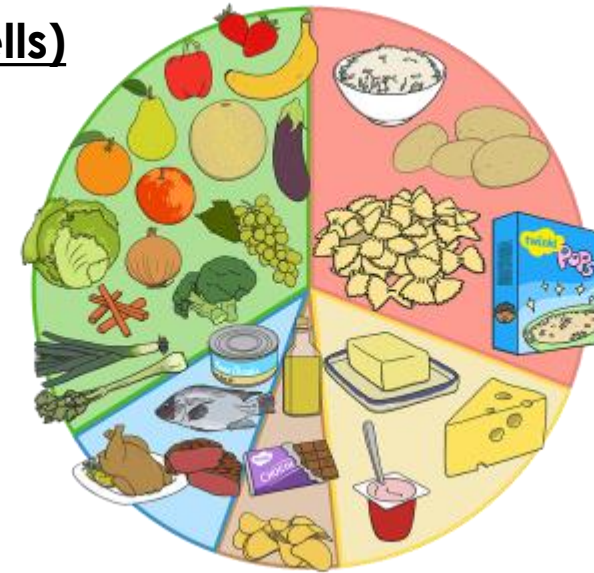


# Knowledge Organiser Science: Animals including Humans

## Concept: Ecosystems, Living things (cells)

### Key Vocabulary

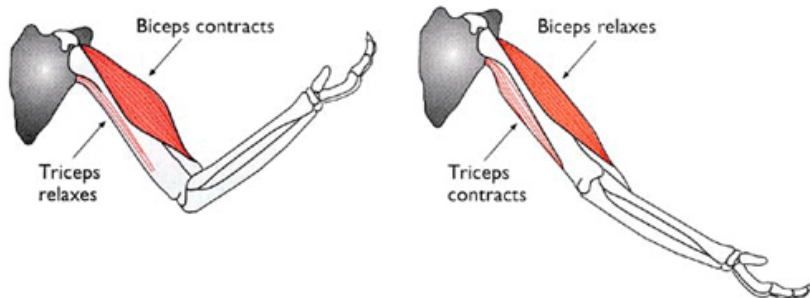
<b>Muscle</b>	Works with joints and bones to allow movement.
<b>Bone</b>	Hard whitish tissue which make up the human skeleton. Bones provide support for the body and protect vital organs.
<b>Joint</b>	The connection where two or more bones join together.
<b>Vitamins &amp; Nutrients</b>	Substances essential for maintenance of life and growth.
<b>Protein</b>	Protein is an essential nutrient responsible for growing, maintaining, and replacing the tissues in our bodies.
<b>Fat</b>	Fats help to fuel the body and absorb vitamins. They also help insulate the body.
<b>Carbohydrate</b>	Carbohydrates are an essential nutrient which are important energy sources for the body.



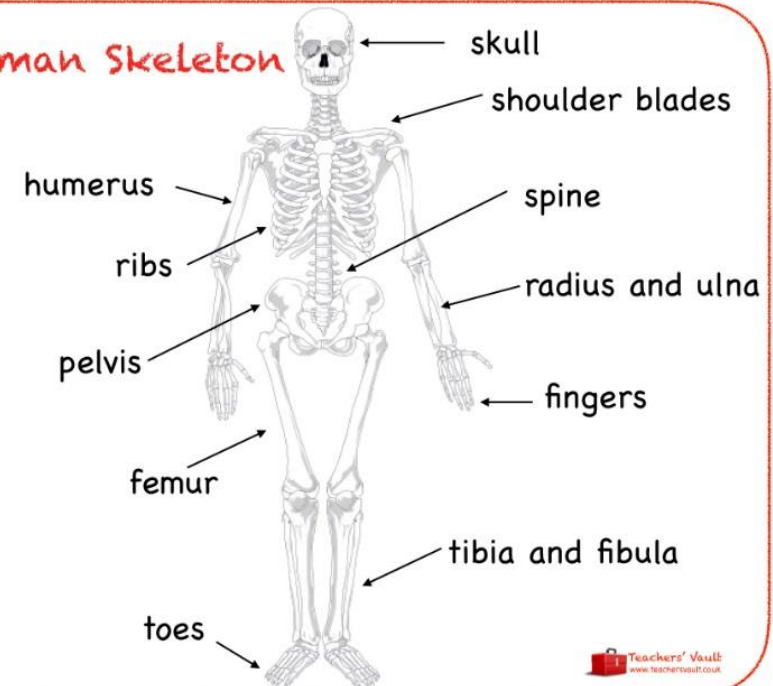
### Skeletons

1. Protect our organs
2. Help us move
3. Support our bodies

### MUSCLES WORK IN PAIRS TO MOVE A BONE



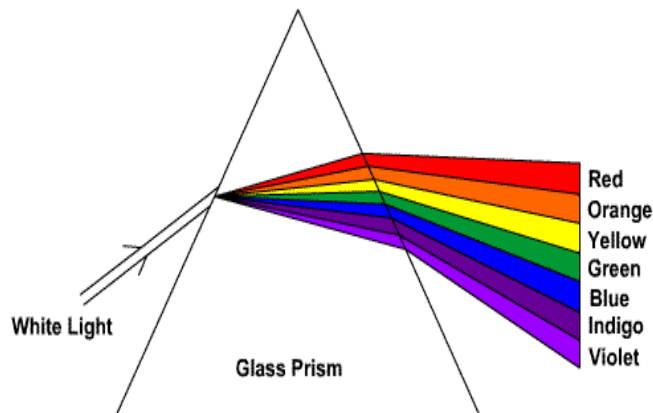
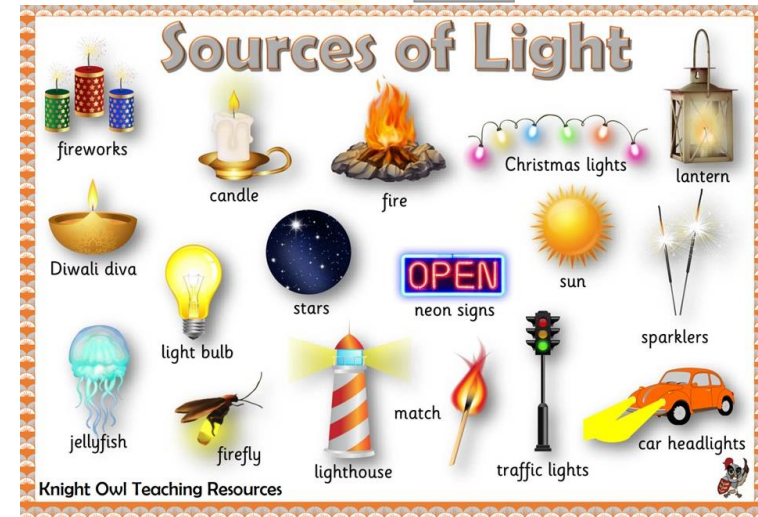
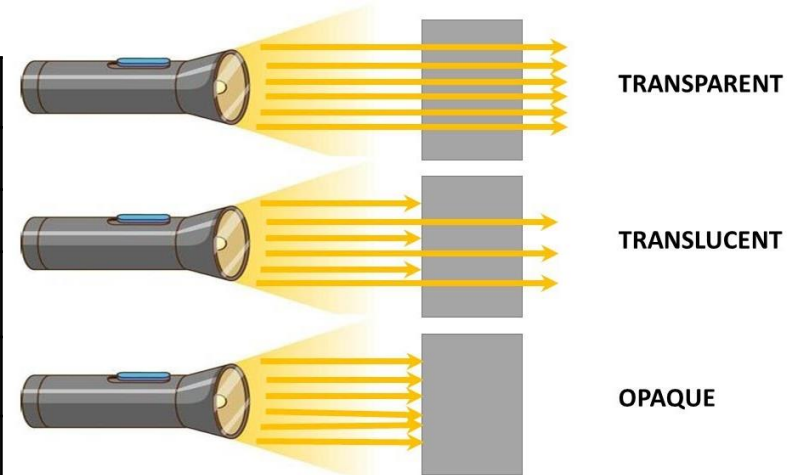
### The Human Skeleton



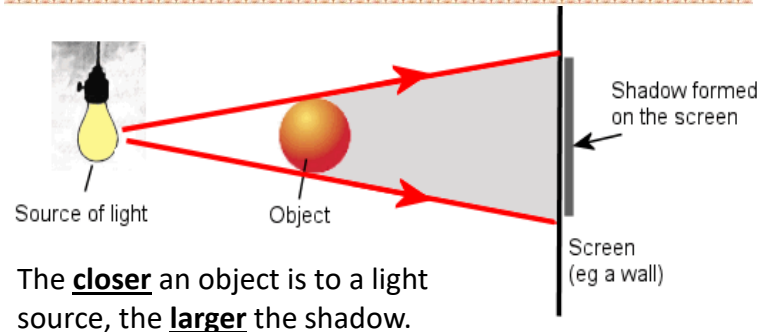
# Knowledge Organiser Science: Light and shadow

## Concept: Energy

Key Vocabulary	
<b>Light source</b>	Objects that give out light.
<b>Reflect</b>	The return of light from a material or surface.
<b>Refraction</b>	When light passes through a different object and its direction changes.
<b>Opaque</b>	An object or material that does not allow any light to pass through it.
<b>Translucent</b>	An object or material that allows some light to pass through it.
<b>Transparent</b>	An object or material that allows all light to pass through it.
<b>Rainbow</b>	An arch of colour caused by the refraction of light on water droplets in the air, usually rain (Red, Orange, Yellow, Green, Blue, Indigo, Violet).
<b>Prism</b>	A solid 3D shape where two end faces are similar and parallel.
<b>Shadow</b>	A dark area or shape caused by the blockage of light.



*When white light passes through a glass prism, it is refracted. The light changes direction and is then dispersed (spread out) as it exits the prism. Depending on the shape of the prism and the angle of the light, we can often see the spectrum of colours.*

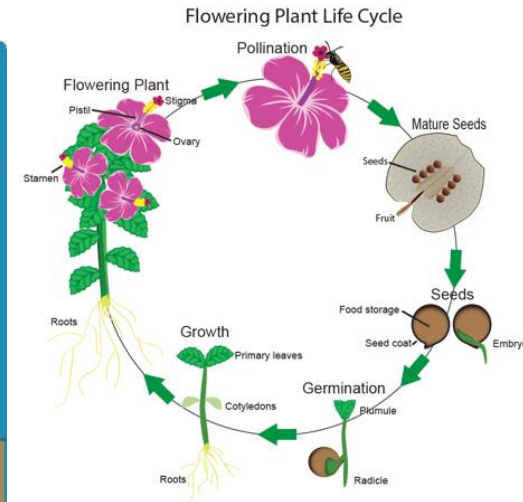
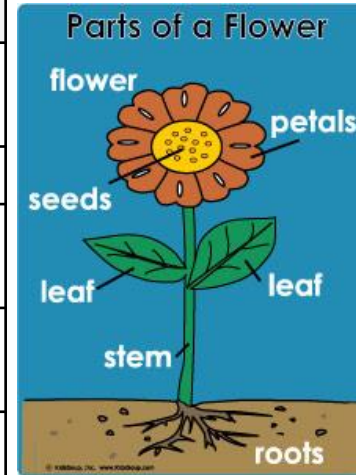


# Knowledge Organiser Science: Plants

## Concept: Living things, Evolution, Living things (cells)

### Key Vocabulary

<b>Carbon Dioxide</b>	A gas produced naturally by animals breathing and burning coal and oil.
<b>Oxygen</b>	A colourless and odourless gas which plants exhale.
<b>Germinate</b>	The process of a seed breaking its coating and sending out its first leaves and roots.
<b>pollination</b>	The transfer of pollen from the male part of a plant to the female part of a plant.
<b>seed dispersal</b>	The movement of seeds away from the parent plant.
<b>nutrient</b>	A substance that provides nourishment for growth.



Life Processes		
<b>M</b>	Movement	All living things move, even plants
<b>R</b>	Respiration	Getting energy from food
<b>S</b>	Sensitivity	Detecting changes in the surroundings
<b>G</b>	Growth	All living things grow
<b>R</b>	Reproduction	Making more living things of the same type
<b>E</b>	Excretion	Getting rid of waste
<b>N</b>	Nutrition	Taking in and using food

### How Seeds Travel

#### by the wind



milkweed



dandelion



maple

#### by animals



beggar-ticks

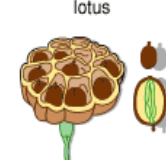


sandbur

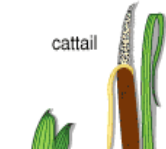


blackberry

#### by water



lotus



cattail



coconut

#### by bursting



violet

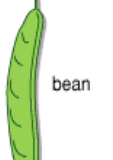


jewelweed



witch hazel

#### by humans



bean



wheat



cherry

# Knowledge Organiser Science: Forces and magnets

## Concept: Forces

### Key Vocabulary

<b>force</b>	A push or pull
<b>magnet</b>	A material or object that produces a magnetic field. It attracts or repels magnetic objects, including iron.
<b>attract</b>	A magnetic force that pulls
<b>repel</b>	A magnetic force that pushes two magnets apart
<b>propel</b>	The act of driving or pushing forward.
<b>friction</b>	A contact force that is caused by one object being pushed across the surface of another
<b>air resistance</b>	The frictional force of air against a moving object. The faster an object moves, the greater the air resistance.
<b>balanced force</b>	Two forces of equal size acting in opposite directions on an object so that it will stay still or continue to move in the same way.



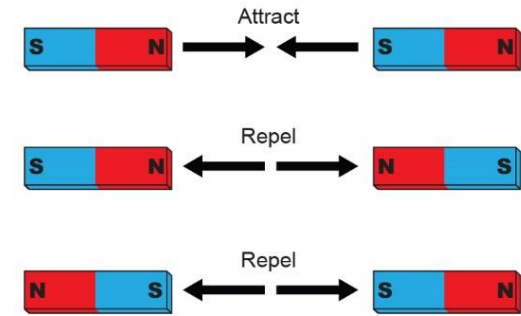
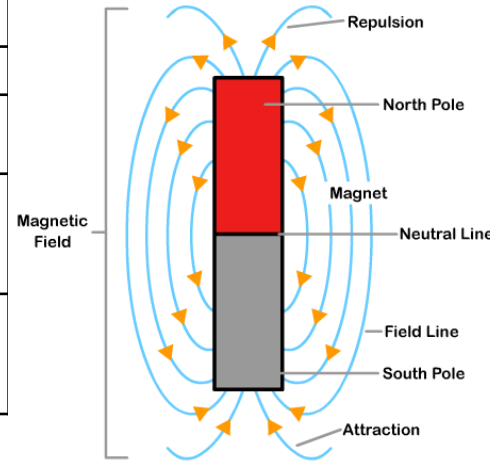
Bar Magnet



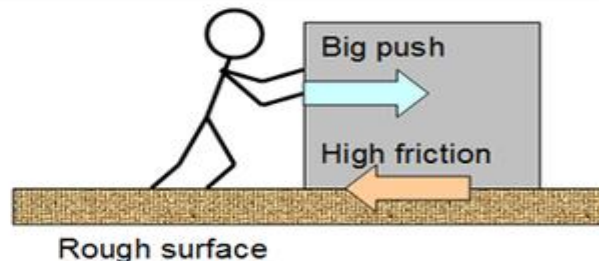
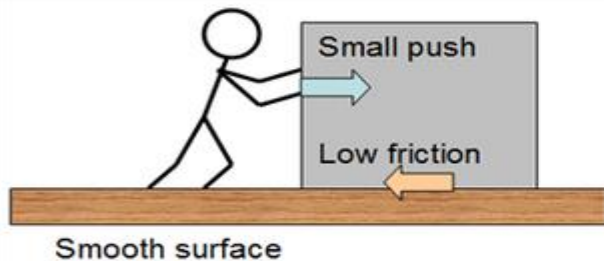
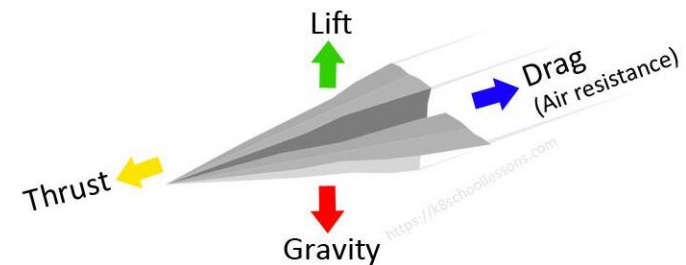
Horseshoe Magnet



Disc Magnet



Forces acting on a paper plane




# Knowledge Organiser Science: Rocks and Fossils

## Concept: Chemistry

### Key Vocabulary

<b>rock</b>	A hard, solid material that is made of minerals and is found in nature.
<b>Lava</b>	Molten rock that comes out of the ground.
<b>mineral</b>	A solid, natural material that does not come from a living thing.
<b>Metamorphic rock</b>	Rock that started out as igneous or sedimentary rock but changed due to being exposed to extreme heat or pressure.
<b>Igneous rock</b>	Rock that has been formed from magma or lava
<b>Sedimentary rock</b>	Rock that has been formed by layers of sediment being pressed down hard and sticking together
<b>rock cycle</b>	The series of changes that rock undergoes over time as it shifts between different types.
<b>fossil</b>	The remains of a plant or animal that turned to stone over a long period of time. Mostly found in sedimentary rock.
<b>weathering</b>	The process of wearing away or otherwise changing Earth's surface, caused by natural forces.
<b>erosion</b>	The process of transporting and wearing away rocks or soil as loose articles that are moved by water, wind, ice or gravity.

### TYPES OF ROCKS

<b>IGNEOUS</b>		<b>SEDIMENTARY</b>		<b>METAMORPHIC</b>	
					
Granite	Scoria	Sandstone	Limestone	Marble	Slate
					
Pumice	Obsidian	Shale	Conglomerate	Gypsum	Quartzite
					
					Gneiss

