roots.
- * Outer Bark—protects the tree from injury, disease, insects, and weather.
- * Taproot—long main root that anchors the tree and absorbs water and nutrients from deep in the soil. It helps to support the tree. (Not all types of trees have a taproot.)
- * Lateral Roots—underground roots that get smaller and smaller. They take in water and nutrients and help to support the tree. (All trees have lateral roots.)
- * Annual Tree Rings—records the tree's age. Every year a tree grows a little more and a new tree ring is made.

Materials: Tree cookies (Enough for each group)
Markers
Paper Plates
Sticky Labels

Procedure:

1. Divide students into groups, and distribute one tree cookie per group.
2. Instruct students to observe the tree cookie and to write down everything that they notice.
3. Allow time for students to share what they have observed about their tree cookie with the class.
4. Continue class discussion by explaining the parts of the tree, the functions of those tree parts, and the significance of tree rings.
5. Pass out one paper plate per student, along with markers and sticky labels.
6. Instruct students to create a tree cookie that represents their own life. They should include the bark on the outside and the heartwood on the inside. The students should also draw rings inside their “tree cookie” plate to represent their age. The sticky labels should be placed beside at least two important events in their life (birth, learned how to jump rope, baby brother or sister was born, etc.).
7. When finished, students can share their life as a tree with their peers.

Extension:

Discuss possible environmental conditions that could cause a tree’s annual rings to be thicker or thinner.

