

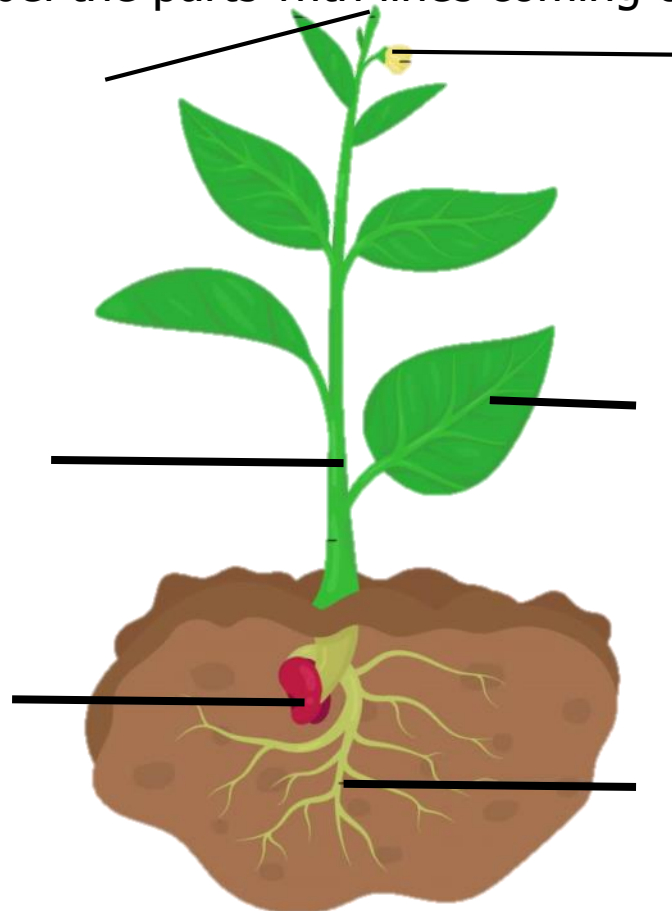
SCIENCE

LOWER KS2 WEEK 2

Plants and Pollination

Warm up!

Let's see what you can remember about the parts of a plant from your prior learning! you can print off this image or draw your own, please label the parts with lines coming off of them.



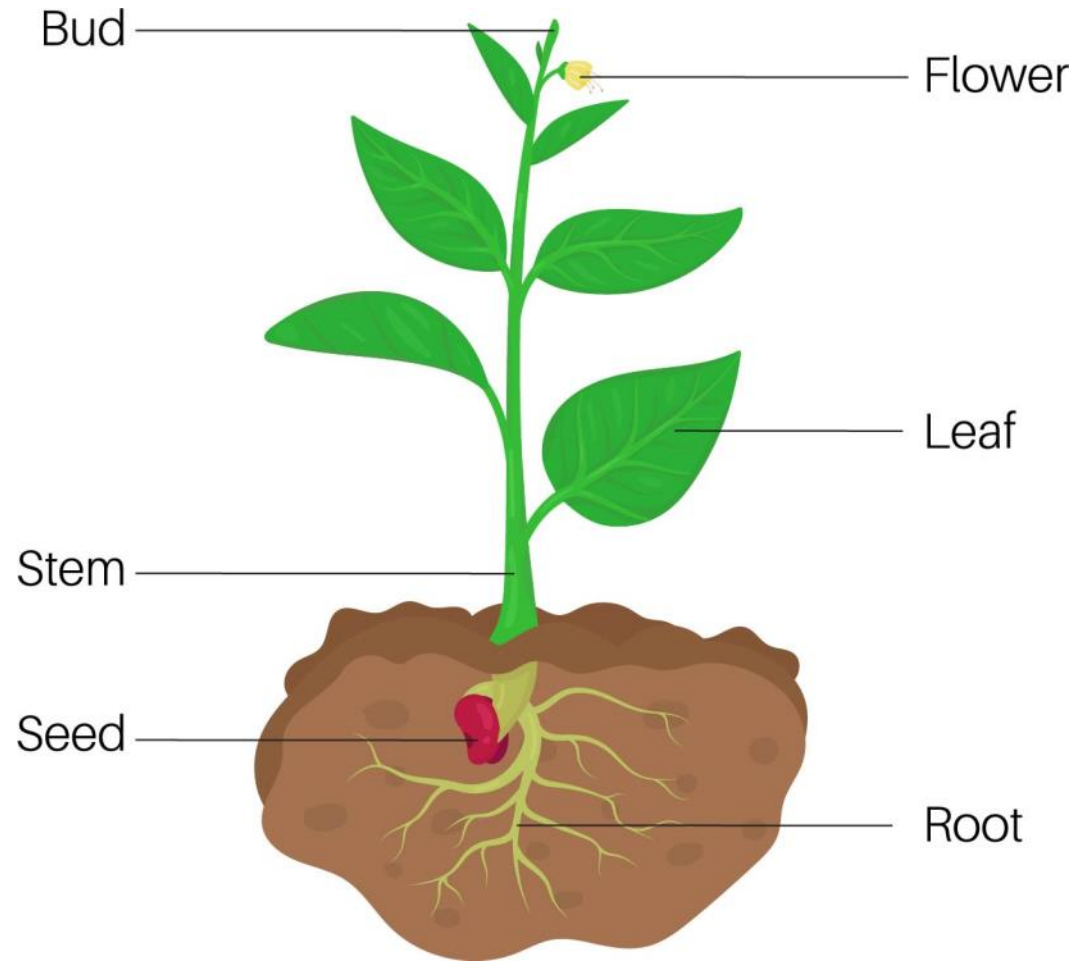
Top Tip
If you cannot remember some parts, how can we find out? What can we use to find information?
The internet?
Information books?

Bonus!
Can you also write in your work books what do plants need to grow?

Answers
are on the
next slide!

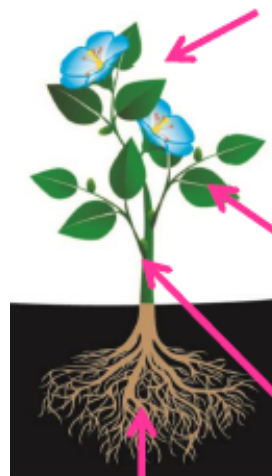
Warm up!

How many parts did you label correctly?



FLOWERING PLANTS

The largest group of plants are flowering plants. They include trees as well as flowers. Their main parts are the flowers, leaves, stem and roots.



Many flowers have bright colours and a strong smell. They attract insects to the sweet liquid called nectar inside.

Leaves have a chemical inside which helps to make food.

The stem supports the plant. Water and food travel from the roots, through the stem and then to all the other parts of the plant.

Roots hold a plant upright and take in water and minerals.



Making food

Green plants use the sun's energy to make food in their leaves. They turn water and minerals from the soil and carbon dioxide gas from the air into sugar. Sugar is food for plants. This process is called photosynthesis.

Trees

A tree is a plant with a thick woody stem called a trunk.

A tree grows from its middle out. One ring of new wood builds up each year making the trunk thicker.



Inside a flower

Flowers contain parts that can make seeds which will grow into new plants.

To make the seeds, a yellow dust, called pollen, has to be carried from one flower to another. The wind and small animals do this job.



Pollen sticks to a bee's body as it drinks nectar. This will rub off on the next flower it visits.

Fruits

When the petals fall off, flowers grow into fruits.

Fruits contain seeds that can grow into new plants.

Not all fruits are edible, for example an acorn is the fruit of an oak tree.



Roots

Hidden underground, a network of roots spreads through the soil. The roots hold the plant firmly in the ground. Water and dissolved minerals enter the roots through the tiny root tips. The more roots a plant has, the more water and minerals it can take up.

Looking at leaves



Leaves contain a green chemical which absorbs sunlight to help make food. When leaves die, the green chemical fades away and they change colour.

Many types of trees lose all of their leaves every autumn. They are called deciduous trees. Trees that don't lose all their leaves at once are called evergreens.

Stems

Stems hold the leaves above the ground and transport water and food to the other parts of the plant.

There are lots of different types of stems, for example strawberry plant stems grow along the ground and ivy plant stems grow along other plants.



Sunlight

If you look down on a plant from above you can see that its leaves are arranged so that as much sunlight falls upon each one as possible. The greater the amount of sunlight each leaf receives, the more sugar the plant can make.

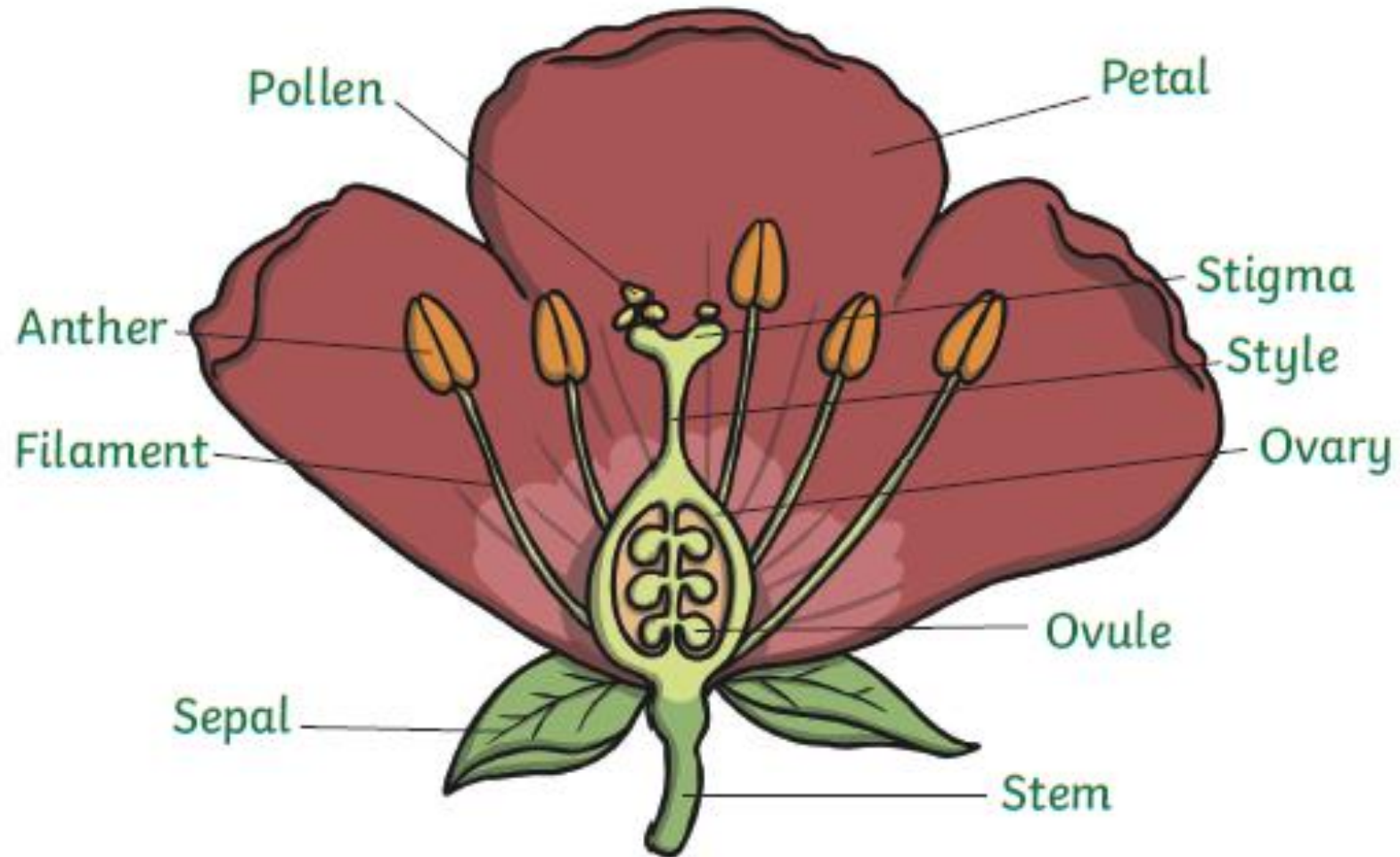


This week our challenge is to learn what pollination means and how it happens.

- Plants produce seeds in order to reproduce. To make a seed a flower must be pollinated.
- Pollen is made by the male part of the plant, which is called the **stamen**. The pollen needs to get to the female part of the plant, which is called the **stigma**.
- The pollen must then travel from one plant to another plant of the same species, e.g. Daffodil to another Daffodil.
- Please watch this video that explains the life cycle of a plant.
<https://www.bbc.co.uk/bitesize/clips/zgqyrdm>

Next we need to know the different parts of a flower used in pollination.

Parts of a Flower



Each part of the flower is important in the pollination process...

Petal

It is the petal's job to attract the insects towards the flower.

Interestingly, the colours that we see are not the same as the colours that the insects see. Insects see in ultraviolet, which is a type of light which is outside the range of what human eyes can see.



petal

Style

The style is above the ovary and its job is to hold up the stigma. The style, ovary and stigma all make up the female part of the flower, which is called the 'carpel' or 'pistil'.



style

Stigma

The stigma's job is to collect the pollen from other plants when insects brush by it. It has adapted to catch the pollen in different ways e.g. some stigma have tiny hairs on them to collect the pollen. It is on the stigma that growing process first begins.



stigma

Filament

The filament's role is to hold up the anther. If the anther was very low down, then insects might not be able to collect that flower's pollen. What would happen if pollen was harder for insects to collect?



filament

Anther

anther



The role of the anther is to produce the pollen. It is important that this pollen is then carried to another plant.

Which part of the plant would the pollen need to be taken to?

Ovary

ovary



It is the ovary's job to hold the ovules and to keep them safe until the flower gets pollinated.

After pollination, a plant then needs to disperse its seeds.

- Please watch this video on BBC Bitesize which explains seed dispersal:
- <https://www.bbc.co.uk/bitesize/clips/znvfbgq>
- There are 4 main types of seed dispersal:
 1. Wind
 2. Animals
 3. Explosive action
 4. Water

Wind

Sycamore 'helicopters' and dandelion 'clocks' both have fruits which have adapted to use the wind to carry the seeds away when the seeds are ready.



Bursting/ Explosive Action

Some plants have pods full of seeds which will burst, showering the ground with seeds, like the Himalayan Balsam seed. Peas are another example of a plant bursting open to



On the next page we have a number of different plants. Your challenge is to sort them into the ways in which they disperse their seeds.

If you are unsure, can you use the internet to research the plant to find out how the plant disperses its seeds.

An adult may want to help you with this activity and to support you on the internet.

Animals

Some plants such as cockleburs have developed to grow tiny hooks on their fruits which hook on to animals (or people) that pass by the plant. Eventually they will drop off on to the ground.



This dog has been covered in burrs.



Burdock seeds

Some plants make tasty fruits. This is to encourage animals (and people!) to eat the fruits. The seeds then pass through the animal unharmed and out the other end with a ready supply of fertiliser (not tasty in the slightest...quite the opposite). This method ensures the seed is given nutrients to help it grow.

What types of fruits can you think of that are eaten by animals and people with seeds inside?



Water

Some plants rely on water to disperse their fruits. These will either grow on the water or by the side of water.

Water lilies live on the water so they use the water to disperse their seeds. They make very light seeds which will float away on the water. While the seeds are in the water, the water lily grows a



Lily
seeds



Water
lily

Seed Dispersal Sorting Activity

Cut out the squares and sort them into the correct page.



sycamore

twinkl.com



apple

twinkl.com



poppy

twinkl.com



peas

twinkl.com



horse chestnut

twinkl.com



dandelion

twinkl.com



coconut

twinkl.com



**Himalayan
balsam**

twinkl.com



ragwort

twinkl.com



burdock

twinkl.com



berries

twinkl.com



acorn

twinkl.com

Some seeds can be dispersed in more than one way so some seeds can be put on more than one sheet.



Wind

Animals



Seed Dispersal Sorting Activity

Some seeds can be dispersed in more than one way so some seeds can be put on more than one sheet.

Water



Exploding



If you cannot print this page, then please create your own graph in your work book and either write or draw and label the different plants into the graph.

On the following slide are the answers.

Seed Dispersal Sorting Activity

Some seeds can be dispersed in more than one way so some seeds can be put on more than one sheet.

Wind



dandelion



poppy



sycamore



ragwort

Animals



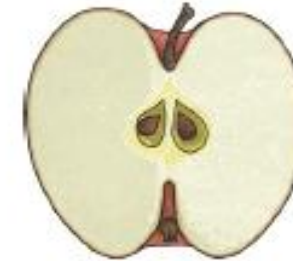
ragwort



peas



berries



apple



acorn



horse chestnut



burdock

Seed Dispersal Sorting Activity

Some seeds can be dispersed in more than one way so some seeds can be put on more than one sheet.

Water



**Himalayan
balsam**



coconut



Exploding



peas



poppy



**Himalayan
balsam**