Botany 101

Botanists in Training

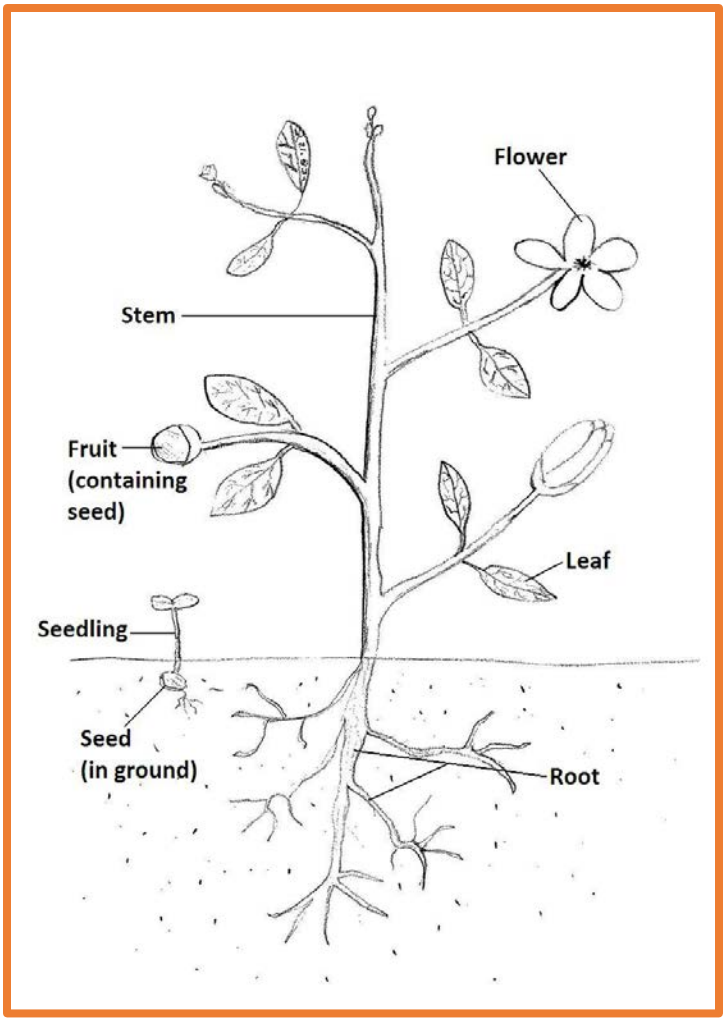

Figure 1: Parts of a plant

Root – The underground part of a plant that absorbs water and nutrients from the soil and holds the plant in place

Stem – The (usually) above ground part of a plant that supports the plant and transports water and nutrients. It might be woody, like a tree trunk, or fleshy, like a stalk of a clover

Leaf – The (usually) green, thin, flattened structure arranged along the stem or twig. This is also the kitchen of the plant – where sunlight is changed into sugar to feed the plant (photosynthesis).

Flower – The sexual part of a plant, which is often showy to attract pollinators

Fruit – The fertilized ovary of a plant, meaning the part that contains the seeds

Seed – A baby plant; the part of a plant that if planted will produce a new plant. Often many of our food seeds have been refined (white rice) or roasted (nuts) and will not be able to produce a new plant

Seedling – A sprouted seed that contains no more than one set of leaves

Flowers:

Some plants have flowers. The main function of a flower is to produce seeds. A flower sometimes has male (boy) and female (girl) parts. A commonly yellow dust, called pollen, comes from the male part of the flower. This part of the flower is also known as the anther. The pollen must land on the female's flower part, which is also known as the stigma, before a seed can grow. This process of uniting the pollen and ovary is called pollination. Once united, a seed begins to form. This is called fertilization.

Some animals are very important pollinators, including bees, butterflies, wasps, birds and even bats. These pollinators are attracted to the bright colours and sweet smells of the flower and feed on the nectar and pollen found in the flowers.

Flowers are designed so that when the right pollinator visits to feed, the anther will deposit pollen on their body. When visiting another flower, the pollinator touches the stigma and leaves behind the pollen from the first flower. Some flowers could be self-pollinated, but for genetic diversity it is better that they be pollinated by a neighbour. Sometimes flowers are wind pollinated. These flowers are usually found on the tops of trees where the wind easily disperses the pollen.

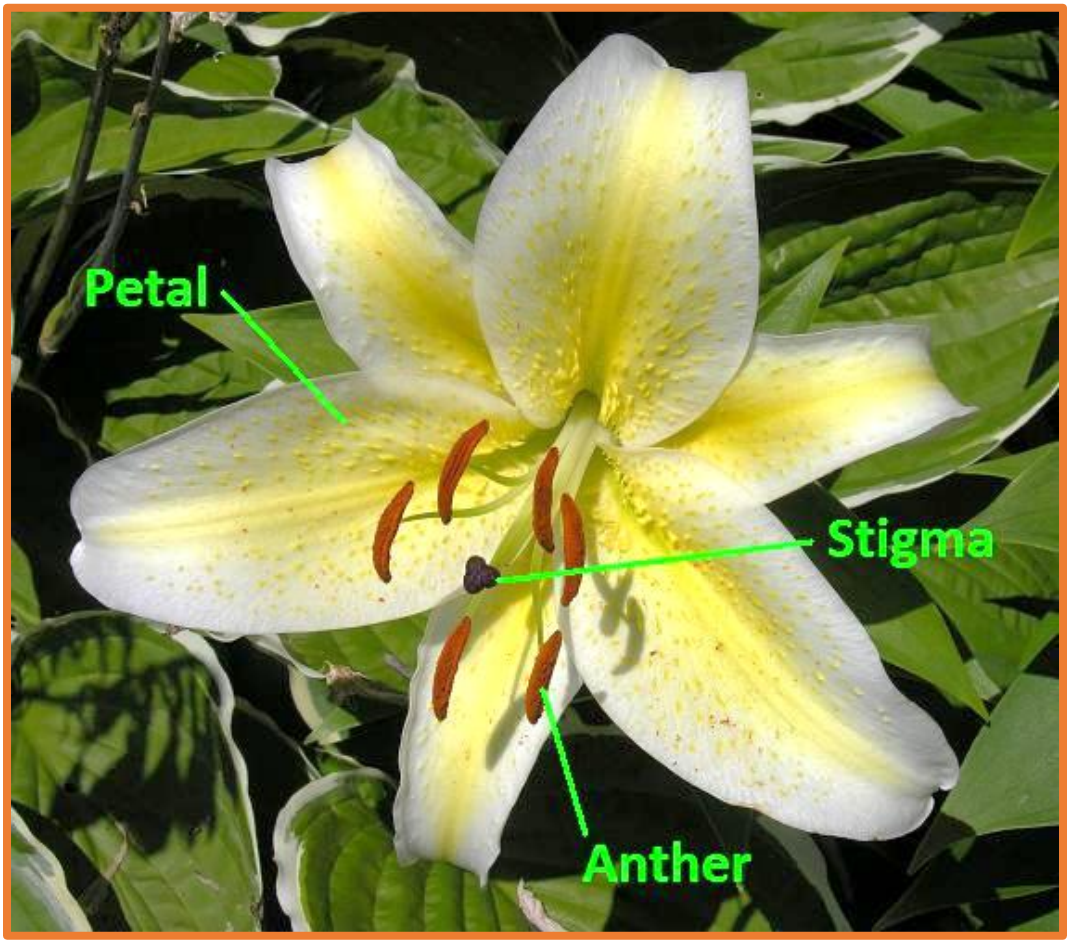

Figure 36 – Parts of a Flower

Petals – used to attract pollinators (bugs etc.) who transfer pollen from one plant to another

Anther – the male part of a flower that contains pollen, which are needed for reproduction

Stigma – the female part of a flower which is sticky to receive the pollen during fertilization

Fruits & Seeds:

When one or many seeds are made in a flower, different parts of the flower sometimes change to build a covering around the seed. This covering that surrounds the seed is called a fruit. Fruits come in all different sizes, shapes, and colours. There are many different kinds of fruits. Blueberries and raspberries are fruits. So are apples, oranges, tomatoes and cucumbers.

Some fruits are dry. Wheat seeds are grains; dandelion seeds, called achenes, are attached to feather-like plumes. Maple tree 'keys' or 'helicopters' are called samaras. Achenes and samaras depend on the wind for dispersal.

Figure 1: Some parts of a flower

Do seeds need fruits? In order to grow into a new plant (regenerate), seeds often need to move away from the parent plant. When a flower makes a fruit around its seeds, the seeds have a better chance to travel long distances (disperse).

Some fruits such as blueberries and cherries are fleshy. Often they are very colourful and tasty.

When these fruits are eaten by wildlife, the seeds in the fruit pass though the animals' digestive tract and back to the soil. Most plants that rely on wind dispersal of their seeds are often not eaten by animals. This is because the plant doesn't need an animal to eat it to spread their seeds, so they don't need to be tasty.

There are some plants that make their seeds in cones. These plants are called conifers. Seeds found in cones are usually not covered. This is different from the seeds made in flowers that have a fruit around them. The seeds of the cones are often found on the inner side of the cone-scales.