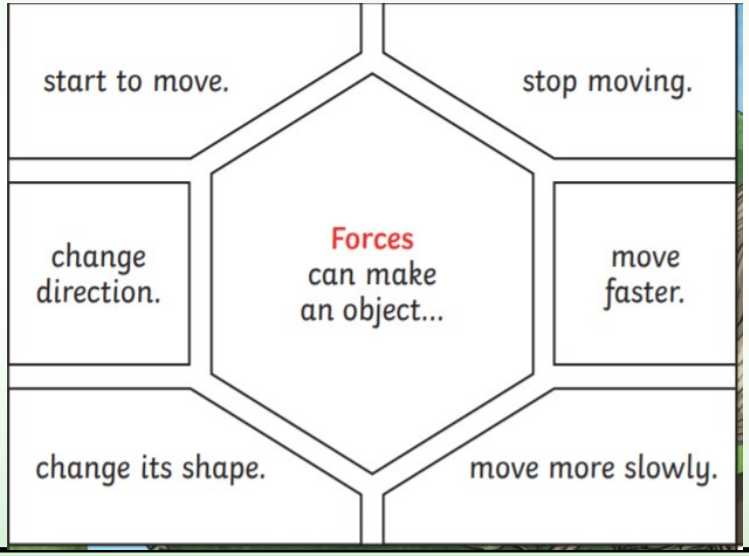
Key Facts

The Moon has a smaller mass than Earth so the gravitational pull on the Moon is smaller than it is on Earth.

Jupiter has a greater mass than Earth so the gravitational pull on Jupiter is stronger than on Earth.



Headteacher: Mr Robert Fenton

Year 5 Science Autumn 1 Forces

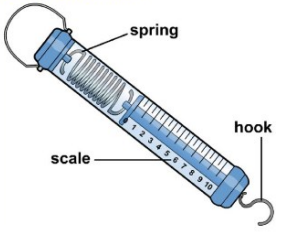
Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.

What is a force meter?

Force is measured in newtons (N).

A forcemeter is an instrument that is used to measure forces.

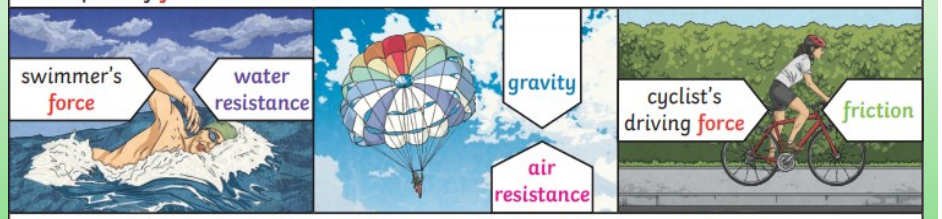
Click "**play**" to find out more.



Vocabulary

Word	Definition
Forces	Pushes and Pulls
Gravity	The pulling force exerted by the earth (and anything else that has mass)
Earth's Gravitational Pull	The pull that the earth generates on an object, pulling it towards the earth's centre. It is the earth's gravitational pull which keeps us on the ground.
Weight	The measure of force and gravity on earth.
Mass	The measure of how much matter ('stuff') is inside an object.
Friction	The force that acts between two surfaces or an object that are moving or trying to move, across each other.
Air resistance	A type of friction caused by air pushing against an object.
Water resistance	A type of friction caused by water pushing against an object.
Streamlined.	When an object is shaped to minimise the effects of air and water resistance.
Mechanisms	The parts that make something work

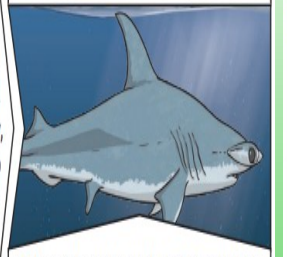
Examples of forces in action:



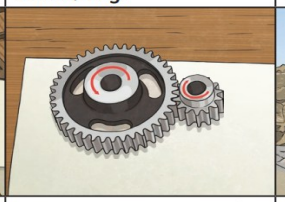
Water resistance and air resistance are forms of friction. Friction is sometimes helpful and sometimes unhelpful. For example, air resistance is helpful as it stops the skydiver hitting the ground at high speed. Friction on a bike chain can make the bike harder to pedal so it is unhelpful.

It has a pointed nose to cut through the water, and a smooth, low, curved back to allow the water to flow over and around it.

This shark is streamlined.



It does not create much water resistance so it can move through the water quickly.

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.