

What should I already know?

Which things are living and which are not.
 A variety of common wild and garden plants, including deciduous and evergreen trees and how to identify them.
 The structure of common flowering plants, including trees (including leaves, flowers, fruits, roots, bulbs, seeds, stem, trunks and branches).
 Seeds and bulbs grow into mature plants.
 Plants need water, light and a suitable temperature to grow and stay healthy.
 Plants and animals depend on each other to survive.

Vocabulary

Nutrients	Substances that are found in food and provides energy. They are needed for growth and life.
Temperature	A measure of how hot or cold something is.
Carbon Dioxide	A gas produced by animals and people breathing out. Plants and trees use carbon dioxide to make food.
Transported	Taking something from one place to another
Fertiliser	A substance that is added to soil in order to make plants grow more

Diagrams

The Structure of Plants
 Most plants have a similar structure with roots, stems and leaves (and sometimes flowers too). Each of these different parts do a specific job:

Flower
 The flower is needed for reproduction. It contains pollen and eggs which make seeds to make new plants.

Leaves
 Leaves are required for nutrition. A process called photosynthesis creates food for the plant there.

Stem
 The stem holds the plant and moves it towards the light. It also transports food and water around the plant.

Roots (and root hairs)
 These soak up water and nutrients from the soil. They also anchor the plant in the ground, so that it doesn't blow over.

Did you know?
 -Non-flowering plants can reproduce on their own without producing seeds. Examples include algae, mosses and conifers.
 -Many plants have evolved and adapted to survive in extreme weather conditions (e.g. cactuses and mangrove trees).
 -Some plants are carnivorous. They lure, trap and 'eat' insects to get their energy.

The Life Cycle of a Flowering Plant

Germination
 The seed absorbs air and water and begins to develop roots. A shoot emerges from the ground and the tiny plant (a seedling) begins to capture sunlight with its leaves and starts to produce its own food.

Pollination
 The fully-grown plant begins to produce its own flower buds. Pollinating insects and animals are attracted to the plant and carry pollen from it to other flowers.

Fertilisation
 When the pollen meets an egg, the fertilised flowers make seeds.

Seed Dispersal
 The new seeds are dispersed by the plant and grow into new plants. Seeds can be dispersed by animals, water, wind or 'explosion' (where the seed pods shoot away from the plant).

Plant Reproduction - All plants have to make new plants in order to survive. This is called reproduction. Flowers contain the male and female cells that must meet for reproduction to begin. This process is called pollination.

The stamen is the male part of the plant, where the pollen is made. Each stamen has an anther (which contains pollen) and a filament (which holds up the anther).

Petals attract insects to the flower.

The carpel is the female part of the plant. It has three main parts:
 • The stigma which catches the pollen.
 • The style which holds the stigma up.
 • The ovary which contains the eggs.

When pollen from one plant comes into contact with stigma of another plant, a process called fertilisation takes place and seeds are made in the ovary of the flower.

Vocabulary

Structure	The way in which something is built or made.
Pollen	A fine powder produced by flowers. It fertilises other flowers of the same species so that they produce seeds.
Pollination	To pollinate a plant or tree means to fertilise it with pollen. This is often done by insects.
Function	A useful thing that something does. For example, the petals on a flower are usually bright - this is to attract bees and other insects so that they can collect pollen to make seeds.
Vegetation belts	Areas of land that is divided according to temperature and precipitation.
Climate zones	Sections of the Earth that are divided according to the climate. There are three main climate zones; polar, temperate and tropical.

The Big Picture	By the end of our project we will know that
<p><u>Biology</u></p> <p>B1: Living things are special collections of matter that make copies of themselves, use energy and grow.</p> <p>B2: Living things on Earth come in a huge variety of different forms that are <u>all related</u> because they all came from the same starting point 4.5 billion years ago.</p> <p>B3: The different kinds of life, animals, plants and microorganisms, have evolved over millions of generations into different forms in order to survive in the environments in which they live.</p>	<p>Different parts of plants have one or more functions (jobs). The roots collect water and minerals from the soil, and hold the plant firmly in the ground. The stem holds up the leaves so that they can gather light to make food and holds up the flowers so that they can receive pollen and disperse their fruits. The stem also transports water and minerals from the roots to the other parts of the plant. The leaves make food by trapping light and using its energy to turn carbon dioxide and water into carbohydrates. The function of a flower is reproduction, where flowers of the same kind exchange pollen – made by an anther – in a process called fertilisation, and a structure in the flower’s ovary called an ovule becomes a seed; the ovary then becomes a fruit which helps the seed leave the plant in a process called dispersal.</p> <p>Plants need air, water, sunlight, nutrients from the soil, room to grow and a suitable temperature in order to grow. The amount of each of these may vary depending on the type of plant. For example, cacti need less water than other plants.</p>