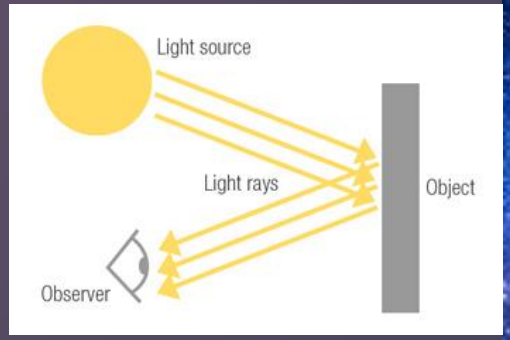


Year 3 & 4 Knowledge Organiser

SCIENCE
LIGHT

We need light to be able to see things. Light travels in a straight line. When light hits an object, it is reflected (bounces off). If the reflected lights hits our eyes, we can see the object.



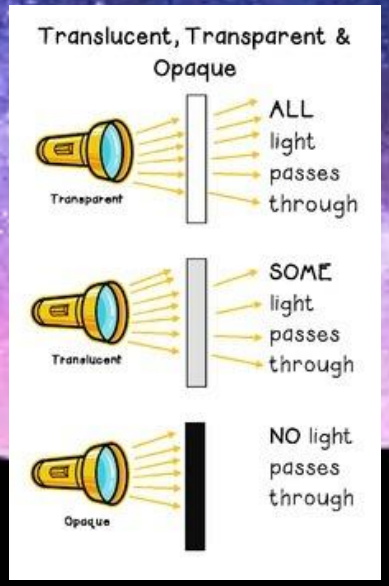


Some materials reflect light well, whilst other materials do not reflect light well. Reflective surfaces and materials can be very useful.

The pupils control the amount of light entering the eyes. If too much light enters, then it can damage the retina. To help protect the eyes, you can wear a hat with a wide brim and sunglasses with a UV rating.



Key Vocabulary	
light	A form of energy that travels in a wave from a source.
light source	An object that makes its own **light**.
dark	**Dark** is the absence of **light**.
reflection	The process where **light** hits the surface of an object and bounces back into our eyes.
reflect	To bounce off.
reflective	A word to describe something which **reflects light** well.
ray	Waves of **light** are called **light rays**. They can also be called beams.

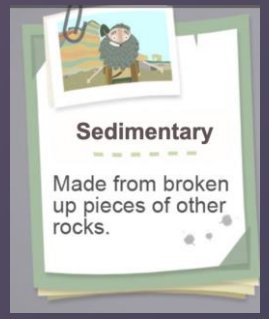


A shadow is caused when light is blocked by an opaque object. When the light source is directly above the object, the shadow will be directly underneath. When a light source is to one side of an object, the shadow will appear on the opposite side. The shadow will also be longer.



SCIENCE
ROCKS AND FOSSILS

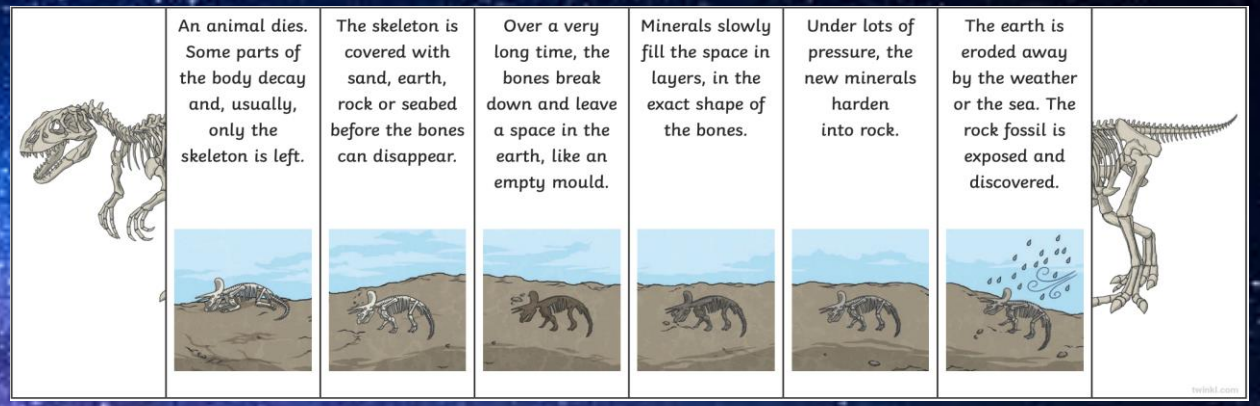
Key Vocabulary	
igneous rock	Rock that has been formed from **magma** or **lava**.
sedimentary rock	Rock that has been formed by layers of **sediment** being pressed down hard and sticking together. You can see the layers of **sediment** in the rock.
metamorphic rock	Rock that started out as **igneous** or **sedimentary rock** but changed due to being exposed to extreme heat or pressure.
magma	Molten rock that remains underground.
lava	Molten rock that comes out of the ground is called **lava**.
sediment	Natural solid material that is moved and dropped off in a new place by water or wind, e.g. sand.
permeable	Allows liquids to pass through it.
impermeable	Does not allow liquids to pass through it.





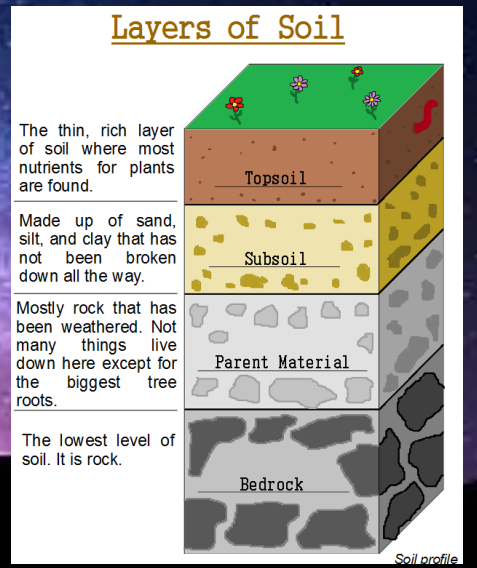


Key Vocabulary	
fossilisation	The process by which fossils are made.
palaeontology	The study of fossils.
erosion	When water, wind or ice wears away land.



Soil is the uppermost layer of the Earth. It is a mixture of different things:

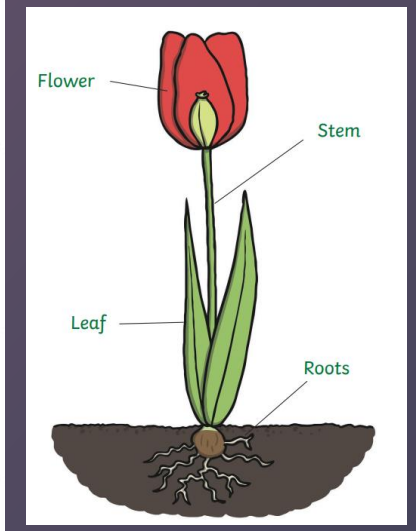
- minerals (the minerals in soil come from finely broken-down rock),
- air,
- water,
- organic matter (including living and dead plant.



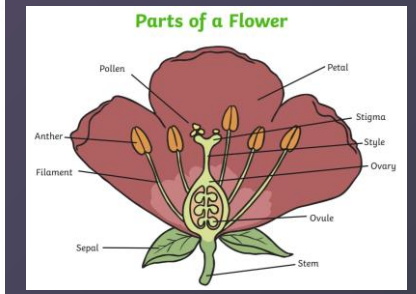
SCIENCE
PLANTS

Key Vocabulary	
roots	These anchor the plant into the ground and absorb water and nutrients from the soil.
stem	This holds the plant up and carries water and nutrients from the soil to the leaves. A trunk is the stem of a tree.
leaves	These make food for the plant using sunlight and carbon dioxide from the air.
flowers	These make seeds to grow into new plants. Their petals attract pollinators to the plant.
nutrients	These substances are needed by a living things to grow and survive. Plants get nutrients from the soil and also make their own food in their leaves.
evaporation	When a liquid turns into a gas.

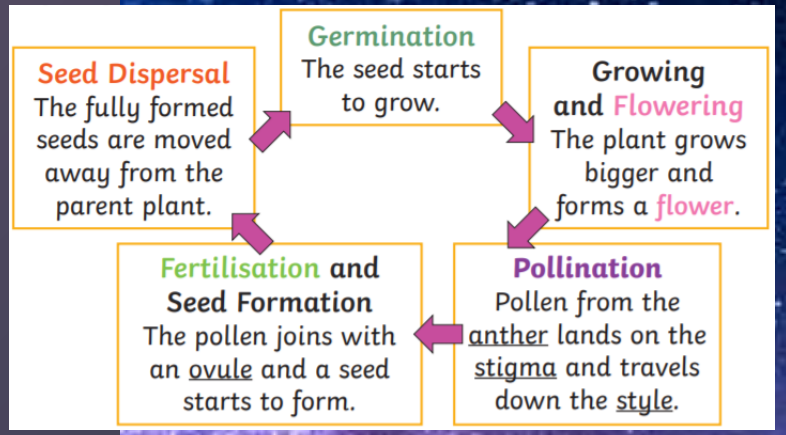
Parts of a plant

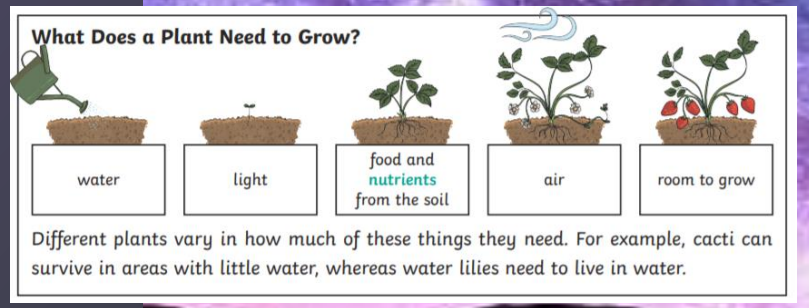


Parts of a flower



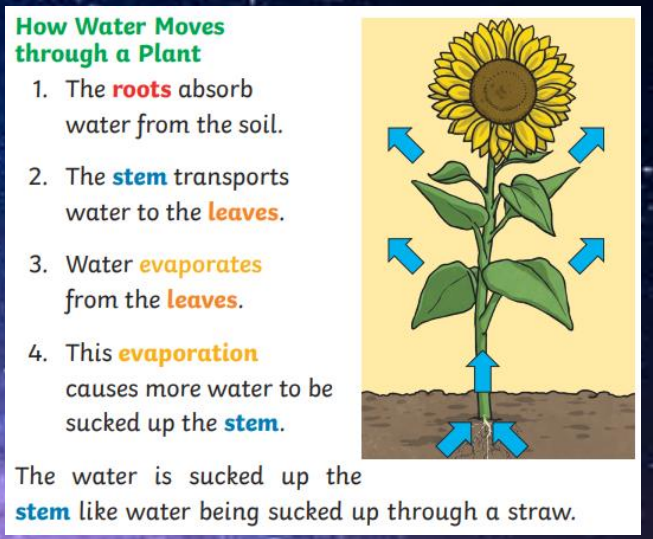
Life cycle of a flowering plant





What do plants need to grow?

How does water move through a plant?



How are seeds dispersed?

