

Unit B: Tree Growth and Development

Lesson 1: Examining the Structures of a Tree




Terms

 Cambium

 Cork cambium

 Crown

 Fibrous root system

 Heartwood

 Inner bark

 Outer bark

 Phloem

 Roots

 Sapwood

 Tap root system

 Tree

 Trunk

 Xylem




What are the major parts of a tree and their functions?

- 📖 A tree is a woody plant having one well-defined stem and a formed crown.
- 📖 There are three major parts to a tree.
- 📖 They are the roots, the trunk, and the crown.



Roots

 The roots are the part of the tree typically found below the soil surface.

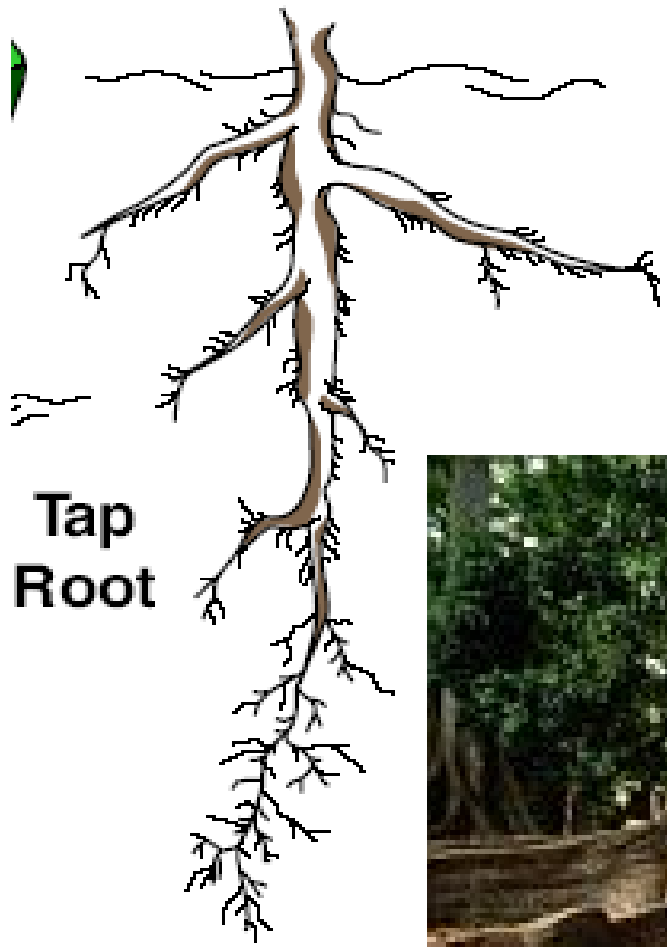
- The root system serves to anchor and support the tree.
- Roots take water and nutrients from the soil for plant growth.



Roots

- 📖 Roots also act as a storehouse for manufactured food for the plant.
- 📖 There are two basic types of tree roots.
- 📖 They are tap and fibrous.
 - 📖 A tap root system has one large root with a number of small roots.
 - 📖 A fibrous root system has many roots that spread and branch in the soil.






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Trunk

 The trunk of the tree serves to conduct nutrients and water from the roots to the manufacturing portion of the tree, represented by the crown.




Trunk

- 📖 The trunk also produces the bulk of the useful wood in a tree.
- 📖 The trunk is comprised of a series of rings.
- 📖 Under normal conditions, one ring is produced each year.



Trunk

 Each section of the ring has a specific purpose in the life of the tree.

- In large trees, the center portion of the trunk is darker-colored and is known as heartwood.
- Here the cells have ceased to function.



Trunk

- In other words, the wood in this portion of the tree is dead.
- The heartwood provides strength to the tree and keeps it upright.



Trunk

- 📁 Outward from the heartwood is the lighter colored wood known as sapwood, or xylem.
 - This is the living portion of the tree.
 - It is the means by which raw nutrients and water are carried from the roots to the crown.
 - The sapwood also serves as the storage area for some of the food made in the leaves.




Trunk

 Outside the sapwood is the cambium.

- This active layer of cells is responsible for the growth of the tree.
- Each year the cambium forms a new annual ring.
- This is how trees grow in diameter.




Trunk

 Immediately outward from the cambium are the living cells called the inner bark or the phloem.

- The tissue carries food made in the leaves down to the branches, trunk, and roots.
- The phloem is protected by dead, nonfunctioning outer bark.

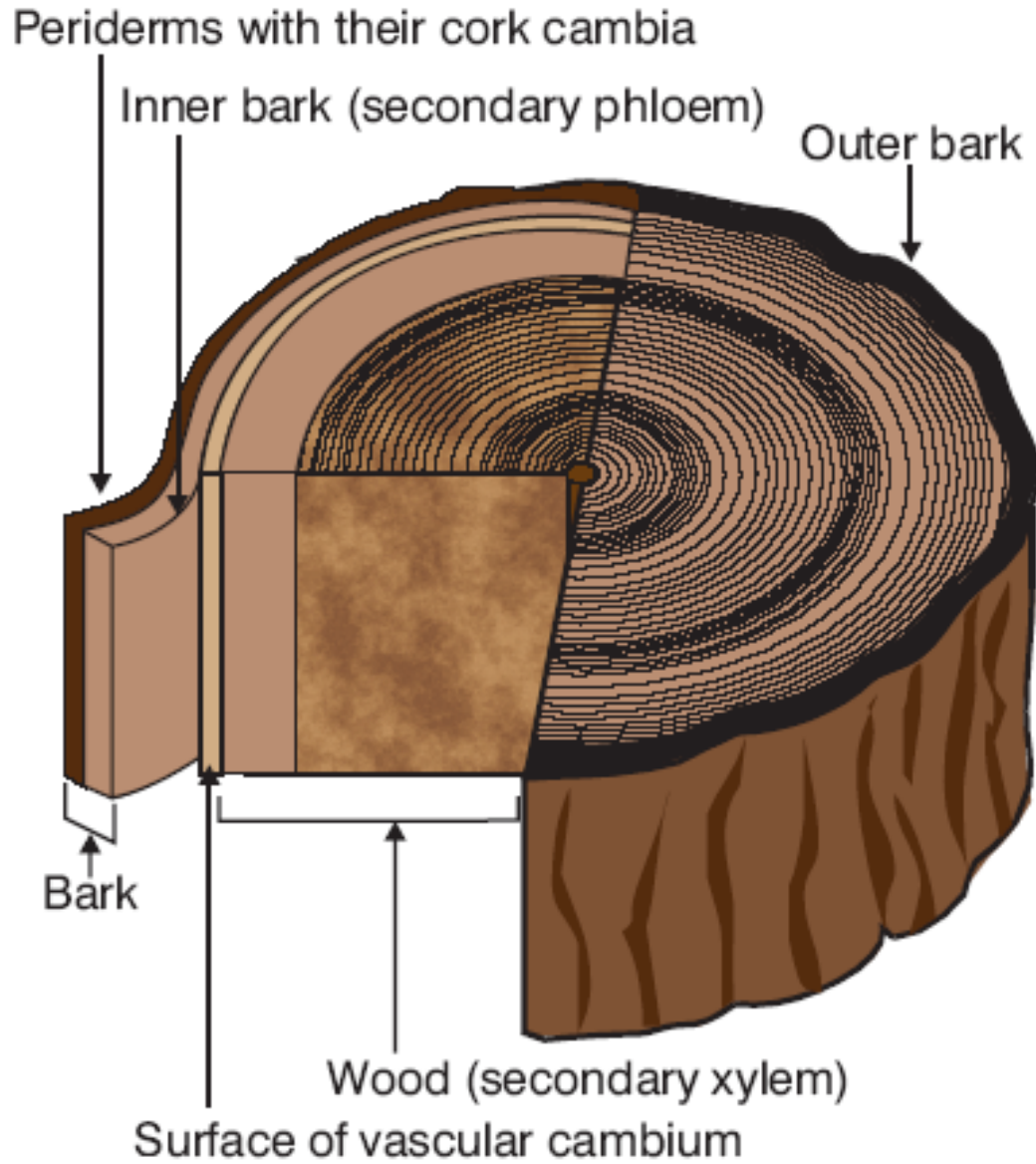


Trunk

 The bark, which protects the trunk of the tree, is formed by the cork cambium, a thin layer of cells between the phloem and the bark itself.



WOOD STEM SECTION



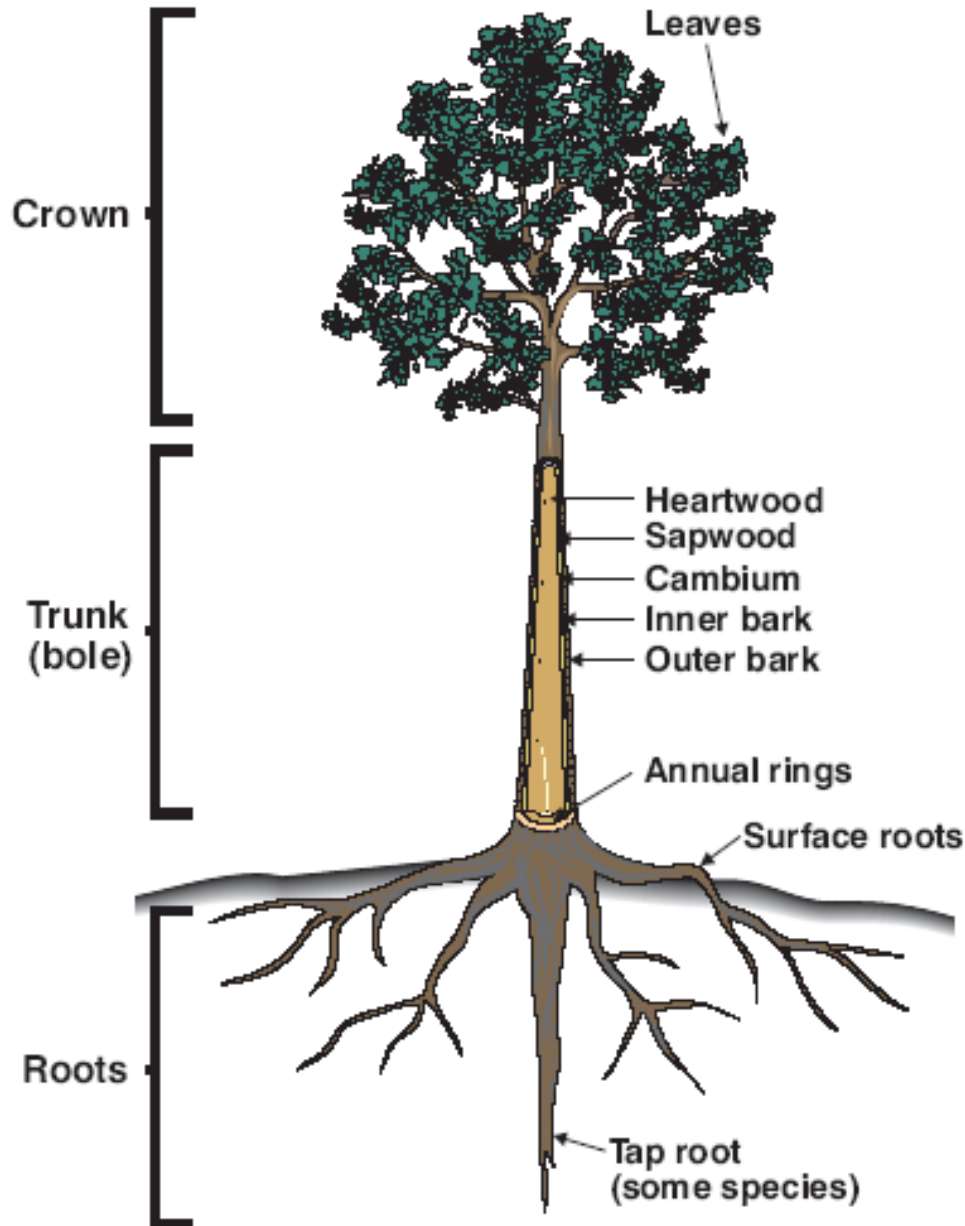
Crown

 The crown or the top part of the tree that includes branches, twigs, buds, and leaves.

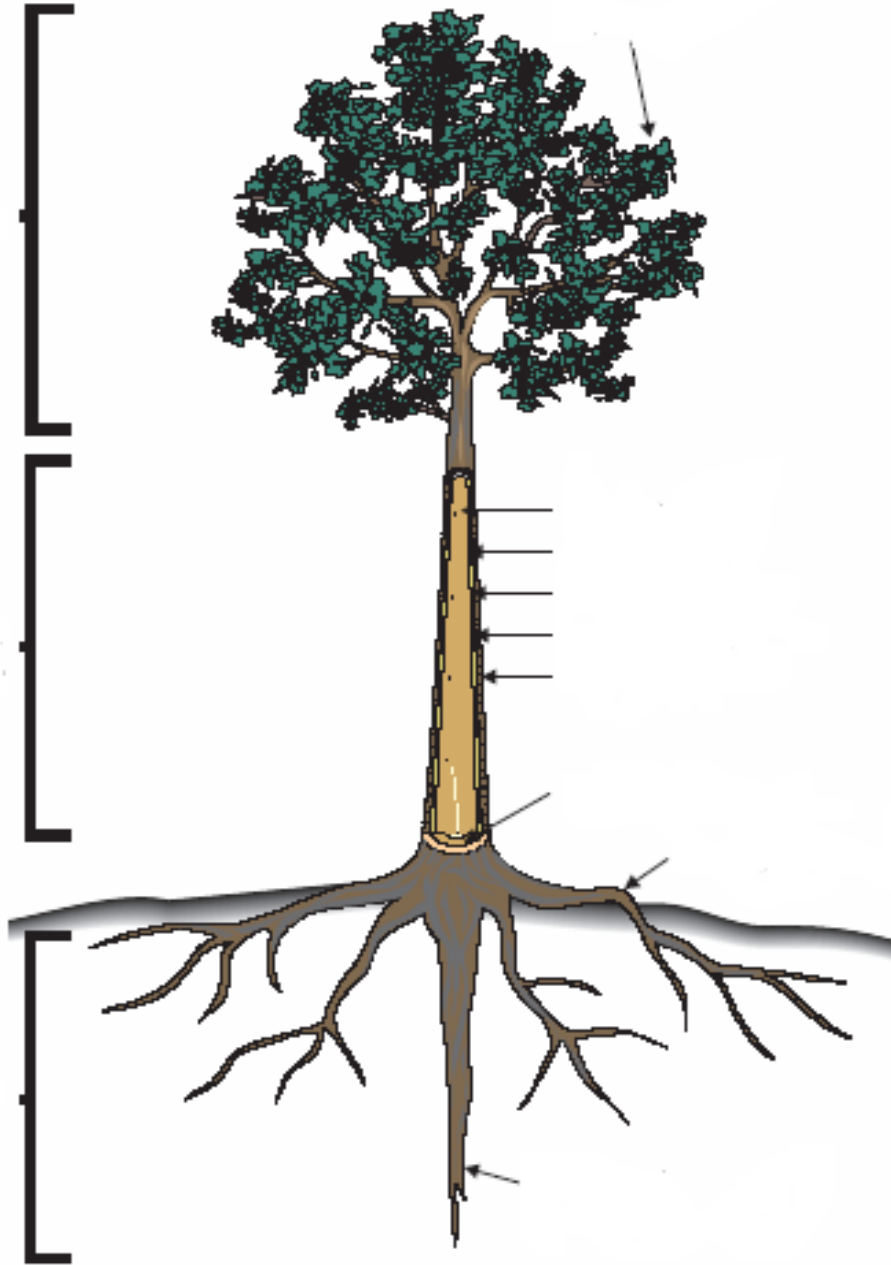
- A major role of the crown is to hold leaves to collect sunlight so photosynthesis can occur.
- It is also in this section of the tree that seeds, fruits, nuts, and berries are produced.
- The crown can also serve as a nesting site for wildlife such as squirrels and birds.




PARTS OF A TREE



Parts of a Tree



Review / Summary

 What are the major parts of a tree and their functions?

