Great Moor Junior School
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Respect, Kindness, Tolerance, Responsibility, Co-operation

Year 3

Rocks, Fossils and Soils

Sedimentary

These rocks form under the sea. Rocks are broken into small pieces by wind/ water (erosion). They settle as mud, sand, minerals and even remains of living things. Over time, layers pile up and the pressure turns this sediment into rock.

limestone
chalk
sandstone

Igneous

Far underground, the temperature is so hot, rock melts into a liquid (molten rock).

When the liquid is underground it is called 'magma' and it can cool to form an intrusive rock. When it spills out (volcano), the liquid is called 'lava' and it cools to form extrusive rock.

obsidian
granite
basalt

Metamorphic

When sedimentary or igneous rock is near magma, it heats up and chemicals change in the rock. However, it does not heat up enough to melt it. As it cools it becomes metamorphic rock

marble
quartzite
slate

MAN-MADE ROCKS (ANTHROPIC)

These rocks are made by humans.

CONCRETE – a mixture of water, sand/rock/gravel and cement (chalk & clay)

BRICKS – Clay soil, sand or lime which have been air-dried or fire-hardened.

MOCK ROCK – Victorians made rock gardens and surfaces that looked like rock

Fossils

A fossil is the remains or the impression left by a prehistoric plant or animal embedded in rock.

It takes place in sedimentary rock because the heat from lava and magma in igneous and metamorphic rock would be too high for fossils to survive.

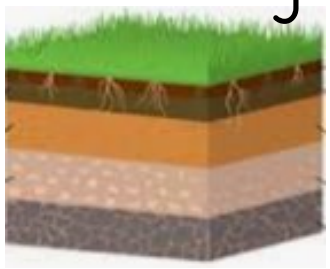
1.) An animal, creature or plant dies and ends up at the bottom of the sea. It gets covered in a layer of rock.

2.) Over time, more layers of rock form on top and the only thing which would remain are the bones or the space where the bones used to be (mold fossils).

3.) Sometimes sediment enters the space where the bones used to be and takes the shape of the creature (cast fossil).

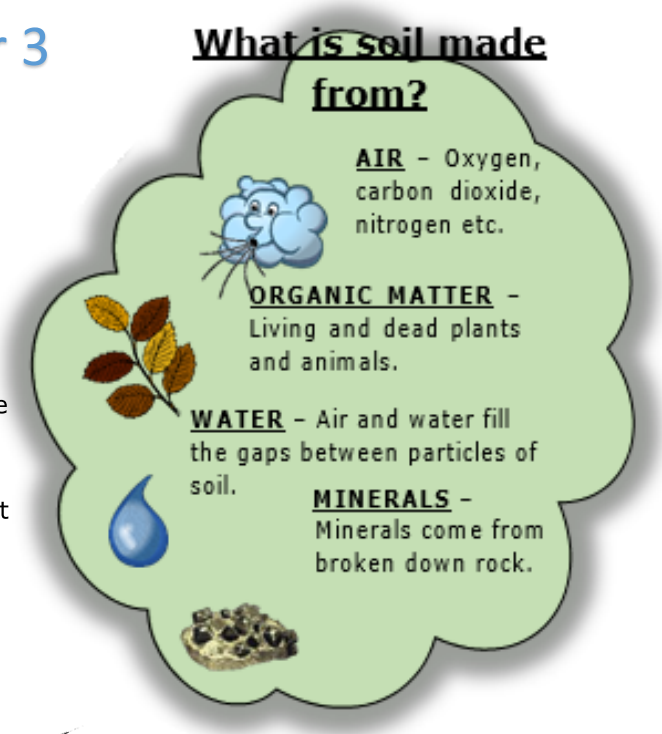
4.) Over a long period, the sea may recede/ go back leaving the rock.

Soil Layers



Organic Matter
Topsoil
Subsoil
Parent material
Bedrock

What is soil made from?



Properties of Rocks

1.) HARD / SOFT – Some rocks need to be cut or split with tools because they are so hard (e.g. granite) but others are soft and can be moulded (e.g. clay).

2.) PERMEABLE / IMPERMEABLE – Permeable rocks allow water to pass through (e.g. pumice) but impermeable rocks do not let water pass through (e.g. marble)

3.) DURABLE – Rocks which are resistant to erosion last longer and are more durable. Buildings are often made with these (e.g. limestone)

4.) DENSITY – If the particles in the rock are tightly packed then it has a high density. These rocks would sink in water (e.g. basalt).

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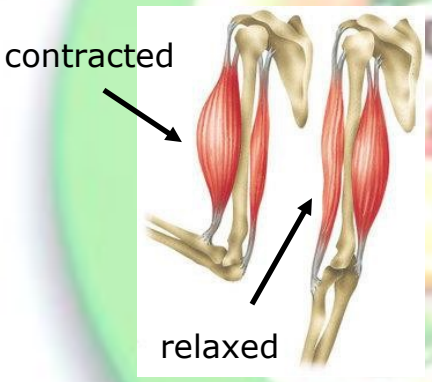
Nutrition and the Skeletal System

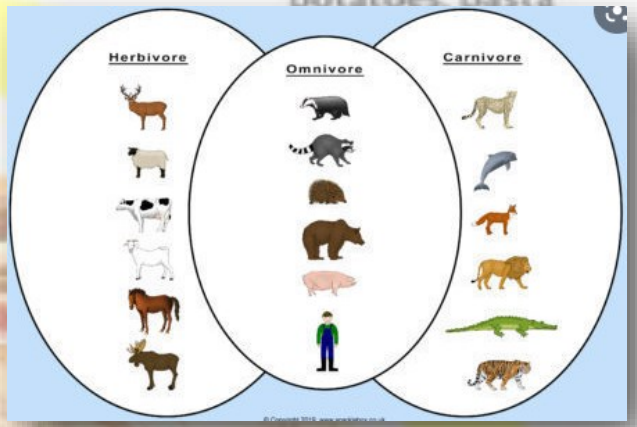
MUSCLES

Skeletons move because bones are attached to muscles.

When a muscle contracts (bunches up), it gets shorter and so pulls up the bone it is attached to.

When a muscle relaxes, it goes back to its normal size.





Herbivore - An animal that eats only plants

Omnivore - An animal that eats plants and meat

Carnivore - An animal that eats only meat

collar bone (connects the arms to the body)

skull (protects the brain)

shoulder (joint)

ribcage (protects the lungs and heart)

spine (keeps the body upright)

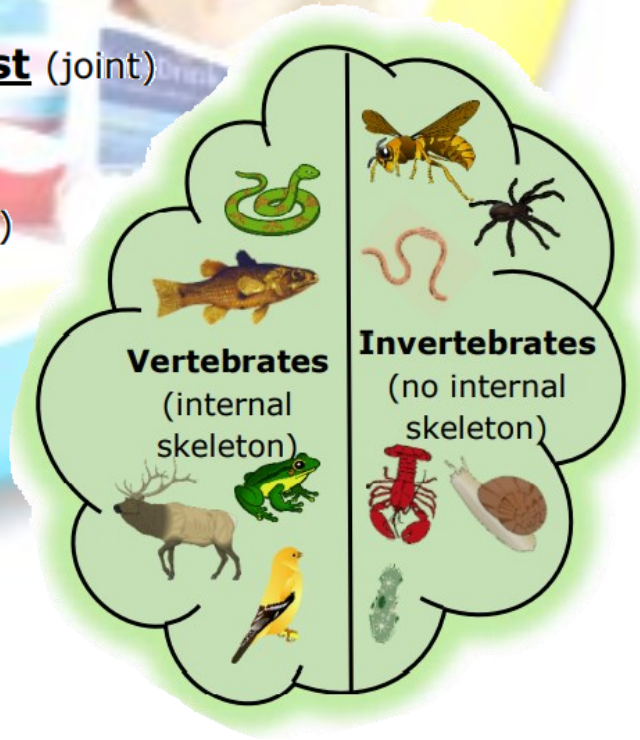
elbow (joint)

pelvis (balance and support the legs)

wrist (joint)

knee (joint)

ankle (joint)



HEALTHY EATING

To keep your body fit and healthy you need a balanced diet using all of the food groups.

Carbohydrates – Main source of energy for our bodies (rice, potatoes, pasta and bread). Protein – Repairs and builds muscles, organs and immunity (fish, meat, eggs and cheese).

Sugar and Fats – Stored for energy and creates a layer of fat to keep us warm. Should not have too much of these (chocolate, sweets, butter, oil, cream).

Vitamins and Minerals – Keeps us growing and fighting infections (fruit and vegetables

Parts of a Plant

FLOWERS

The flowers are often brightly coloured and smell to attract insects. Insects help with the plants reproduction through pollination.

LEAVES

The leaves use light from the sun, along with carbon dioxide from the air and water to make food for the plant. This process is called photosynthesis.

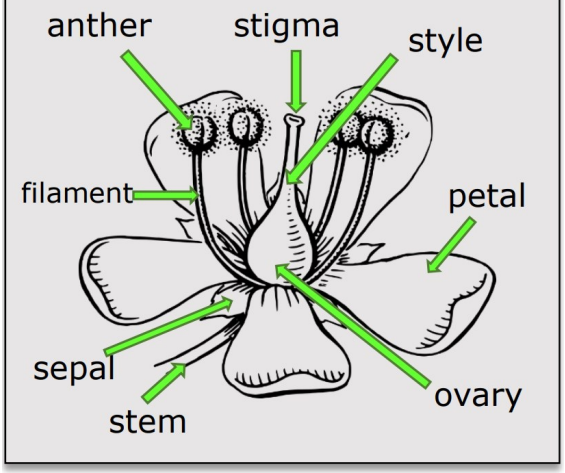
STEM / TRUNK

The stem carries water and nutrients to different parts of the plant. They keep the plant upright.

ROOTS

The roots of a plant take up water and nutrients from the soil. The roots also keep the plant steady and upright in the soil; they "anchor" the plant.

PARTS OF A FLOWER



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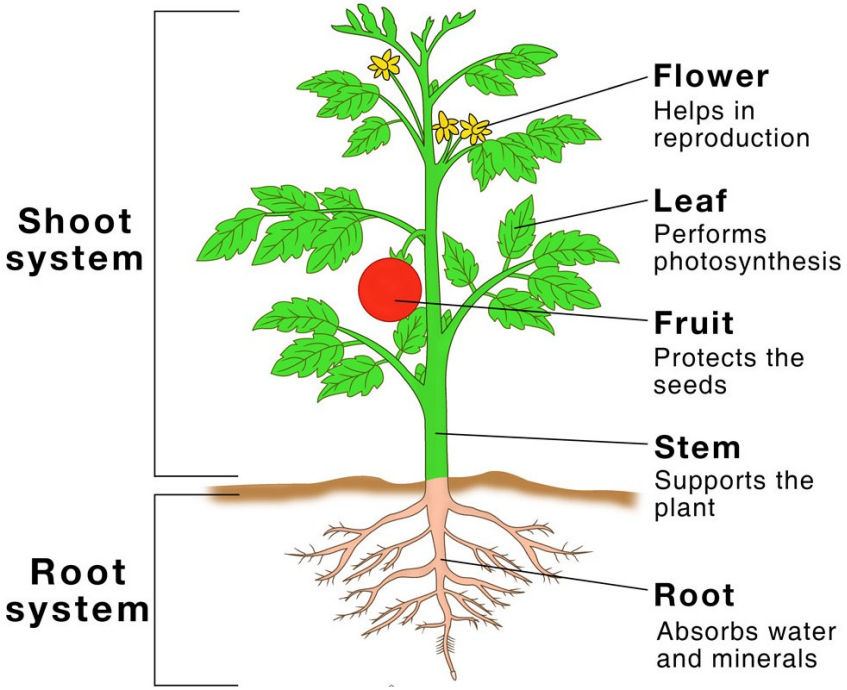
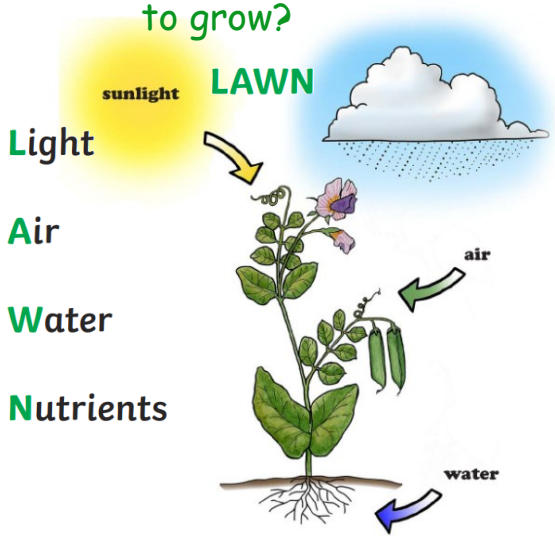
Plants



Not all plants produce flowers. These non-flowering plants, such as Ferns and mosses. They grow from spores instead of seeds. Non-flowering plants as well as flowering plants make their own food through photosynthesis.

What do plants need to grow?



PLANT REPRODUCTION

Pollination - Pollen is carried by insects or blown by the wind from one flower to another. This process is called pollination.

Fertilisation - Pollen reaches the carpel of the new flower. Pollen then travels to the ovary where it fertilises egg cells (ovules) to make seeds. This process is called fertilisation.

Seed Dispersal - The seeds are scattered by animals or the wind. This process is called dispersal. Some of the seeds will grow into new plants.

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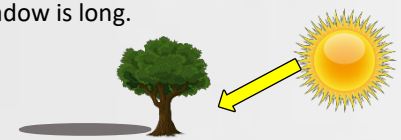
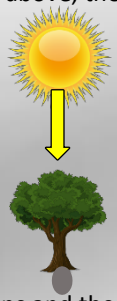
Light

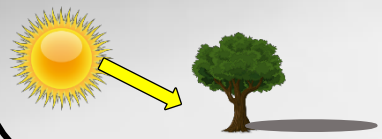
As the earth spins, it makes the sun appear to rise in the east in the morning. Because the sun hits an object at an angle, the shadow is long.



As the earth continues to spin the sun is overhead by midday. Because the sun hits the object from above, the shadow is short.



As the earth spins and the sun sets in the west in the evening, the shadow is long.

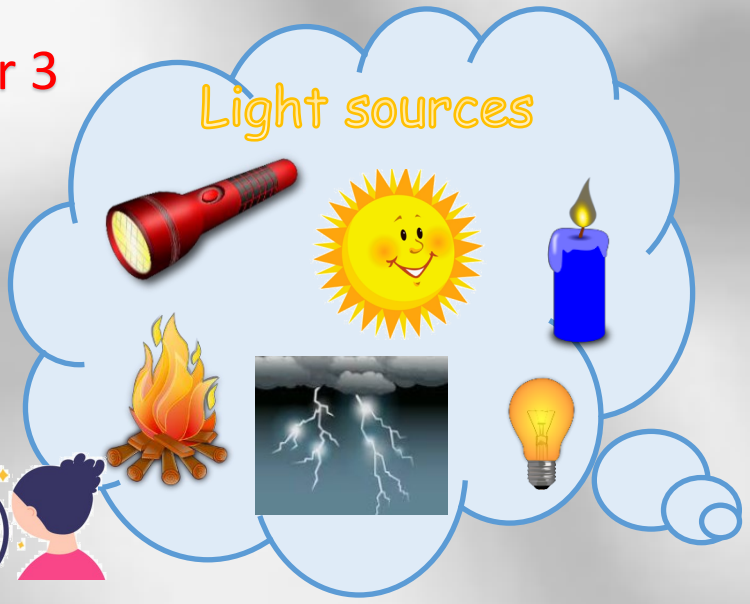


Opaque: This is the name given to objects which light cannot travel through. They block light and create shadows

Translucent: This is the name given to objects which some light can travel through.

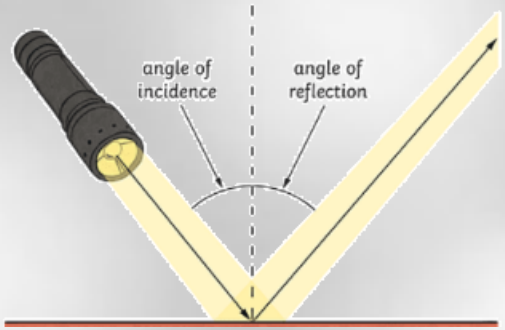
Transparent: This is the name given to objects which light can travel through.

A mirror is not a light source. It reflects light so doesn't create it.



Because light travels in straight lines, when it hits an object, it is blocked. It can't bend around the object so it casts a shadow.

When light hits a smooth object, it bounces off (reflects) making it appear shiny.



Forces are pushes and pulls. No object will move unless a force acts upon it.

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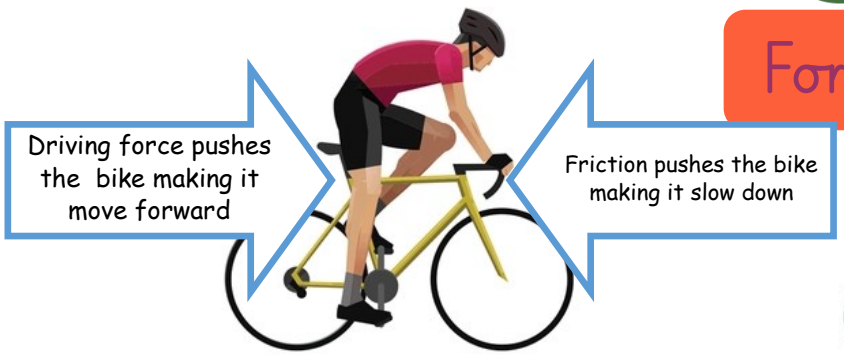
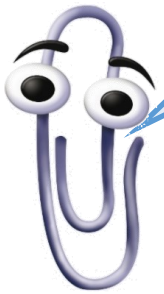
Forces and Magnets



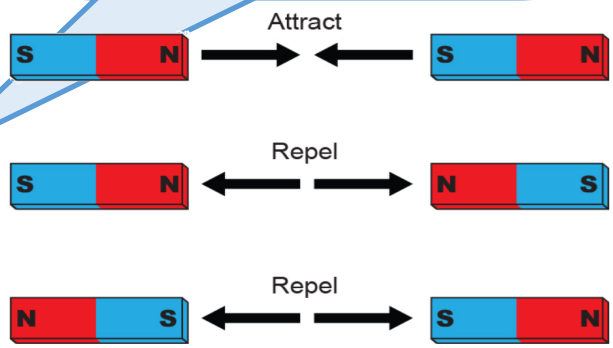
Friction is a force between two surfaces when they slide against each other.

Forces will change the motion of an object. They either make it start to move, slow down or even make it stop!



The same poles repel / The opposite poles attract If you try to put two magnets together with the same poles pointing towards one another, the magnets will push away from each other.

We say they repel each other. Opposite poles attract and are brought together.



North

South

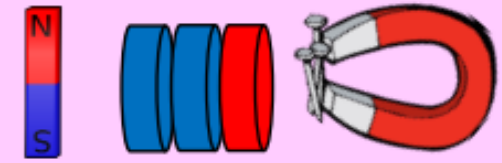
Earth is like a giant magnet with a magnetic north and south pole. A compass points to the north pole because of Earth's magnetic field.

What is a Magnet?

A magnet is a special object which produces an area of magnetic force around itself called a ***magnetic field***.

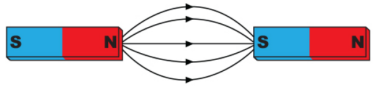
If a ***metal*** object enters this magnetic field, they will be attracted towards the magnet and end up sticking to it. (Non-metallic objects such as wood, plastic or fabric would not be attracted to it.)

Here is a range of different magnets:



Bar Button Horseshoe

Cylindrical Ring Arc / Crescent



When two magnets are close, they create pushing or pulling forces on one another. These forces are strongest at the ends of the magnets. The two ends of a magnet are known as the North Pole (N) and the South Pole (S).