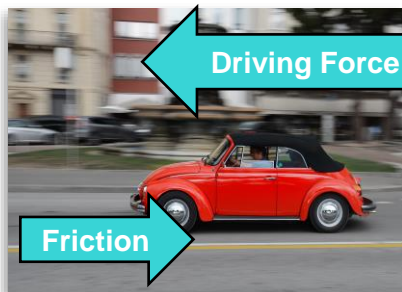


Mass and Weight



The mass of an item can be measured in **Grams/ Kilograms**.

Weight is how much force is needed to pull an object and is measured in **Newtons**.



Y5/6 Knowledge Organiser: Forces

Sir Isaac Newton (1643-1726)

- Explained the three laws of motion
- Explained the theory of gravity, including gravitational pull of the Earth.
- Invented the reflecting telescope
- His physics book 'Principia' contained many theories of physics


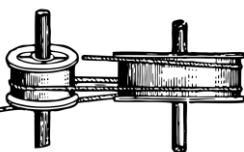

Can you resist me?



Air resistance, otherwise known as **drag**, is the way air opposes the direction an object is travelling in and slows it down. A good example of this is a **parachute**, the large surface area **absorbs** the air resistance, and slows down the descent of the parachutist.













Water resistance is the way water slows down the speed of the item travelling through it. This is why high-speed boats have a narrow front end, so that they can easily glide through it.

Friction occurs when two surfaces rub against each other. The rougher the surface, the more friction is caused. For example, sand and carpet have lots of friction.

Name	Picture	How it Works	Used For
Lever		Helps to reduce the amount of force needed to move or lift an object, by increasing the distance through which the force acts.	<ul style="list-style-type: none"> • stapler • door handle • claw of hammer • tweezers
Pulley		Helps to reverse the direction of the lifting force, therefore multiplying the force your body produces on the object.	<ul style="list-style-type: none"> • elevator • wells • theatre curtains • bulldozer
Gear		The 'teeth' on the gears turn one another, and in doing so, helps to increase the power of a turning force.	<ul style="list-style-type: none"> • cars • bikes • pendulum clock • vacuums

Y5/6 Knowledge Organiser: Forces

Rocket Words

	Sir Isaac Newton	an English physicist and mathematician
	gravity	force which draws objects towards the centre of a planet
	Galileo Galilei	an Italian scientist, and the first astronomer
	parachute	a device, usually made from cloth, designed to create air resistance and slow descent
	water resistance	friction which acts on an object as it moves through water
	streamlined	an object that is shaped to travel through air or water with little resistance
	buoyant	to float
	upthrust	any force that is causing something to be pushed upwards
	friction	the resistance of motion when one object rubs against another
	newton	the international metric unit of force
	lever	a long arm that rests on a support called a fulcrum
	pulley	a wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object