Year 3 Spring 2

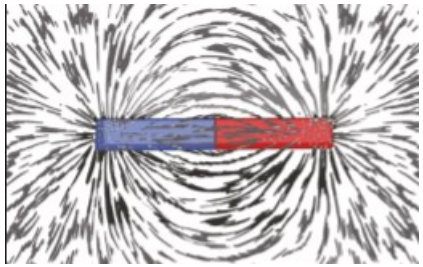
Science Topic : Forces - Magnets

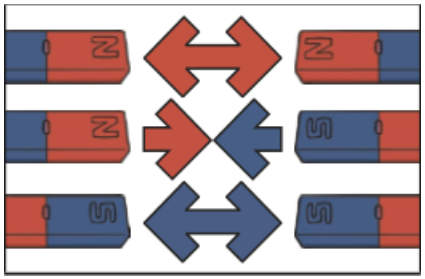
What should I already know?

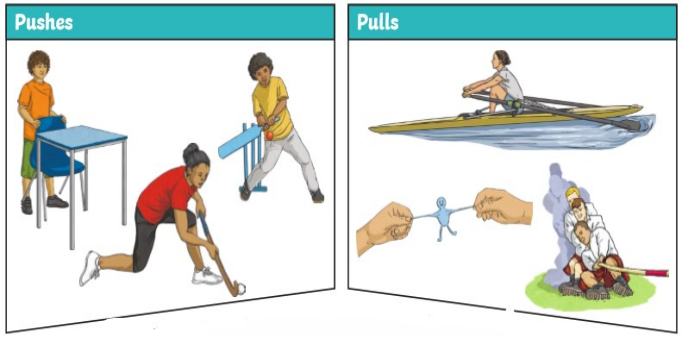
- That objects are made out of different materials such as wood, plastic and metal.
- The properties of objects and their use in everyday objects to fit a purpose.

Key Knowledge:

- Forces can change the motion of an object. They can make them move, speed up, slow down or even stop.
- Different surfaces create different amounts of friction. This can depend on the amount of force by the object and the roughness of the surface.
- A magnetic field is invisible but can be seen using a magnet and iron fillings on some paper.
- A compass always points North-South on Earth.







	Vocabulary
Forces	Pushes or pulls.
Friction	A force that acts between two surfaces or objects that are moving.
Magnet	An object that produces a magnetic force that pulls certain objects towards it.
Magnetic	Objects that are attracted to a magnet are magnetic. They usually contain nickel, cobalt or iron.
Magnetic field	The area around a magnet where there is a magnetic force which will pull magnetic objects towards the magnet.
Surface	The top layer of something.
Poles	North and South poles are found in the ends of magnets.
Repel	Is a force that pushes objects apart. (North and North poles in magnets repel)
Attract	Is a force that pulls objects together. (North and South poles in magnets attract)

The driving **force** pushes the bicycle, making it move.

Friction pushes on the bicycle, slowing it down.

Year 4 Spring 2

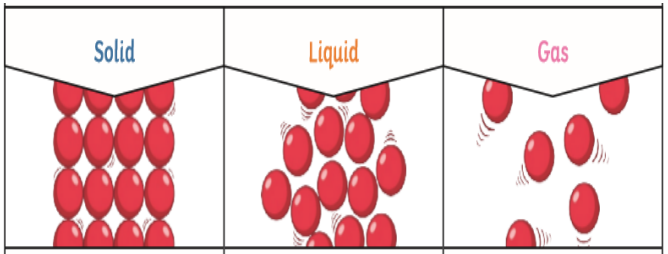
Science Topic : States of Matter

What should I already know?

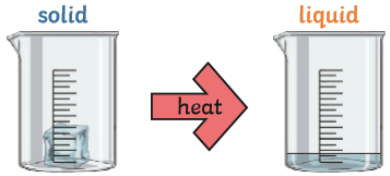
- Water can be heated or cooled to change the state of the mass.
- Water is a material that can change between all 3 states and back.
- Most gases cannot be seen.

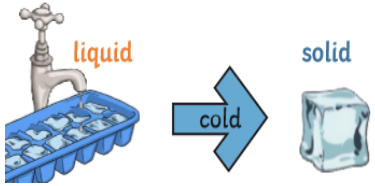
Key Knowledge:

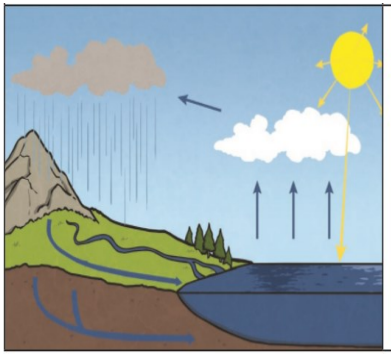
- Condensation and evaporation happens within the water cycle.
- There are three states of matters solids, liquids and gases.
- When water and other liquids reach a certain temperature, they change state into a solid or a gas. The temperatures that these changes happen at are called the boiling, melting or freezing point.



Solid	Liquid	Gas
Particles in a solid are close together and cannot move. They can only vibrate.	Particles in a liquid are close together but can move around each other easily.	Particles in a gas are spread out and can move around very quickly in all directions.







1. Water from lakes, puddles, rivers and seas is evaporated by the sun's heat, turning it into water vapour.
2. This water vapour rises, then cools down to form water droplets in clouds (condensation).
3. When the droplets get too heavy, they fall back to the earth as rain, sleet, hail or snow (precipitation).

Vocabulary

States of Matter	Materials can be one of three states: solids, liquids or gases. Some materials can change from one state to another and back again.
Solids	These are materials that keep their shape unless a force is applied to them. They can be hard, soft or even squashy. Solids take up the same amount of space no matter what has happened to them.
Liquids	Liquids take the shape of their container. They can change shape but do not change the amount of space they take up. They can flow or be poured.
Gases	Gases can spread out to completely fill the container or room they are in. They do not have any fixed shape but they do have a mass.
Water Vapour	This is water that takes the form of a gas. When water is boiled, it evaporates into a water vapour.
Melt	This is when a solid changes to a liquid.
Freeze	Liquid turns to a solid during the freezing process.
Evaporate	Turn a liquid into a gas.
Condense	Turns a gas into a liquid.
Precipitation	Liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.

Year 5 Spring 2

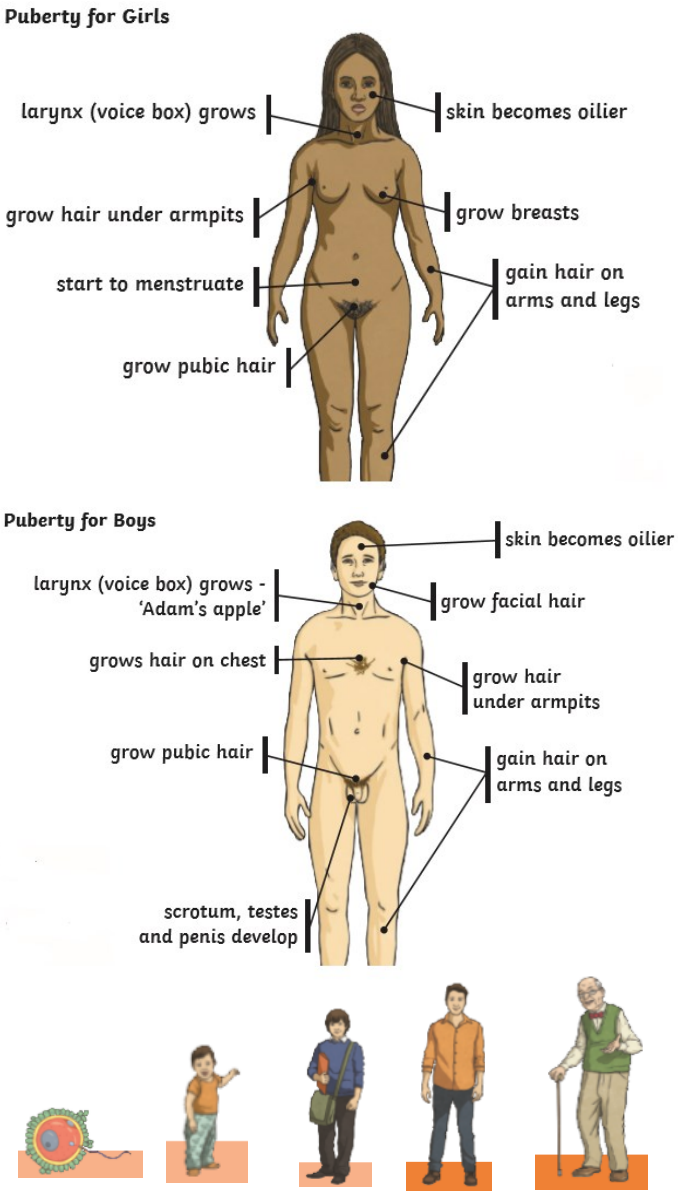
Science Topic : Animals including humans

What should I already know?

- Animals develop and grow over time.
- Animals complete particular milestones at a certain stage in their life cycle.
- Males and females have different body parts for certain purposes.

Key Knowledge:

- Boys and girls develop their bodies differently but they both grow taller, all parts of the body grow and they produce more sweat from their sweat glands.
- The life cycle of a living thing starts at fertilisation and develops until late adulthood.
- Humans reproduce through sexual reproduction however other animals such as a sea stars reproduce through



	Vocabulary
Fertilisation	The process of male and female cells fusing together.
Prenatal	The stage of development from the time of fertilisation to
Gestation	The process or time when prenatal development takes
Reproduce	To produce young.
Sexual	The process where two parentssone male and one
Asexual reproduction	The process where one parent produces new life.
Life cycle	The changes a living thing goes through, including
Adolescence	The social and emotional stage of development between
Puberty	The physical stage of development between childhood
Menstruation	When the female body discharges the lining of the
Adulthood	The stage of development when an adult is fully grown
Life	The length of time, on average, a particular animal is

Year 6 Spring 2

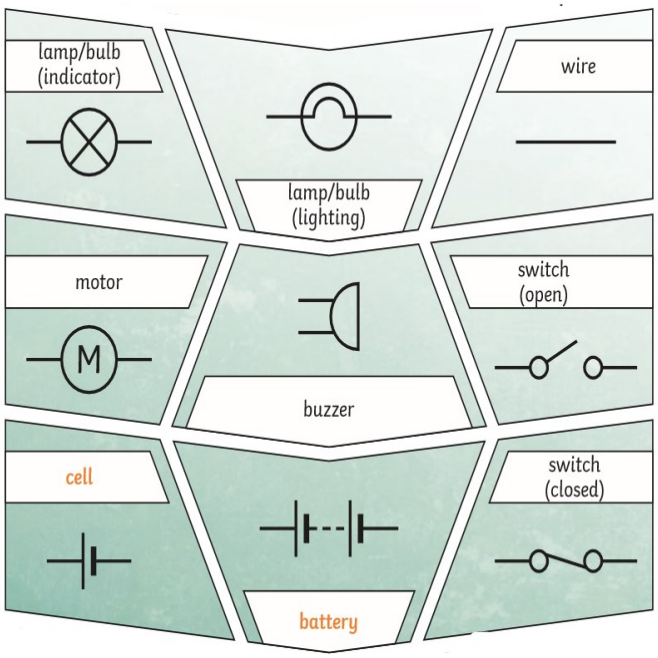
Science Topic : Electricity - Robots

What should I already know?

- A simple circuit is made up of a power source (battery), wires to allow the current to flow and a source for the power to flow to (light bulb, buzzer).
- Electricity can come from the mains or a battery.
- The difference between renewable and

Key Knowledge:

- There are many different components that can be added to a simple circuit each with their own purpose.
- When drawing circuits, often they are drawn using different symbols.
- A circuit that has only one route for the current to take. If more bulbs or buzzers are added, the power has to be shared and so they will be dimmer or quieter. If just one part of this series circuit breaks, the circuit is broken and the flow of current stops.
- A robot is a machine designed and



Vocabulary

Circuit	A path that an electrical current can flow around.
Symbol	A visual picture that stands for something else.
Cell/battery	A device that stores chemical energy until it is needed. A
Current	The flow of electrons, measured in amps.
Amps	How electric current is measured.
Voltage	The force that makes the electric current move through the wires. The greater the voltage, the more current will
Resistance	The difficulty that the electric current has when flowing
Electrons	Very small particles that travel around an electrical