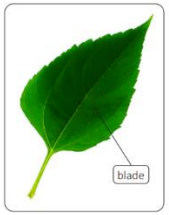
Plant Nutrition and Reproduction

Plant parts Plant parts have different functions. The flowers, stems, leaves and roots each have an important role.

Leaves have two main functions. They make food for the plant through a process called photosynthesis. They also lose water from their underside in a process called transpiration. The structure of leaves allows them to carry out th ese functions. The blade captures sunlight, and the stalk and veins transport water into and out of the leaf.

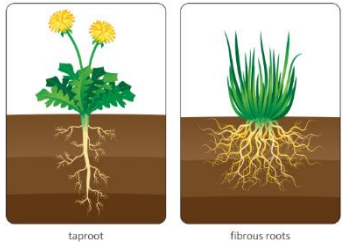


Pollination is the process where pollen is transferred from the male anther at the top of the stamen to the female carpel of another flower. Flowering plants can be pollinated by insects, such as bees. The pollen sticks to an insect as it drinks nectar from a flower. The pollen on the insect then lands on the stigma at the top of the carpel of another flower. It travels down into the carpel to make seeds. Wind can also disperse the pollen of some flowering plants.

Roots

Roots have two main functions. They anchor the plant securely in the ground and take in water and nutrients from the growing medium, such as soil. There are two main types of root systems: taproots and fibrous roots.

A taproot system has a large primary root that grows deep into the soil to anchor the plant. Smaller lateral roots grow out from the taproot. Lateral roots are covered with small root hairs, which take in water and nutrients. Some taproots are edible, such as carrots and beetroots. A fibrous root system has many thin roots that grow out from the stem and anchor the plant just under the soil's surface. Fibrous roots spread far from the plant to reach water and nutrients.

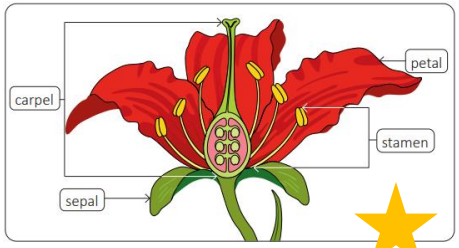


Stems

Stems have two main functions. They transport water, nutrients and food around the plant and they support the leaves and flowers. Stems transport water, nutrients and food around the plant through vessels called xylem and phloem. Xylem transport water and nutrients from the roots to the leaves. Phloem transport food made in the leaves to the rest of the plant. A stem also supports the flowers to attract pollinators and the leaves so they can capture sunlight.

Flowers

Flowers have one main function. Following reproduction, they make seeds that can grow into new plants. Different parts of a flower have different functions. Sepals protect the flower bud as it grows, bending back when the flower opens. Petals attract pollinators with their bright colours, scent, and a sweet liquid called nectar. The stamen is the male part of the plant. Male pollen grains are produced at the top of the stamen in the anther. The carpel is the female part of the plant. Pollen travels into the carpel to make seeds. The carpel of some plants can swell into a fruit.



Life cycle of a plant

Varying needs of plants There are four stages in the life cycle of a plant.

Seed

A seed contains a tiny new plant and a food store in a protective seed coat. Germination is the process of a plant beginning to grow from a seed.

Seedling

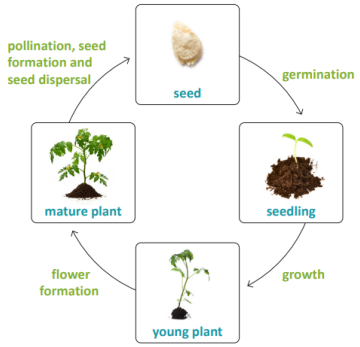
If a seedling has sunlight, nutrients, warmth, water and is protected from strong winds and heavy rain, it goes through a process of growth to form a young plant.

Young plant

As a young plant grows and matures, it begins the process of flower formation and buds form.

Mature plant

When a flowering plant has matured, pollen is moved from the stamens of one flower to the carpel of another during pollination. Seed formation then occurs in the carpel. Seeds are moved away from the parent plant during a process called seed dispersal.



Vocabulary	
anther	A male part of a flower where pollen grains are made.
pollinator	An animal that transfers pollen for the process of pollination.
stamen	A flower's male reproductive organ consisting of an anther and filament.
stigma	A female part of a flower