

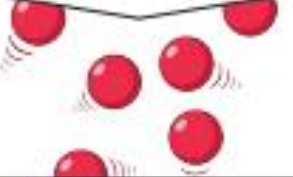
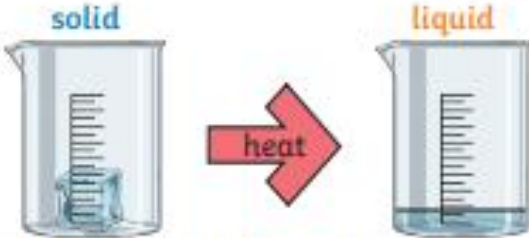
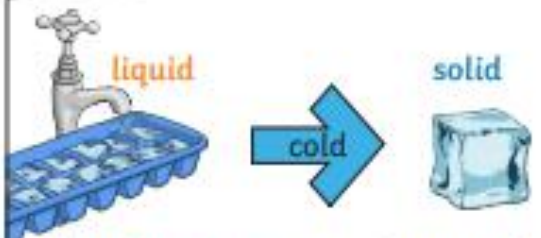


States of Matter

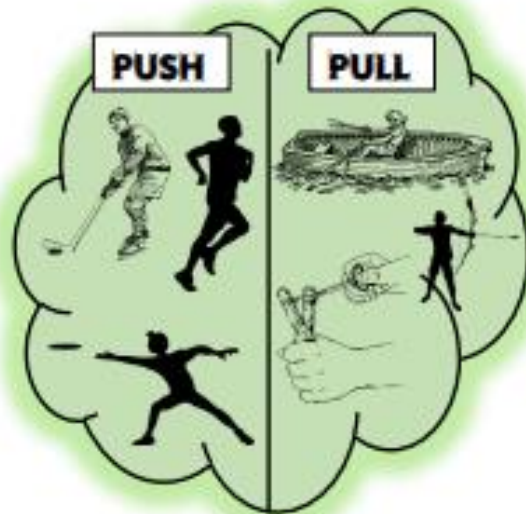
Year 4

Key Vocabulary		Key Knowledge		
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.	There are three states of matter.		
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.	 <p>Solid</p>	 <p>Liquid</p>	 <p>Gas</p>
		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.
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.	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.		
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.	 <p>solid → heat → liquid</p>		
water vapour	This is water that takes the form of a gas . When water is boiled, it evaporates into a water vapour .	 <p>liquid → cold → solid</p>		
		<p>If a solid is heated to its melting point, it melts and changes to a liquid. This is because the particles start to move faster and faster until they are able to move over and around each other.</p>		
		<p>When freezing occurs, the particles in the liquid begin to slow down as they get colder and colder. They can then only move gently on the spot, giving them a solid structure.</p>		

To look at all the planning resources linked to the States of Matter unit, [click here](#).

PUSHING AND PULLING

A force is a push or pull acting on an object as a result of the object's interaction with another object. Forces can make objects stop or start moving.



FORCES AND MAGNETS

Friction

When objects are pushed or pulled, an opposing force can be felt. This opposite force is called 'friction'. Friction causes things to slow down or stop. The grip on our shoes stops us slipping. Therefore, friction is great.

Ice-skates on an ice-rink will move for a long time because there is very little friction. The rougher the surfaces, the greater the friction.

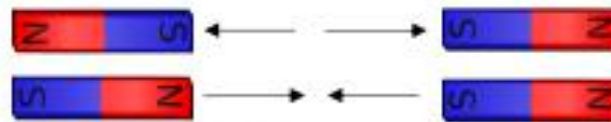


This rubbing of two surfaces can release energy, causing heat. (Try rubbing your hands together!)

Magnetic Poles

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).

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.

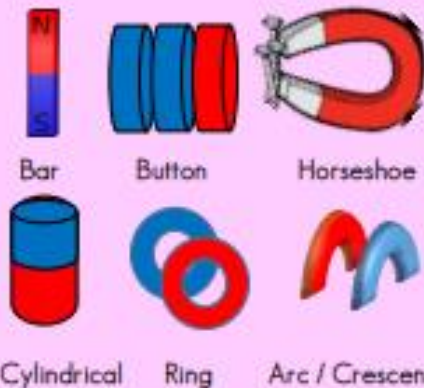


What is a magnet?

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:



Inside a compass is a small magnetic pin which constantly points north.

Earth has a natural magnetic field which means the pin turns to always face north and helping people find their way.

FUN FACTS ABOUT MAGNETS

- The most powerful magnet in the universe is a star called 'Magnetar'.
- Animals can be affected by magnetic pulls. Birds and turtles navigate by them and sharks are repelled by them!
- Earth's core is said to be filled with iron and nickel (metals which give it a magnetic field).

Maths

In Maths children will be looking at place value including representing numbers in different ways, rounding numbers to 10 and 100, ordering numbers to 1000, using number lines and Roman numerals. We will then cover addition and subtraction using formal methods up to 4 digits. We will also be revisiting key aspects of Year 3 work.

R.E.

The children will learn about Buddhism from how it was founded to the beliefs and symbols Buddhists have.

English

In English, children will be writing an adventure story based on The Wild Girl by Chris Wormell. This will include adverbs, expanded noun phrases, past tense verbs and 3rd person pronouns. We will then begin to develop our non-fiction skills by learning to write effective instructions. This will help when we write up our Science investigations.

Music

In Music children will be learning to play the keyboards. They will learn to read basic musical notation.

P.E.

The children will be learning about gymnastics and football. Swimming will begin for 4AR.

Computing

In Computing children will develop their coding skills by using programs on Purple Mash. They will learn coding terms and develop their own ideas into code.

P.H.S.E

The unit this half term is 'Being Me in My World'. This encompasses being aware of how one's actions can affect others and also how a democracy works.