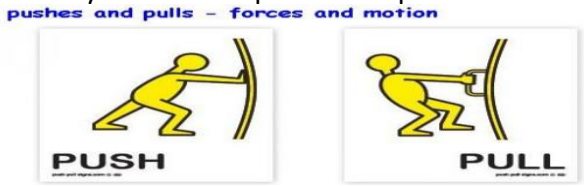
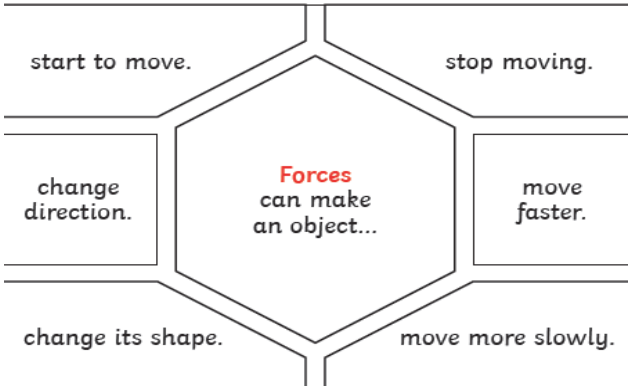
Year 5 Science- Forces

Prior Knowledge

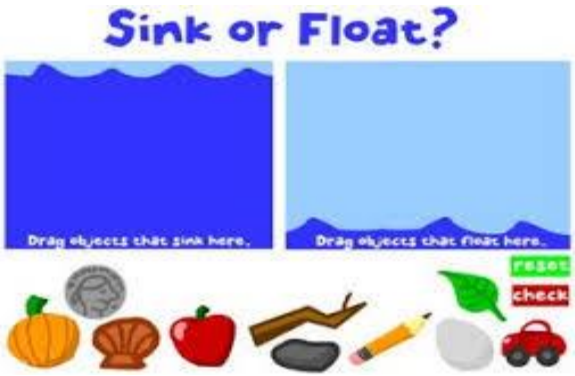
You may know about pushes and pulls.



What a force can do



You know that some objects will float and some will sink



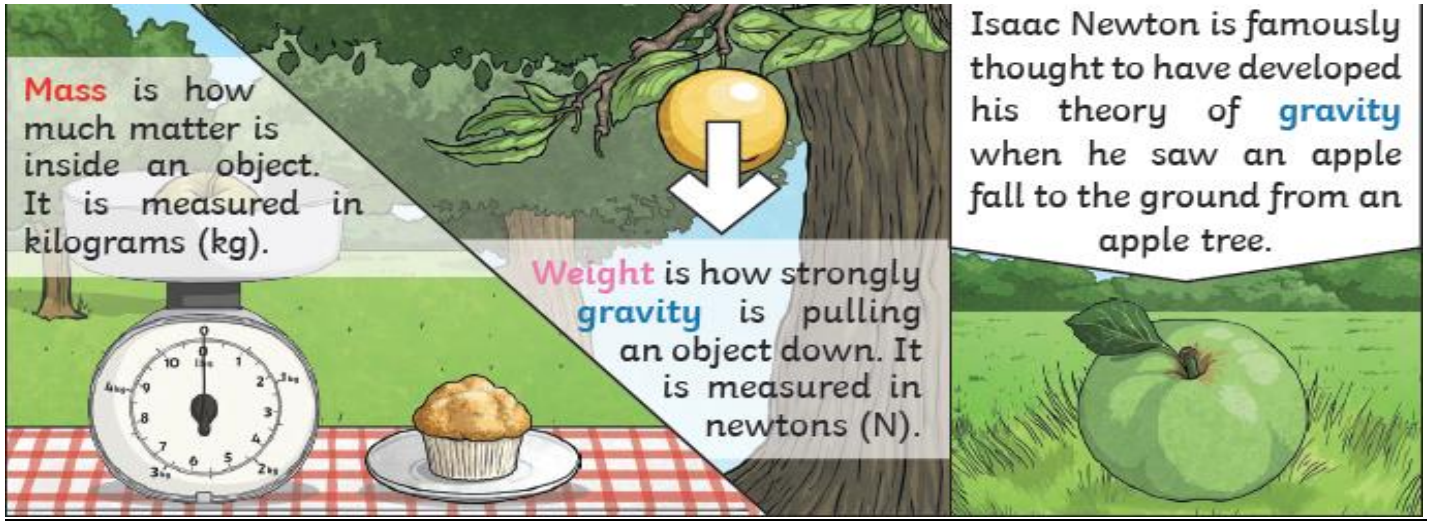
You will know how magnets work

Key Vocabulary

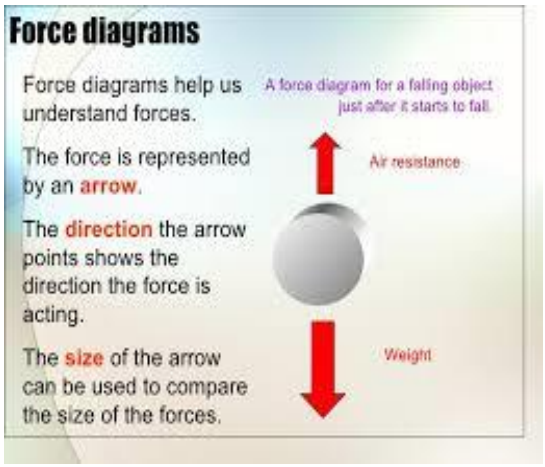
forces	Pushes or pulls.
gravity	A pulling force exerted by the Earth (or anything else which has mass).
Earth's gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground.
weight	The measure of the force of gravity on an object.
mass	A measure of how much matter (or 'stuff') is inside an object.

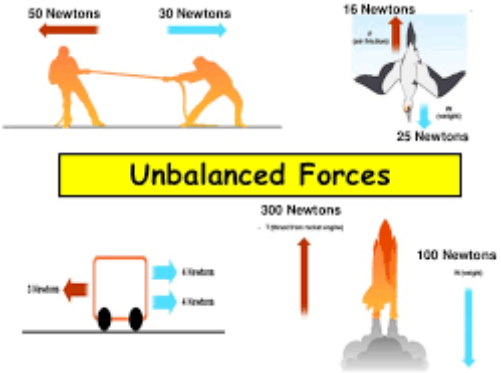
friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other.
air resistance	A type of friction caused by air pushing against any moving object.
water resistance	A type of friction caused by water pushing against any moving object.
buoyancy	An upward force that a liquid applies to objects.
streamlined	When an object is shaped to minimise the effects of air or water resistance.
mechanism	Parts which work together in a machine. Examples of mechanisms are pulleys, gears and levers.

Knowledge and Understanding



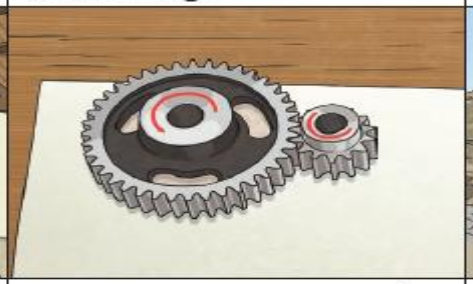
Key Diagram





Examples of forces in action:

Water resistance and air resistance are forms of friction. Friction is sometimes helpful and sometimes unhelpful. For example, air resistance is helpful as it stops the skydiver hitting the ground at high speed. Friction on a bike chain can make the bike harder to pedal so it is unhelpful.

Pulleys	Gears/Cogs	Levers
		
Pulleys can be used to make a small force lift a heavier load. The more wheels in a pulley, the less force is needed to lift a weight.	Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.	Levers can be used to make a small force lift a heavier load. A lever always rests on a pivot.

Ideas to try at home.

1. Watch the two videos below. Write down what you have discovered about forces. Can you think of 3 times we use forces in everyday life? An introduction to forces https://www.bbc.co.uk/bitesize/clips/zch4wxs A compilation of forces in action https://www.bbc.co.uk/bitesize/clips/zf84d2p

Watch this video about air resistance https://www.bbc.co.uk/bitesize/topics/zsxxsbk/articles/zxw6gdm Then, have a go at making your own parachute. You want it to fall as slowly as possible so you will need a timer on a phone, tablet or watch to time it. Think about: • The material you use • The size of the parachute Could you try different sizes or different materials to find which is most effective. Remember, to keep your investigation fair you will need to change only one thing each time. Make sure you drop every parachute from the same height each time. When you have investigated different materials and sizes and are happy with your parachute you could try using it to get an egg safely to the ground! (Ask an adult to help).