

Year 3
Science Knowledge
Organisers



PLANTS

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What you should already know:

- Plants need water, nutrients, light, the right temperature, space and time to grow.
- Plants begin life as seeds or bulbs.
- Plants have a life cycle, that includes the seed, seedling and flowering stages.

Vocabulary:

Fertilisation - in plants, where pollen meets the ovule to form a seed

Seed formation - Seeds can develop after pollination. They can be found in berries or fruits

Seed dispersal - Seeds can be dispersed in different ways, for example, wind, animals or water.

Germination - if a seed germinates or if it is germinated, it starts to grow

Pollination - When pollen is transferred to female parts of a flower. This can be done by wind or insects.

Methods of seed dispersal:

by animals



by wind



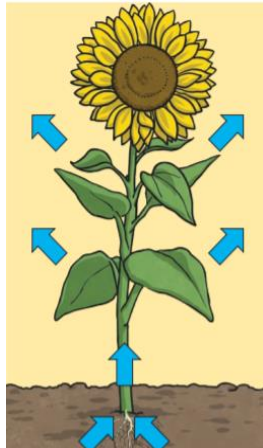
in water



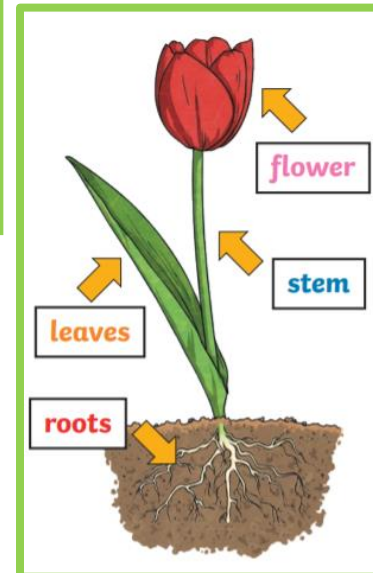
seed pod exploding



1. The roots absorb **water** from the soil.
2. The stem transports **water** to the leaves.
3. **Water** evaporates from the leaves.
4. This evaporation causes more **water** to be sucked up the stem (like a straw.)



Life Cycle of a Sunflower

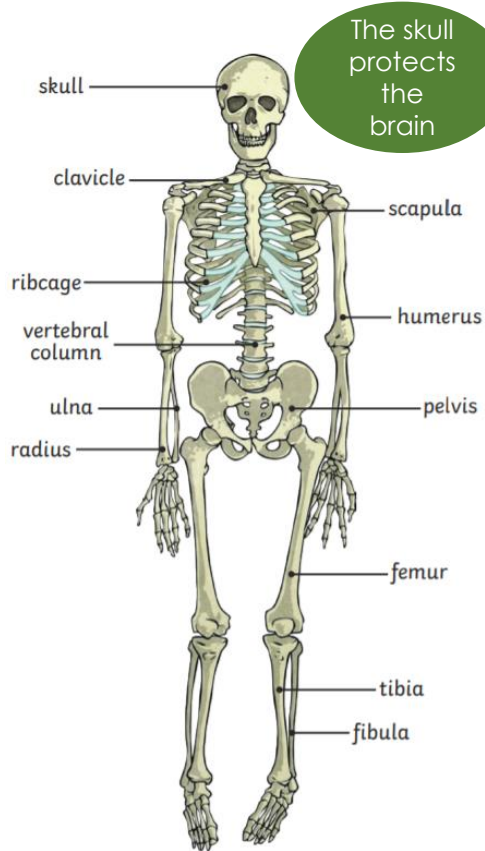


Animals including Humans

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Vocabulary:

Nutrition – food needed to be healthy and grow.

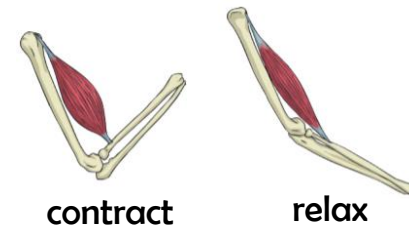
Nutrients – useful substances from food that help animals and plants grow.

Skeleton – this supports and protects the body, allowing it to move. The skeleton is made up of bones.

Bones – the hard parts inside your body that make up your skeleton.

Muscles – these are attached to the bones and help us to move.

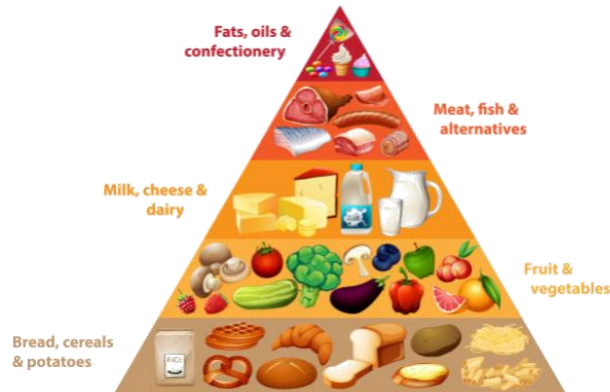
Joints – where 2 bones join together.



Skeletal muscles work in pairs to move the bones they are attached to by taking turns to contract (get shorter) and relax (get longer).

Skeletons do 3 important jobs:

1. Protect organs inside the body;
2. Allow movement;
3. Support the body and stop it from falling on the floor.



Nutrient	Found in... (examples)	What it does/they do
carbohydrates		provide energy
protein		helps growth and repair
fibre		helps you to digest the food that you have eaten
fats		provide energy
vitamins		keep you healthy
minerals		keep you healthy
water		moves nutrients around your body and helps to get rid of waste

ROCKS



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Vocabulary:

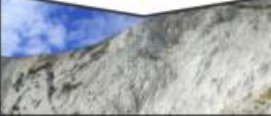
Igneous rocks – Rock that has been formed from magma or lava.

Sedimentary rocks – Rock that has been formed by layers of sediment being pressed down hard and sticking together.

Metamorphic rocks – Rock that started out as igneous or sedimentary rock but changed due to being exposed to extreme heat or pressure.

Fossil – The bones or other remains of living things are naturally preserved in rocks as fossils.

Soil - Ground up rock mixed with plant and animal remains.

Igneous	Sedimentary	Metamorphic
Obsidian 	Chalk 	Marble 
Granite 	Sandstone 	Quartzite 
Basalt 	Limestone 	Slate 

Hard
or
soft?

Crystals?

Absorbs
water?

Layers?

Rough or
smooth?

Fossilisation:

An animal dies. It gets covered with **sediments** which eventually become rock.



More layers of rock cover it. Only hard parts of the creature remain, e.g. bones, shells and teeth.



Over thousands of years, **sediment** might enter the mould to make a **cast fossil**. Bones may change to mineral but will stay the same shape.



Changes in sea level take place over a long period.

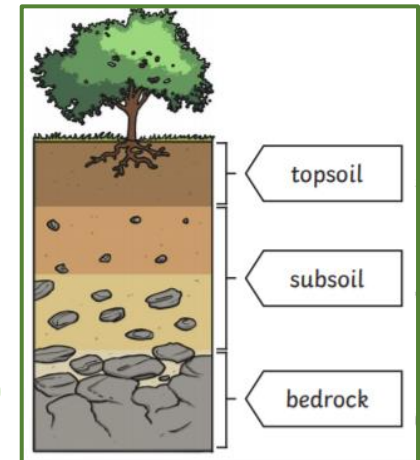


As **erosion** and weathering take place, eventually the fossil becomes exposed.



Soil is a mixture of different things:

- minerals from finely broken-down rock
 - air
 - water
- organic matter (including living and dead plants and animals).



Fossil



LIGHT



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Vocabulary:

Light – something that lets us see.

Dark – when there is no light.

Light source – objects that give off their own light. Eg: the Sun, lightbulbs and candles.

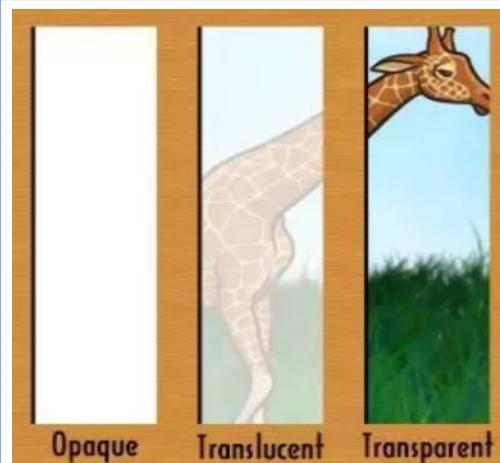
Transparent - A material that is completely see through so all the light can pass through.

Translucent - A material that lets some light through but not all of it

Opaque - A material that light cannot pass through. You cannot see through it.

Reflect – When light bounces off a surface.

Shadow – These are formed when an object blocks the light.

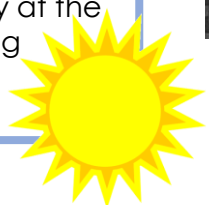


We can see through transparent materials but not opaque materials.

Shiny surfaces reflect light very well.

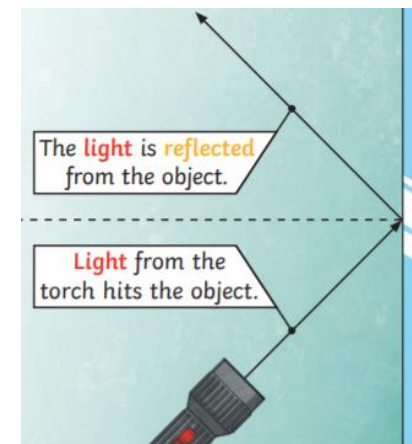


Matte surfaces don't reflect light very well.



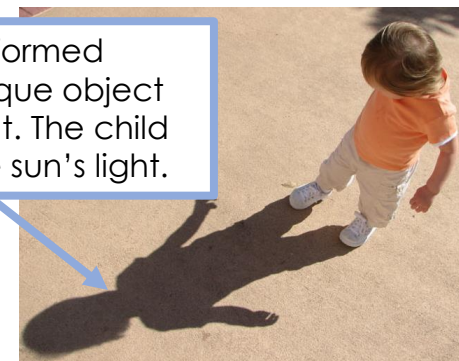
The light from the sun can be dangerous and can damage our eyes. We must not look directly at the sun and we can protect our eyes by wearing sunglasses or sunhats in bright sunshine.

Light travels in a straight line from the light source. When it hits an object it is reflected (bounces off). When the reflected light hits our eyes, we can see the object.



Shadows:

Shadows are formed when an opaque object blocks the light. The child is blocking the sun's light.



We can change **the size of the shadow** by changing the position of the light source, object or the surface where the shadow is being made.

Forces and Magnets

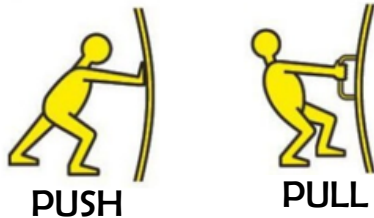
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What is a force?

A force is the push or pull of an object in a particular direction. Forces are shown by arrows in diagrams. The bigger the arrow, the bigger the force. The direction of the arrow shows the direction of the force.



Types of magnets:



A magnet does not need to touch an object to attract it.

Vocabulary:

Magnet – attracts magnetic material.

Magnetic force – the invisible force that attracts magnetic materials.

Attract – to pull towards.

Repel – to push away.

Poles – Magnets have 2 poles, a north pole and a south pole.

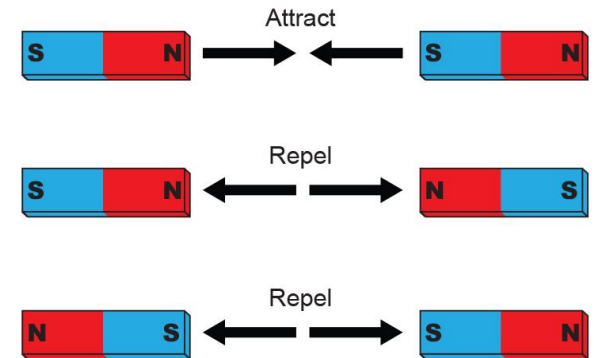
Contact force – when a force needs objects to be touching.

Non-contact force – magnetic force does not need objects to have contact to work. They can work from a distance.

Magnets have **2 poles**, a north pole and a south pole.

Opposite poles attract.

Same poles repel.



Objects that contain **iron**, **nickel** or **cobalt** are magnetic. Not all metals are magnetic!

