



Science: How does Your Garden Grow: Buds & Berries

There are three types of plants.

- **Annuals** take one year to complete their life cycle.
- **Biennials** take two years to complete their life cycle, germinating and growing roots and leaves in their first year, flowering, setting seed and dying in their second year.
- **Perennials** live for several years after germination.
- The plant starts life as a seed, which germinates and grows into a plant.
- The mature plant produces flowers, which are fertilised and produce seeds in a fruit or seedpod.
- The plant eventually dies, leaving seeds which germinate to produce new plants.

Seeds can be planted all year round, however traditionally planting would have taken place in the spring when the ground begins to warm up. The winter is a great opportunity to see seeds

Seeds are formed in the female part of the flower and grow into new plants, this is how they reproduce. Seeds are protected by a seed coat and most of them contain food for the new plant when it starts to grow (germinates). The seed or seeds surround by the ovary wall and sometimes other parts of the flower form the fruit.

The female parts of the flower are the ovary, ovule, style and stigma. For the seed to form, the ovule needs to be fertilised by pollen from the same type of flower. A pollen grain lands on the stigma (pollination) and grows a tube down through the style to the ovary and into the ovule. When the male pollen and female ovule join the ovule is fertilised and develops into a seed. The ovary protects the seed as it develops.

Plants disperse their seeds in four main ways; by animals, by wind, by the plants themselves, and by water.

- Animal dispersal plants could include Blackberries, raspberries, strawberries, hawthorns, elder berries, honeysuckle, acorns, hazel nuts, sweet chestnuts, and the horse chestnut.
- Seeds that rely on the wind for dispersal include the sycamore tree, the ash, the Scots pine, clematis, dandelion and thistles.
- Self dispersal – these are seeds that are either shaken out of the fruit when ripe and dry or flung away when the pod explodes. Some of the plants these include the poppy, pansies, geraniums, busy lizzes and foxgloves.
- Water dispersal is used by plants that generally are by the waters edge, if not in it. Yellow flag iris and gypsywort are just a couple of examples.

The seasons can be explained quite simply by what we see around us, we are all used to seeing the changing seasons.

A simple explanation would be that the earth travels around the sun and this takes a whole year.



As the earth moves it leans towards the sun and this is what makes the seasons change. When the northern half of the earth is leaning closer to the sun it becomes warmer and this is summer. While this is happening in the north, the southern half of the earth is in winter. An example of this would be, when it is summer in the United Kingdom it is winter in Australia.

After 6 months have passed the earth would be leaning away from the Sun and the winter is in the north and the summer in the south.

As the earth warms up again in spring plants and trees begin to grow. Baby animals are sometimes born in spring, so that they have the whole of the summer to grow strong for the cold winter. In summer the sun is very high which means the days are longer and warmer. As autumn draws in the weather becomes cooler and the days shorter. Tree leaves begin to dry out and fall to the ground. As winter approaches the days get shorter and much colder. Some animals and birds migrate back to warmer places, whilst others may hibernate. Rainfall can be much heavier and on really cold days there could be frost and ice. In some places it will even snow.

How does your garden grow?

Topics covered:

Growing plants
Plants and animals in the local environment
Helping plants grow well
Life Cycles

This session has been developed to show children where food comes from and how plants grow. Children will see our fruit trees, vegetable plots and have a chance to plant seeds (to take back to school and watch them grow), plant seedlings in our vegetable plot and harvest a seasonal crop to take home. Suitable for any age and ability.

From Easter to October only, this session takes place in the gardens so children must bring suitable clothing for sun or rain.

See familiar foods being grown
Plant Seeds
Plant seedlings
Harvest vegetables (if available)