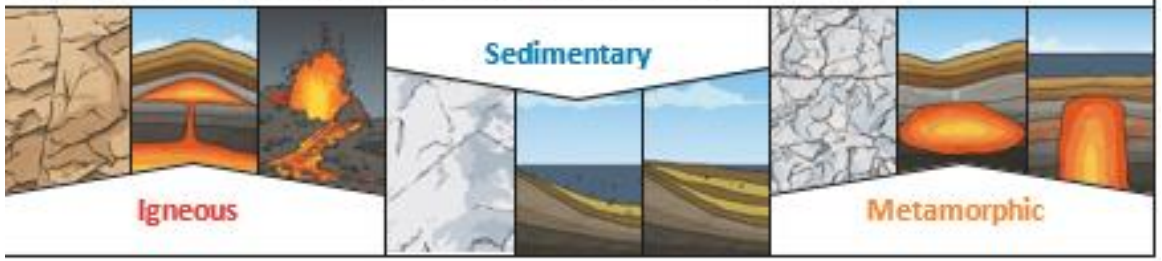
Year 3 Knowledge Organisers

Science

Year 3 Rocks and soils

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.

There are three types of naturally occurring rock.



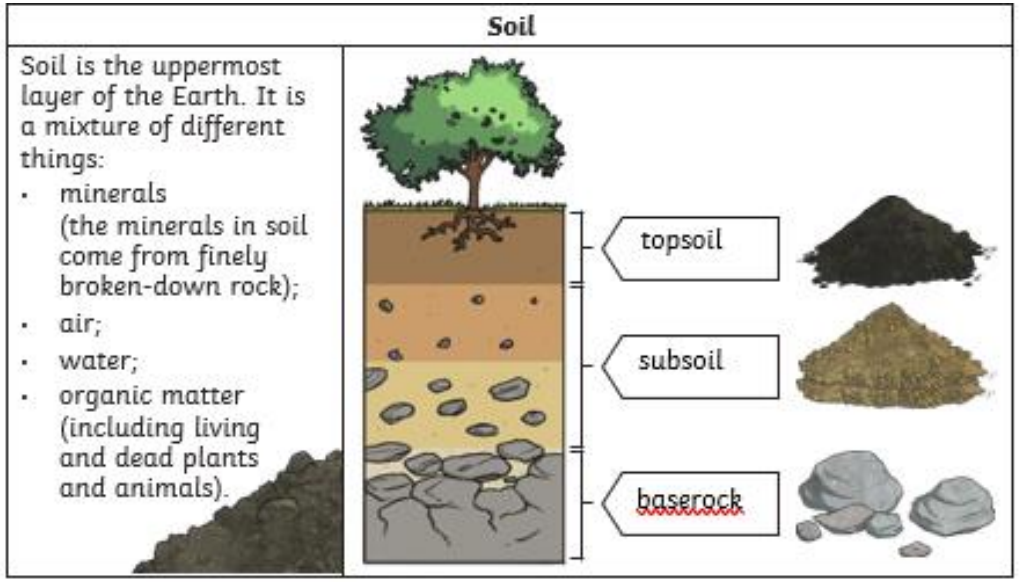
Natural Rocks			Human-Made Rocks
Igneous	Sedimentary	Metamorphic	
Obsidian	Chalk	Marble	Brick
Granite	Sandstone	Quartzite	Concrete
Basalt	Limestone	Slate	Coade Stone

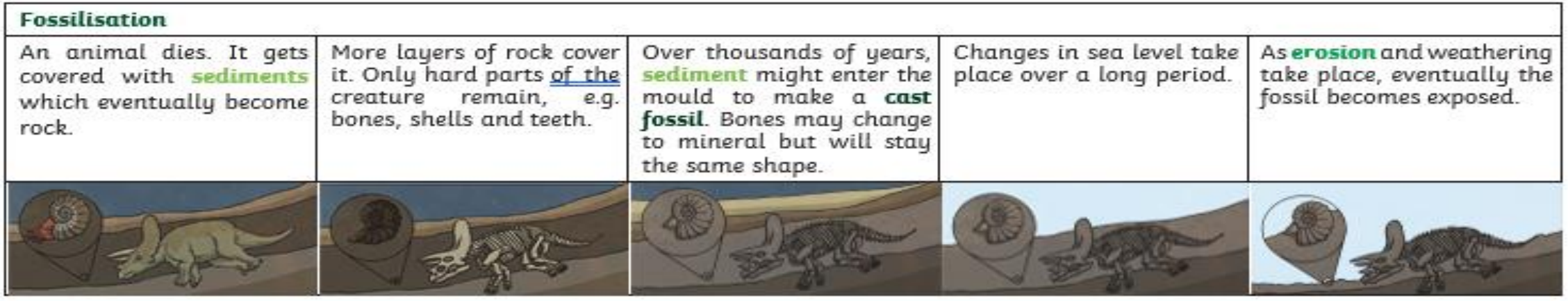
Some words you might use to discuss the properties of a rock:

hard, soft, **permeable**, **impermeable**, durable (meaning resistant to weathering), high density, low density. Density measures how 'bulky' the rock is (how tightly packed the molecules are).

Year 3 Rocks and soils

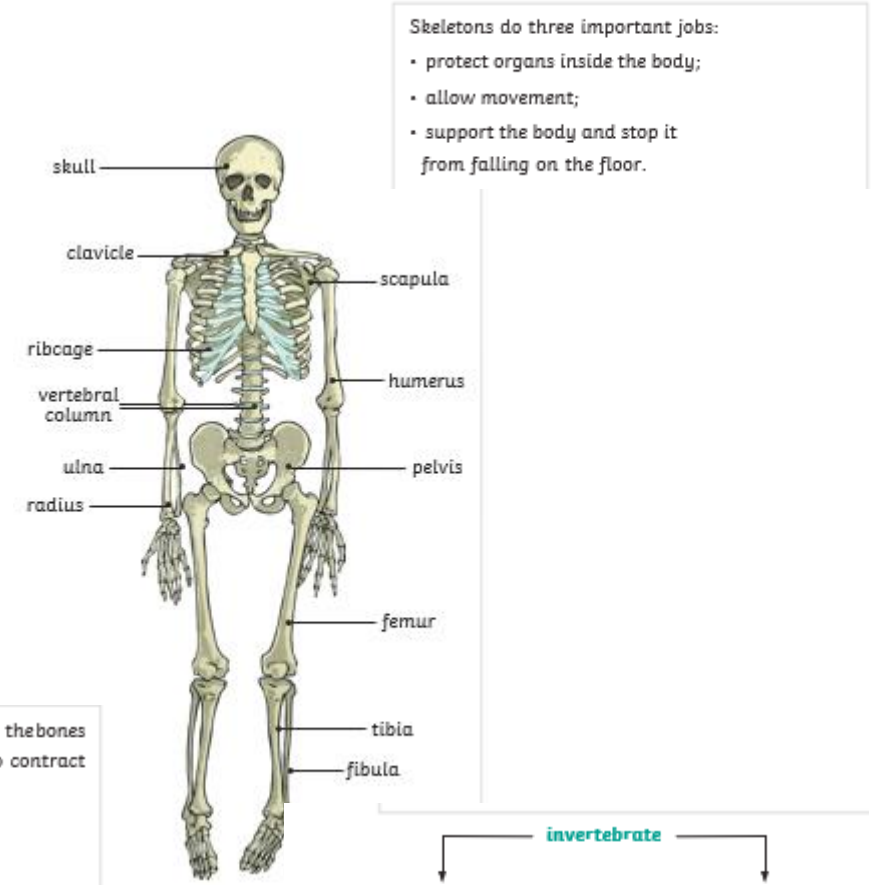
Key vocabulary	
fossilisation	The process by which fossils are made.
palaeontology	The study of fossils.
erosion	When water, wind or ice wears away land.

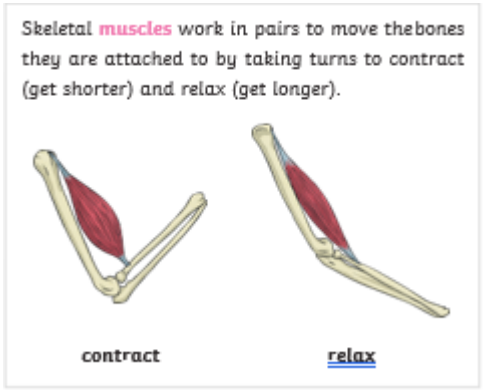


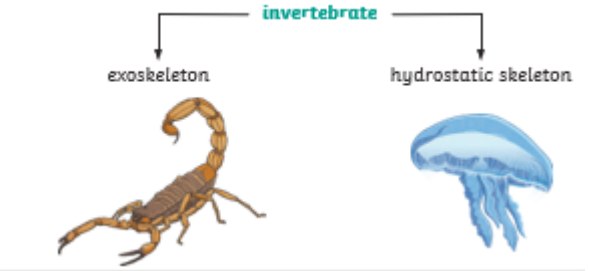


Year 3 Animals Including Humans

Key vocabulary	
Vertebrate	animals with backbones
Invertebrate	Animals without backbones
Muscles	soft tissues in the body that contract and relax to cause movement
Tendons	cords that join muscles to bones
Joints	areas where two or more bones are fitted together

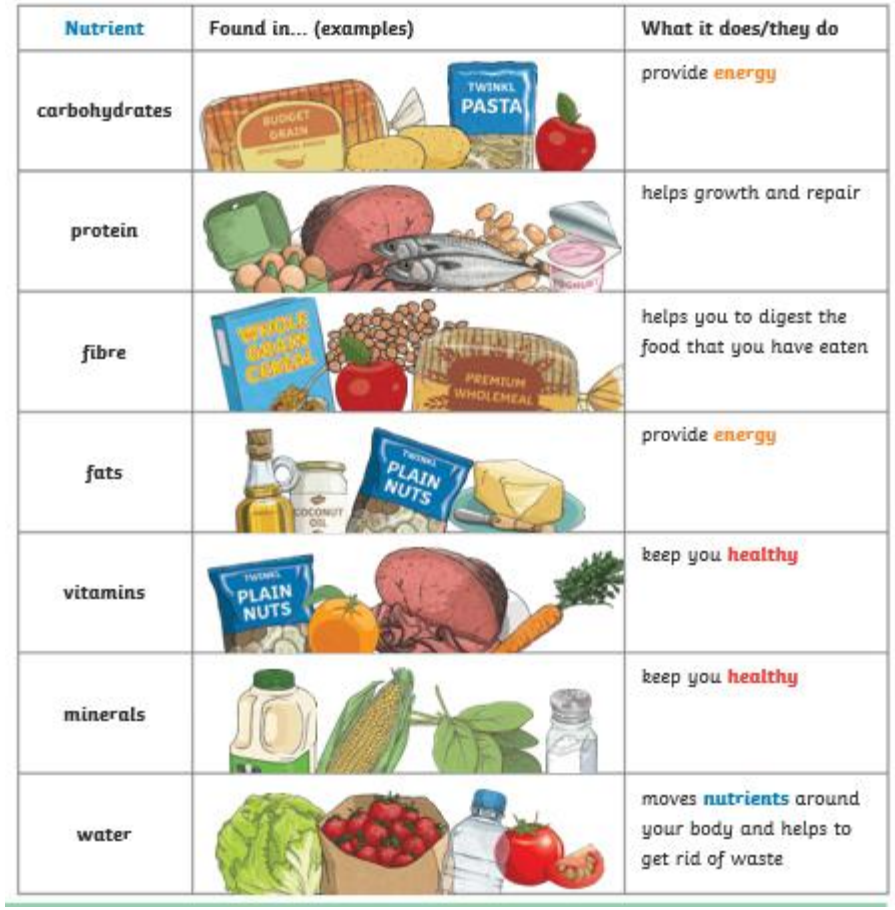






Year 3 Animals Including Humans

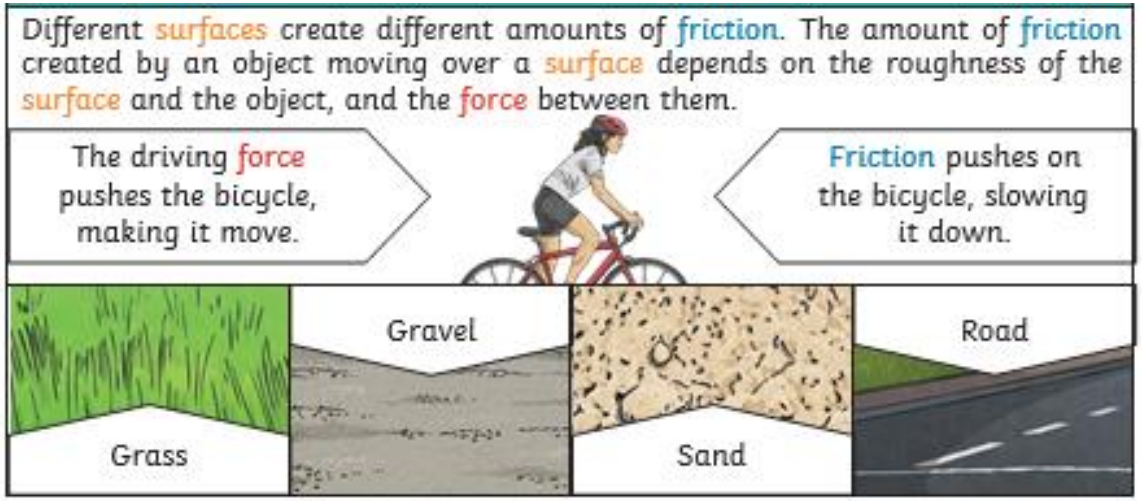
Key vocabulary	
Healthy	in a good physical and mental condition
Nutrients	substances that animals need to stay alive and healthy
Energy	strength to be able to move and grow
Saturated fats	types of fats, considered to be less healthy, that should only be eaten in small amounts
Unsaturated fats	fats that give you energy, vitamins and minerals

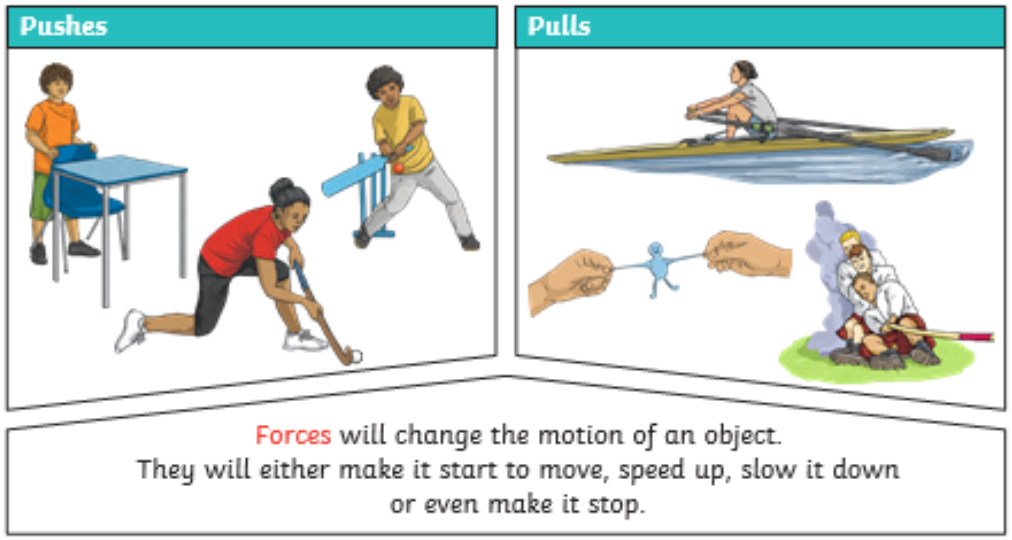


- Living things need food to grow and to be strong and **healthy**.
- Plants can make their own food, but animals cannot.
- To stay **healthy**, humans need to exercise, eat a **healthy** diet and be hygienic.
- Animals, including humans, need food, water and air to stay alive.

Year 3 Forces and magnets

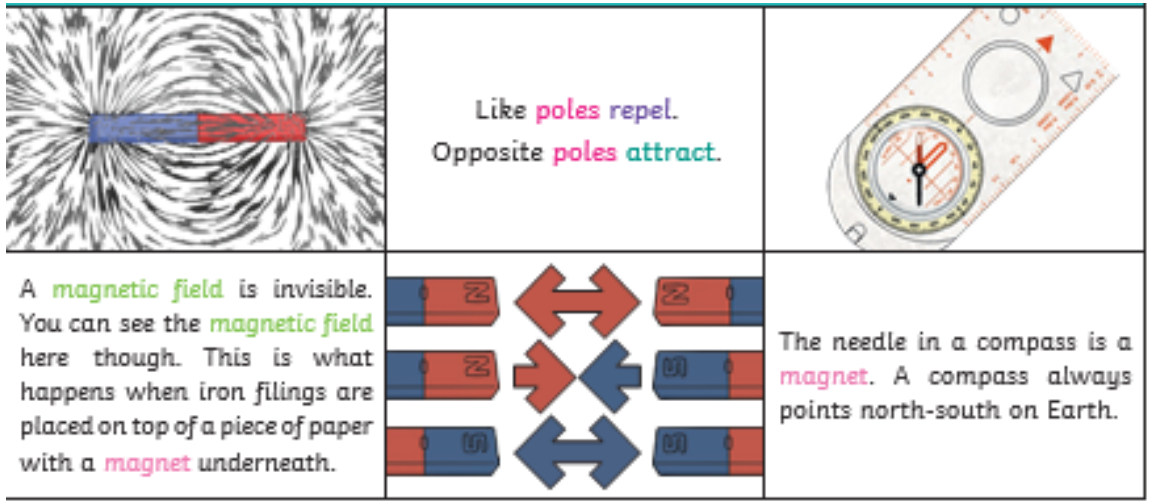
Key vocabulary	
Forces	Pushes or pulls
Friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other.
surface	The top layer of something.
magnet	An object which produces a magnetic force that pulls certain objects towards it.
magnetic	Objects which are attracted to a magnet are magnetic. Objects containing iron, nickel or cobalt metals are magnetic.

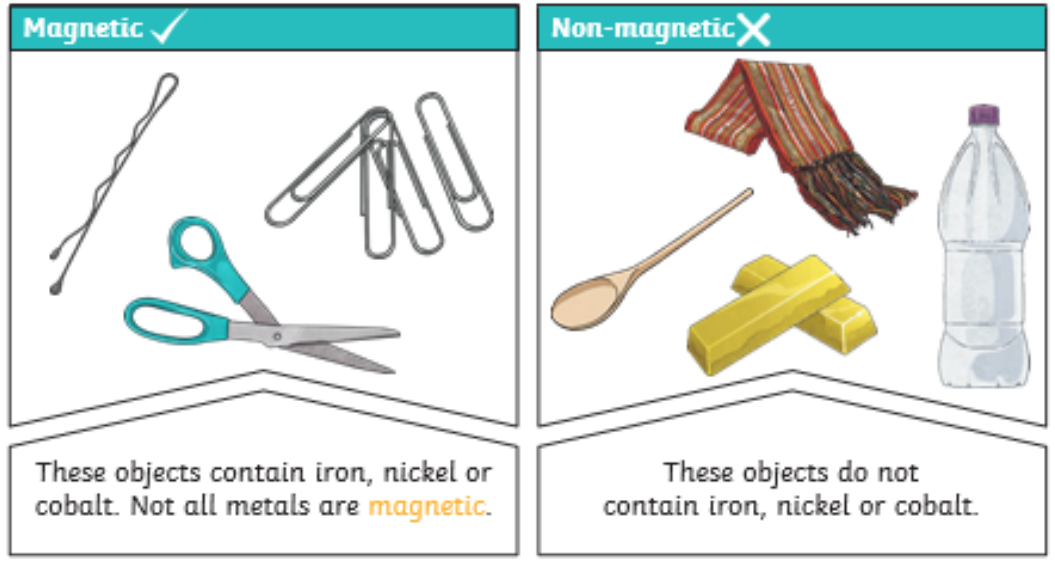




Year 3 Forces and magnets

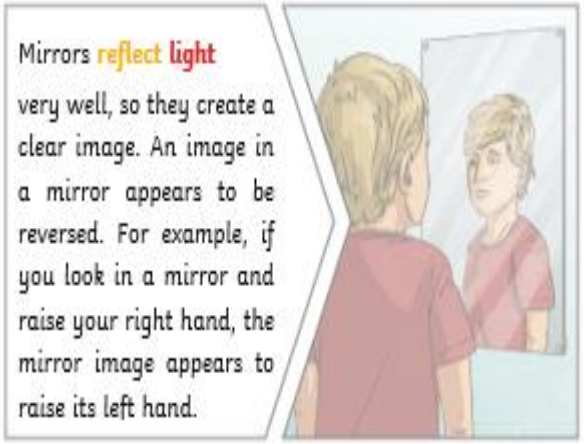
Key vocabulary	
magnetic field	The area around a magnet where there is a magnetic force which will pull magnetic objects towards the magnet.
poles	North and south poles are found at different ends of a magnet.
repel	Repulsion is a force that pushes objects away. For example, when a north pole is placed near the north pole of another magnet, the two poles repel (push away from each other).
attract	Attraction is a force that pulls objects together. For example, when a north pole is placed near the south pole of another magnet, the two poles attract (pull together).

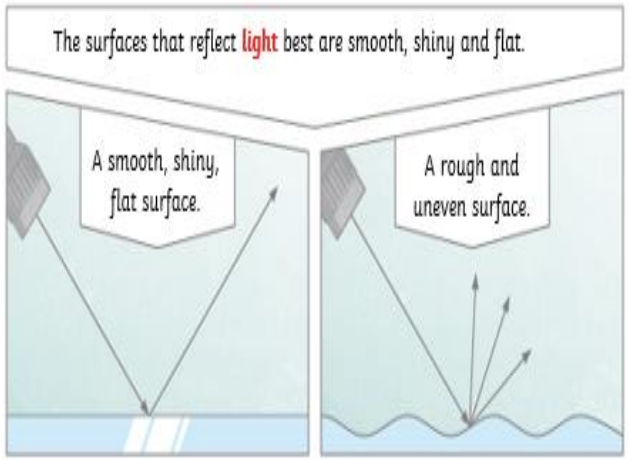




Year 3 Light

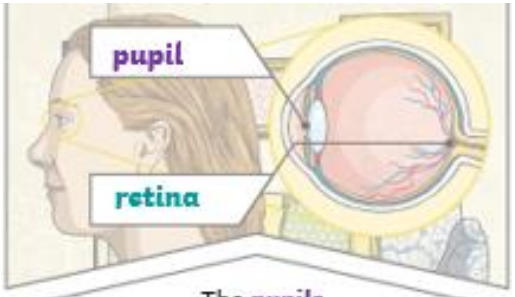
Key vocabulary	
Light	A form of light energy that travels in a wave from a source.
Light source	An object that makes its own light.
Dark	Dark is the absence of light.
Reflection	The process where light hots the surface of an object and bounces back into our eyes.
Reflect	To bounce off.
Reflective	A word to describe something which reflects light well.
Ray	Waves of light are called light rays. They can also be called beams.





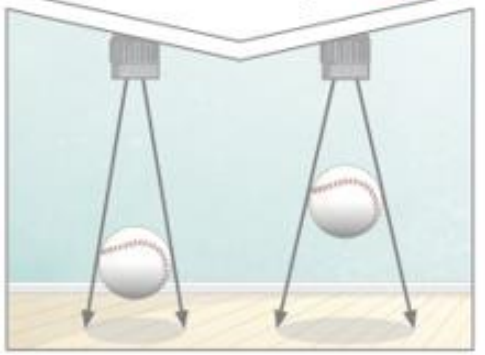
Year 3 Light

Key vocabulary	
Pupil	The black part of the eye which lets light in.
retina	A layer at the very back of the eye. The retina takes the light the eye receives. It then changes it into nerve signals to send to the brain.
shadow	An area of darkness where light has been blocked.
opaque	Describes objects that do not let any light pass through them.
translucent	Describes objects that let some light through, but scatter the light so we can't see through them properly.
transparent	Describes objects that let light travel through them easily, , meaning you can see through the object.



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.

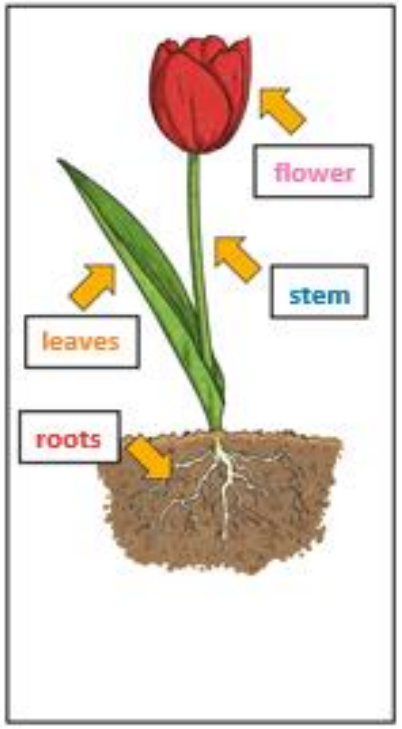
A **shadow** is caused when **light** is blocked by an **opaque** object. A **shadow** is larger when an object is closer to the **light** source. This is because it blocks more of the **light**.



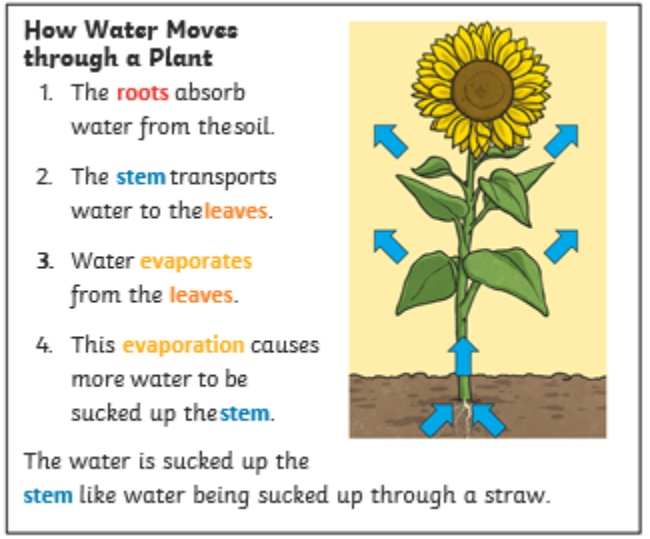
When the **light** source is directly above the object, the **shadow** will be directly underneath.

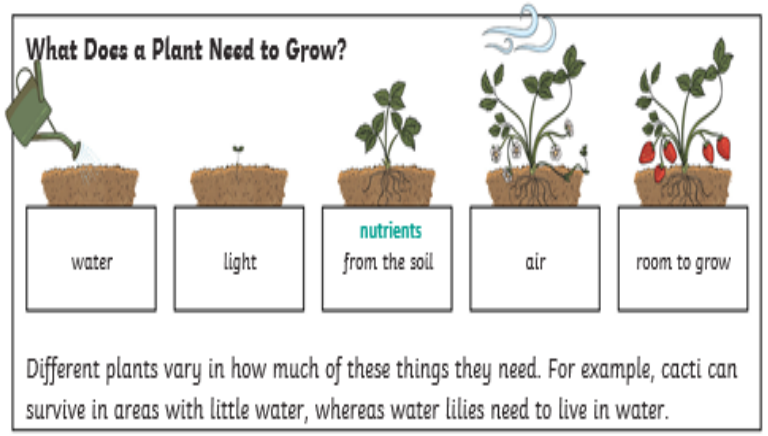
When a **light** source is to one side of an object, the **shadow** will appear on the opposite side. The **shadow** will also be longer.

Year 3 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 pollination to the plant.
nutrients	These substances are needed by 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.





Year 3 Plants

Key vocabulary	
fertilisation	When the male and female parts of the **flower** have mixed in order to make seeds for new plants.
petal	The brightly coloured part of the **flower** that attracts insects to **pollinate** the plant.
stamen	The male parts of the **flower**. The **stamen** is made up of the anther and the filament. The filament's job is to hold up the anther. The job of the anther is to make the pollen.
carpel (pistil)	The female parts of the **flower**. Made up of the stigma, style and ovary. The job of the style is to hold up the stigma. The stigma collects the pollen when a **pollinator** brushes by it. The ovary contains the ovules, which are the part of the **flower** that gets **fertilised** and eventually becomes the new seed.
sepal	Leaf-like structures that protect the **flower** and **petals** before they open out.
Pollination	When pollen (a fine powdery substance produced by a **flowering** plant) is moved from the male anther of a **flower**to the female stigma.
pollinator	Animals or insects which carry pollen between plants. Examples include birds, bees and bats.
germination	When a seed starts to grow.