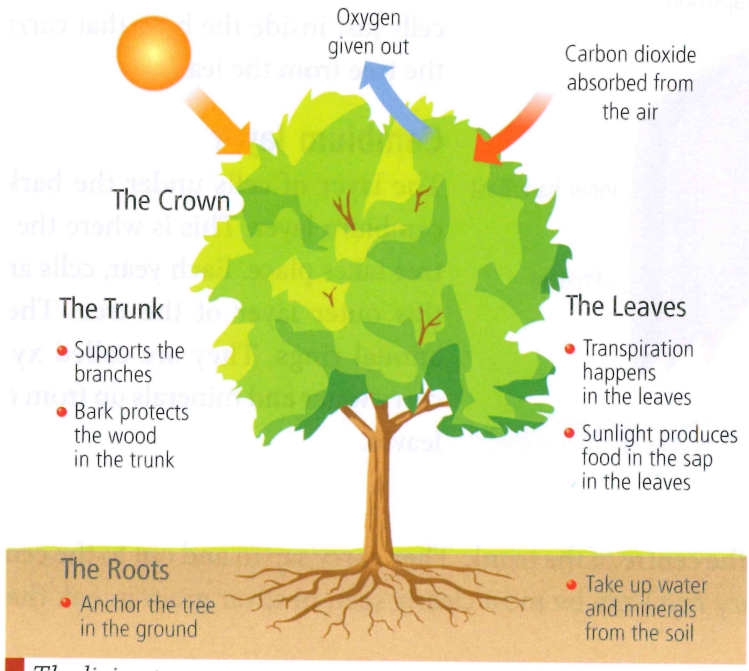


The living tree

THE PARTS OF THE TREE

Bark

The tough fibres of the bark protect the tree like a skin. The bark protects the tree from damage by the weather, animals, insects and fungi. It also helps to keep moisture in the tree.

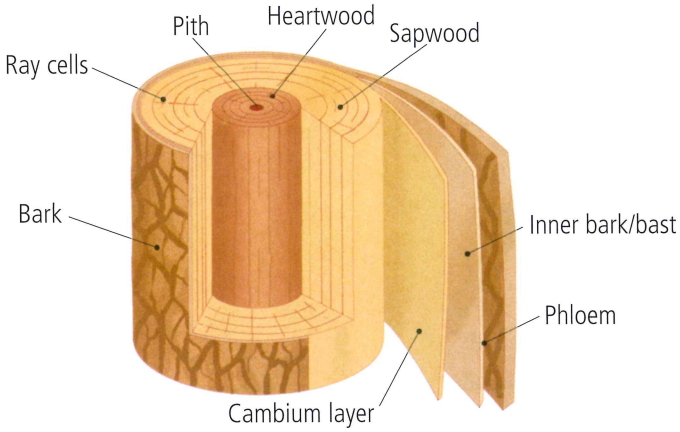
Sapwood

As the tree grows, layers of cells are added to the **sapwood**. The sapwood is the lighter-coloured wood in the trunk. Cells in the sapwood carry nutrients up and down the tree. Sapwood is the softer wood in the tree and it is less durable.

Heartwood

The **heartwood** is found in the centre of the tree and it is usually darker in colour than the outer layers. The heartwood gives the tree support and is the oldest wood of the tree. The wood from it is more durable and it is resistant to fungal and insect attacks.

Heartwood and sapwood softwood log



Parts of the trunk

Bast (phloem)

Bast is the inner layer of the bark. It is a laye cells just inside the bark that carries food dc the tree from the leaves.

Cambium layer

The layer of cells under the bark is called cambium layer. This is where the growth of tree takes place. Each year, cells are added o this outer layer of the tree. These cells fc annual rings. They are called **xylem cells** carry water and minerals up from the roots to leaves.

Ray cells

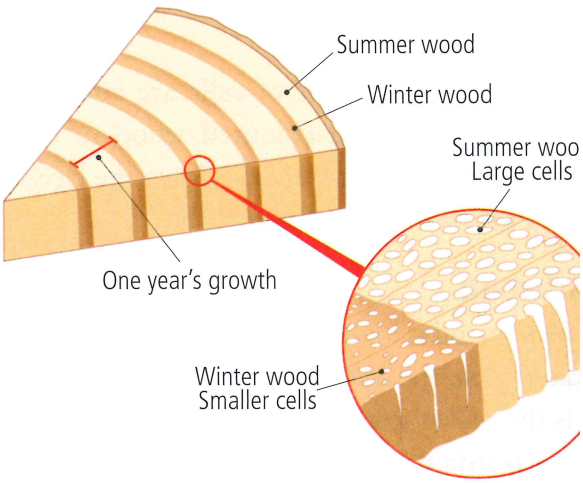
Ray cells radiate from the centre of the trunk. They carry sap in and out to the centre of the t The ray cells (medullary rays) can be most clearly seen in silver grain in oak that has been radially.

Pith

The pith is the centre of the trunk and is the remains of the young tree.

Annual rings

Trees in Ireland grow with the seasons because of Ireland's temperate climate. Each year a ring is added; during spring and summer the growth is rapid and the cells are wider than those during the winter season, which are smaller and more compact. The annual rings allow us to tell the age of the tree.



Annual rings

WOOD STRUCTURE

All wood is made up of cells like tubes, which are stuck together to form the structure of the tree. Softwoods have a slightly different structure to hardwoods.