Getting to know plants

Plants make be big or small, some may have huge leaves while some may have coloured leaves. Even the flowers are of different colours. The plants are divided into three categories namely herbs, shrubs and trees. There are also plants like creepers and climbers.

Herbs

Plants with green and soft stem are called as herbs for e.g. fenugreek.

Shrubs

Plants having the stem hard but not very thick branching out near the base are called shrubs. For e.g. rose

Trees

Plants that are very tall and have hard and thick brown stem which have branches in the upper part, much above the ground are called trees like the banyan tree.

Creepers

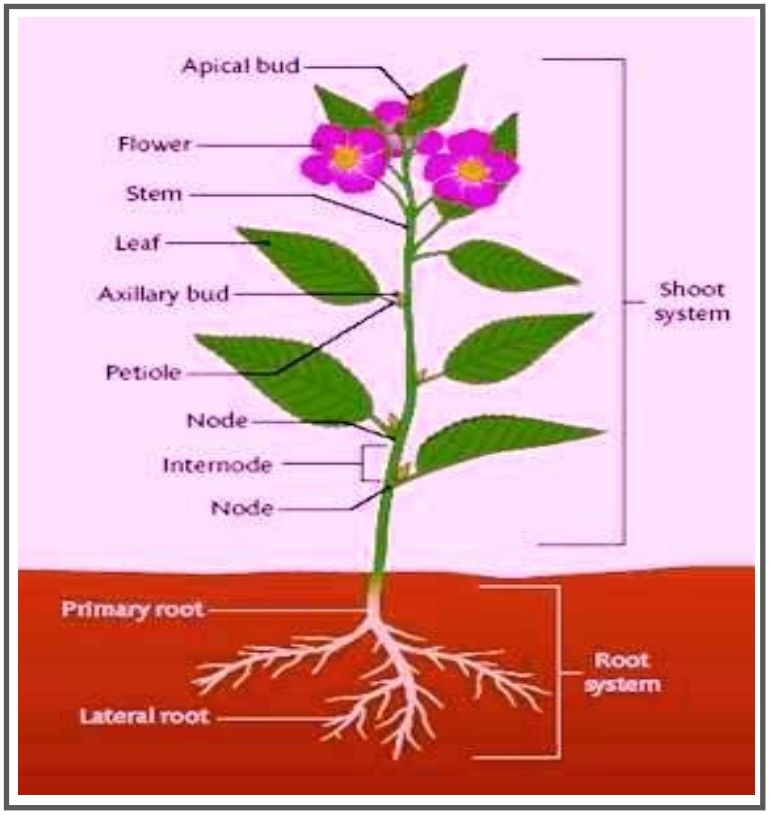
These are plants with weak stem that cannot stand upright and spread on the ground. For e.g. water melon.

Climbers

Plants that take support of neighbouring structures and climb up are called climbers. For e.g. money plant

The unwanted plants which grow along with the other plant are called as **weeds**. For e.g. Chilean needle grass.

The various parts of a plant



Stem

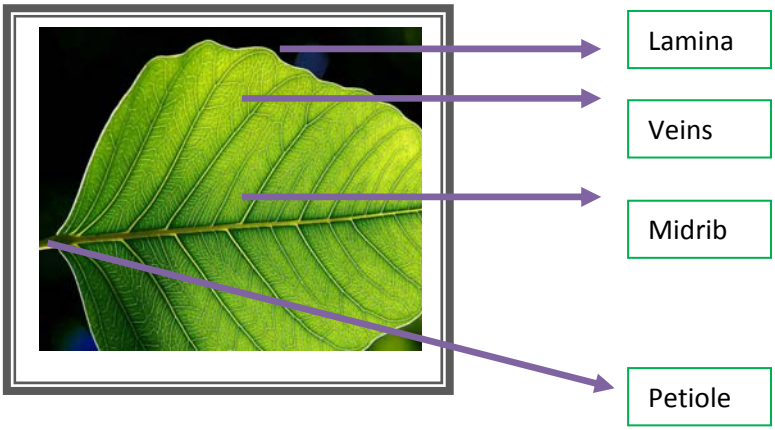
It is the part of the plant which conducts water. The minerals dissolved in water move up in the stem, along with the water. The minerals go to every part of the plant through narrow tubes inside the stem.

Activity

Take a beaker with some water and put a few drops of blue ink in it. Now take the tender twig of a plant with leaves and flowers and keep it in the glass for 8-10 hours. Note the observations. You observe blue coloured lines through the stem and leaves; indicating the path of movement of water and showing that transport of substances occurs through stem.

Leaves

It is the part of the plant which prepares food. The portion of a leaf by which it is attached to the stem is called **petiole** while the broad, green part of the leaf is called **lamina.** The lines present on the leaf are called **veins**. This middle vein of the leaf is called the **midrib**.

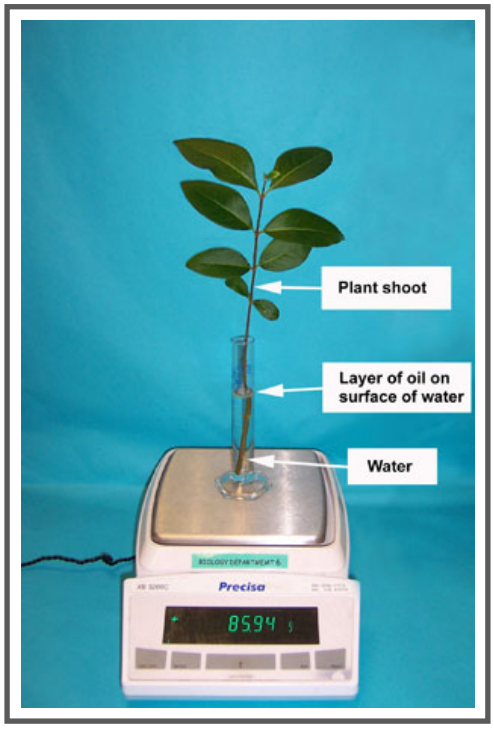


The pattern made by the veins is called as venation. These are of two types namely parallel and reticulate venation. When the veins are parallel arranged then it is called as parallel venation while if it is in net like fashion on both the sides of the midrib is called as reticulate venation.

Parallel venation

Reticulate venation

Activity to show transpiration



- Put water in 3 measuring cylinders.
- Take 3 similar cuttings from the plant of 8 cm each.
- Place the plant cutting in the measuring cylinder.
- Adjust the water level to an exact level (for example 8 cm^3)
- Make a note of the volume of water.
- Add about 1 cm^3 of oil on top of the water in the measuring cylinder.
- Place the measuring cylinder on the balance and record the mass.
- On the measuring cylinder, write the starting volume of water.
- Take 3 more cuttings at timed intervals for the next couple of days.
- Uptake of water gives an estimate of water loss by transpiration.

Activity to show leaves contain starch

- The leaf is first decolourised by treating it in 90% ethanol (alcohol) solution. It is then rinsed in hot water to remove all alcohol and to soften the tissue.
- The leaf is now colourless. Then iodine solution (brown in colour) is poured over the leaf.
- The leaf turns blue-black indicating that it contains starch.

This proves that leaves produce starch in the presence of sunlight.

Plants synthesize their own food in the presence of sunlight, green coloured substance (chlorophyll) from water and carbon dioxide. This process id called as **photosynthesis**.

Roots

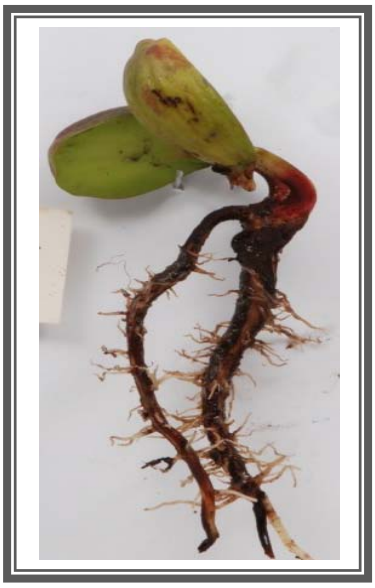
Roots help in absorption of water from the soil. They anchor the plant firmly to the soil. There are two types of roots.

Fibrous roots and tap roots

A root where only one main primary root is present is called as tap root and the smaller roots from these roots are called lateral roots.

Plants that do not have primary roots and all roots appear similar are called as fibrous roots.

Fibrous Roots

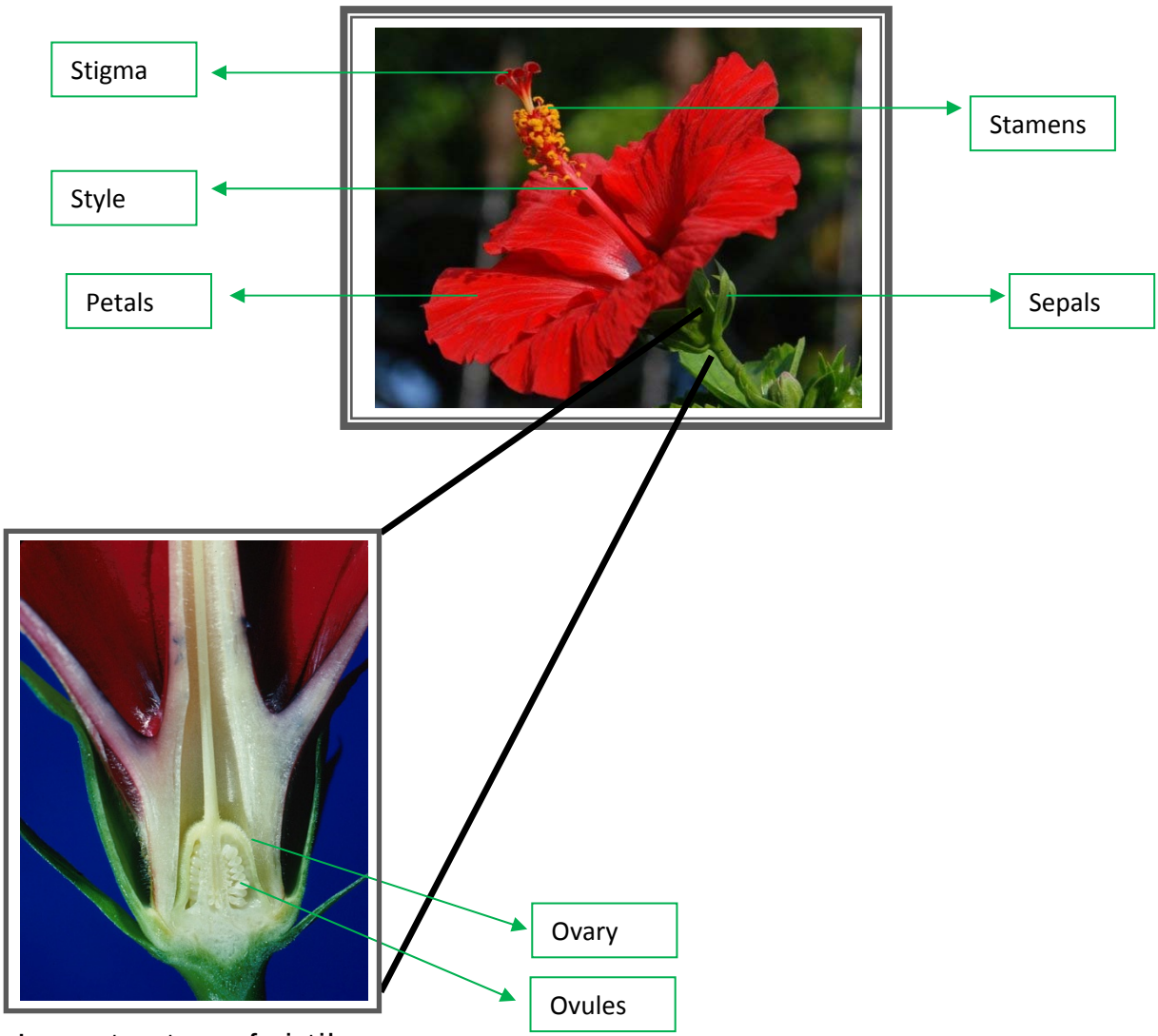


Tap Roots

The food prepared by the leaves is transported through the stem and stored in various parts of the plants. In some it is stored in roots like carrot, tapioca etc.

Flower

Parts of a china rose flower



Inner structure of pistil

The prominent parts which appear are the **petals** and the leaf like structures below it are called as **sepals**. The two major parts of the flower are the **stamen** and the **pistil**.

The stamen is made up of a stalk called **filament** and **anther**. The pistil is further divided into three parts namely the **style**, **stigma** and ovary. The bottom swollen part of the pistil is the ovary which has small bead like structures called **ovules**.