

Title: Structure and Parts of a Tree

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Externship Business: [Menominee Tribal Enterprise \(MTE\), Neopit](#)

Overview/Description:

This lesson will introduce the students to trees, its structure and parts.

Subject:

Technology Education

Grade Level:

6 – 12

Learning objectives:

After doing this activity, students should be able to:

- Correctly identify and spell the basic parts of a tree.
- Correctly identify and spell the structure of a tree trunk.
- Identify the 2 basic building products that come from trees.
- Describe uses for tree/wood products not used in the building industry.

Workplace Readiness Skill:

- | | |
|--|--|
| <input type="checkbox"/> Social Skills | X Communication |
| X Teamwork | <input type="checkbox"/> Critical Thinking |
| <input type="checkbox"/> Attitude and Initiative | X Planning and Organization |
| X Professionalism | X Media Etiquette |

Type of Activity:

- X Individual
- Small group
- X Whole class

Teaching Strategies:

- Observation
- Discussion
- Performance Assessment

Content Standards:

Wisconsin Common Career Technical Standards

Content Area: 4C/Creativity, Critical Thinking, Communication and Collaboration

- 4C1.b.8.h: Work as a part of a team to design a product or service that could fulfill a human need or desire.
- 4C1.b.9.h: Work as a part of a team to improve an existence product or process
- 4C2.b.6.h: Use existing knowledge to develop a resolution for a new situation for a new situation, problem or opportunity.
- 4C1.b.9.h: Work as a part of a team to improve an existing product or process.

Content Area: Information, Media and Technology

- IMT1.d.8.h: Manage and share stored data and information for a specific purpose

Content Area: Career Development

- CD2.b.9.h: Analyze local and regional labor market and job growth information to select a career pathway for potential advancement.

Wisconsin Standards for Technology and Engineering

Content Area: AC/Architecture and Construction

- AC1.b.12.h: Calculate required material for residential construction applications.

Time:

Two periods of instruction, demonstration and student work time. Additional “homework” time may be required by individual students.

Materials List:

- Worksheet
- a living potted tree
- a piece of tree trunk

Directions (Step-by-Step):

A. Tree Parts Hooks / Set

Introduction: Ask the students “Do you know approximately how many products are made from trees?”Answer about 5000!

If possible, bring a living potted tree and a piece of tree trunk into class.

B. Tree Parts (Worksheets) Guided Practice

In this activity you are doing the tree trunk cross section worksheet with your students. This will introduce the students to the inside of the trees. As you lecture and lead the discussion, students will fill in the answers in worksheets. Walk around and checking for understanding. Ask the students to give answers.

Cross Section of a Tree Trunk:

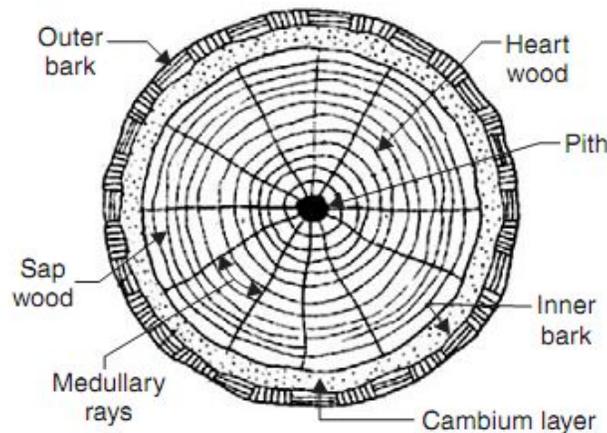


Image: <https://goo.gl/images/NNDjNd>

Bark is the outermost layers of stems and roots of woody plants.

Sapwood, also called alburnum, outer, living layers of the secondary wood of trees, which engage in transport of water and minerals to the crown of the tree.

Medullary rays are cellular structures found in some species of **wood**.

Cambium layer is a thin layer next to the phloem. It is often only one or two cells thick, and you need a microscope to see it well.

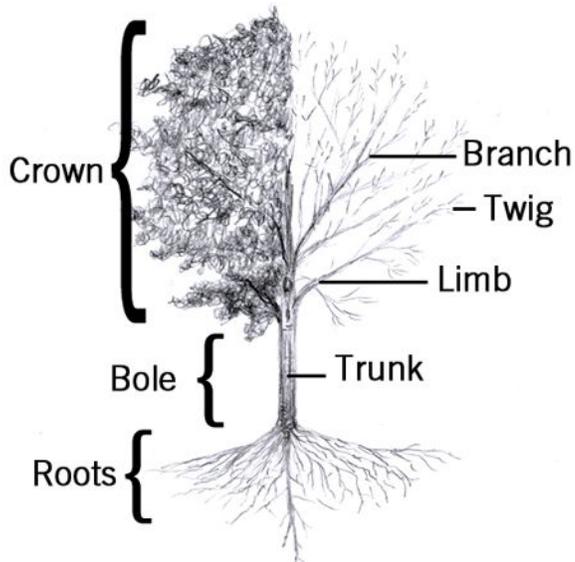
Pith is the tissue that is located in a plant's stem and roots. It is soft and spongy. New pith growth appears white but as it matures it usually turns brown.

The **inner bark**, or "phloem, is the pipeline through which food is passed to the rest of the tree.

Heartwood, also called **duramen**, is dead, central **wood** of trees.

C. Structure of a tree:

The tree is composed of an underground part, the roots, and two aboveground parts, the trunk and the crown.



Bole

Part of the tree trunk extending between the stump and the first lower limbs; it has no offshoots.

Limb

Offshoot growing directly out of a tree trunk, subsequently dividing into branches and twigs.

Twig

The most slender offshoot of a tree branch.

Crown:

Part of the tree above the trunk, including the branches and the foliage.

Root:

Root often having many offshoots, growing somewhat horizontally into the rich moist topsoil.

http://learnaboutwood.wikia.com/wiki/File:Tree_structure.jpg

Branch:

Offshoot of one of the tree's limbs.

Trunk:

The trunk, or stem, of a tree supports the crown and gives the tree its shape and strength..

Wrap up

Upon completion of this topic, students will be asked questions based on the structure and cross-section of tree.

A tour of the facility at MTE may be organised for students.

Formative/Summative Assessment:

Formative Assessment - During the lecture on parts and structure of a tree, teacher will circulate to check for understanding.

Summative Assessment - Students will complete the Trees and Lumber Test (attached). Advanced students may complete the extra credit options (questions 11-14).

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Tree Trunk Worksheet

Name the parts of a tree trunk and describe each.

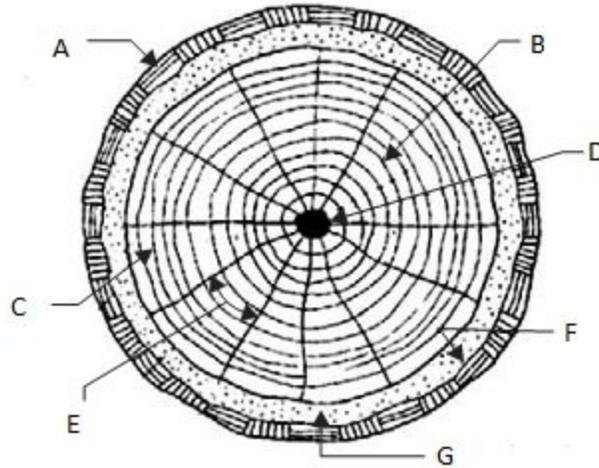


Image: <https://goo.gl/images/NNDjNd>

A: _____

B: _____

C: _____

D: _____

E: _____

F: _____

G: _____

Assessment

Trees and Lumber Test

Circle the correct answer.

Name: _____ Date: _____ Period: _____

1. Name the part of a tree that collects water and nutrients from the soil and providing support for the tree?
 - A. Roots
 - B. Trunk
 - C. Crown
 - D. Bark

2. Name the topmost part of the tree?
 - A. Roots
 - B. Trunk
 - C. Crown
 - D. Bark

3. Name part of the tree which protects tree from bugs and other pests?
 - A. Cambium layer
 - B. Heartwood
 - C. Pith
 - D. Bark

4. How many rings does a tree have per year?
 - A. 1
 - B. 2
 - C. 3
 - D. 4

5. Where does growth occur within a tree?
 - A. Cambium layer
 - B. Heartwood
 - C. Pith
 - D. Bark

6. Which of the following is a hardwood?
 - A. Oak
 - B. Maple
 - C. Poplar
 - D. All of the above.

7. Softwood is
 - A. Wood that comes from trees known as conifers.
 - B. Wood that comes from trees that are called evergreen.
 - C. Wood that comes from trees that have needles for leaves.
 - D. All of the above.

8. What is the softwood we use most in the shop?

- A. Ponderosa Pine
- B. Purple Heart
- C. Larch
- D. Maple

9. Which softwood do we use to build houses?

- A. Ponderosa Pine
- B. Douglas Fir
- C. Oak
- D. Maple

10. Which part of the tree holds a tree firmly.?

- A. Roots
- B. Trunk
- C. Crown
- D. Bark

For extra credit (for advanced students):

11. Which softwood is considered stronger than steel?

- A. Ponderosa Pine
- B. Douglas Fir
- C. Sitka Spruce
- D. No wood is stronger than steel.

12: What is hardwood?

- A. A wood that is harder than other.
- B. Wood that comes from trees known as “deciduous”, because they drop their leaves in the Fall.
- C. A conifer
- D. None of the above.

14. Of the trades listed below, which one is the primary user of hardwoods?

- A. Rough carpentry
- B. Painting
- C. Finish carpentry
- D. Plumbing