What is a Tree?

A tree is usually a large woody plant with a distinct trunk giving rise to branches or leaves at some distance from the ground. Some trees *(such as palm trees)* can have trunks that are not made of wood. Trees are perennials, which means they continue to grow from one year to the next.

Trees have three main parts, the roots, the trunk and the crown.

Roots

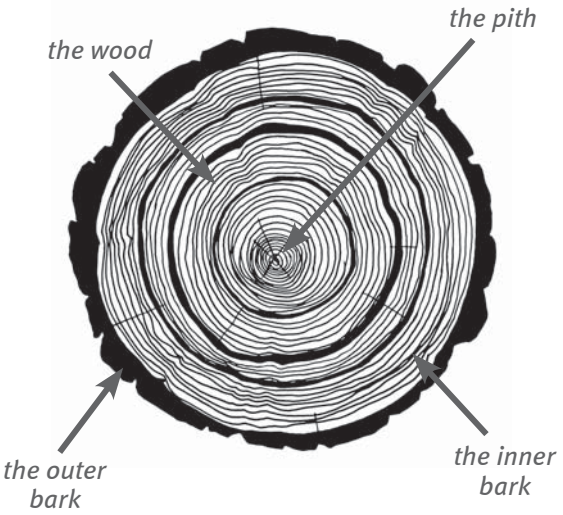
Roots anchor the tree into the ground and can absorb and store water and mineral salts from the soil. Many trees have a taproot which grows straight down into the ground. They also have smaller lateral roots, which spread out horizontally through the soil. Closer to the surface are masses of fine hair roots which absorb water and minerals from the topsoil.

The root system of a Blue gum - shows the main tap root.

Trunk

The trunk is the stem of the tree and supports the branches and foliage *(the canopy)*. Plantation trees are grown and harvested for their timber. Most of the timber is made up of dead plant cells. As shown in the illustration, the trunk of a tree consists of the following parts:

- the outer bark
- the inner bark
- the wood *(sapwood and heartwood)*
- the pith.



In pine trees, **the outer bark** is generally rough and woody, but in eucalypts it varies greatly from rough and fibrous to smooth, depending on the species. The outer bark protects the inner living cells of the trunk and it may also protect the tree from damage by insects, frost, the sun, or fire.

The inner bark and sapwood are made up of living cells which transport the sugars produced by the foliage to other parts of the tree.

A tree grows new wood around the outside of **the wood** it grew in previous years. This is done by a special layer of cells called the cambium. The living sapwood and the central heartwood are where you see the annual

growth rings of the tree. The age of a tree can be estimated by counting these rings. Eucalypts do not have distinct annual growth rings because they grow all year round, whereas pine trees often have distinctive rings that develop during their fast-growing *(summer)*, slower-growing and dormant periods *(autumn and winter)*.

The pith is the central core of the trunk.

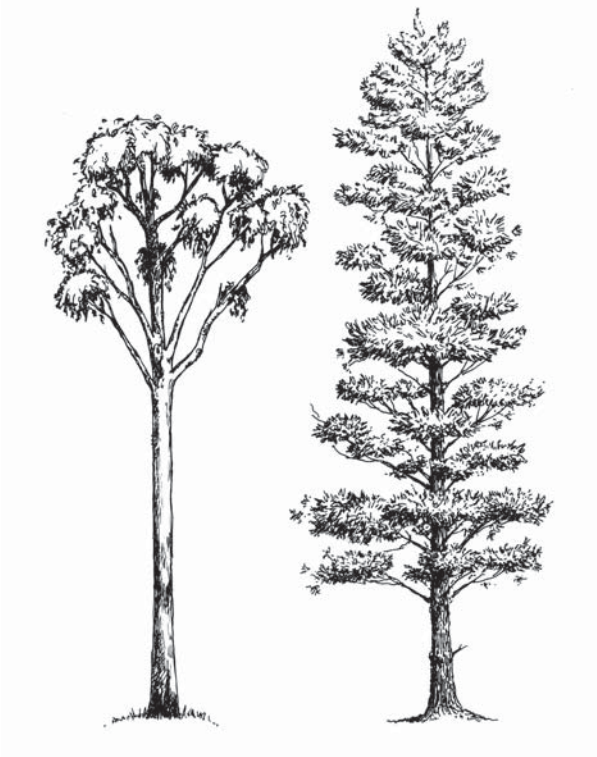
Branches grow out from the trunk of a tree. They are actually small stems that, once formed, stay at the same height above the ground for the life of the tree. Knots in timber are the areas from which branches grow. To get timber without any knots *(known as cleartimber or clearwood)*, the branches are cut off when they are small, and the wood continues to grow evenly over the scar for the remainder of the tree's life.

Crown

The crown is the top part of a tree, with branches, twigs, leaves or needles. The leaves or needles *(the foliage)* use energy from sunlight to make food from water and a gas in the air called carbon dioxide. During this process, which is called photosynthesis, plants produce another gas - oxygen, which animals need to breathe to live.

Types of Trees

Forest trees are divided into two groups, evergreen and deciduous. Within these two groups, trees can be further divided into softwood trees and hardwood trees. Deciduous trees *(e.g. oak, beech, birch, larch)* shed their leaves in autumn, whilst evergreen trees *(including pine, cedar, cypress, eucalypt)* bear leaves all year round and lose some leaves continually throughout the year.



Left - Blue gum and right - Radiata pine.

- Softwood trees *(e.g. pine, cypress and cedar)* have needles and bear cones.

  Softwoods generally grow more quickly than hardwoods and for this reason are often used in plantations.
- Hardwood trees *(e.g. eucalypt, poplar, silky oak and blackwood)* have broad, flat leaves and produce flowers.

  Hardwoods do not always have harder wood than softwoods. For example, poplar trees are hardwoods but their wood is softer than that of many pine trees, which are softwoods.

Find Out More

Wikipedia - http://en.wikipedia.org/wiki/tree
http://en.wikipedia.org/wiki/trees_of_Australia