

Gravity

The force that holds things to Earth's surface and stops things from floating off into the atmosphere.

It is said that the famous scientist Isaac Newton was sitting under a tree when an apple fell on his head. He identified it was a force pulling the object down. This is why we measure gravity in Newtons (N).

Gravity on the moon is much less than on Earth, which is why during the 1969 moon landings astronauts could jump higher for longer.



Water Resistance

Is a type of friction which can slow things down in water. Water acts upon objects making them harder to pass through. A fish has a streamlined body shape to help it swim through water more easily. Upthrust is the name of a force that keeps things afloat on water. When gravity is greater than upthrust an object will sink. When the two are the same, the object will float.

Air Resistance

Sometimes referred to as drag, air resistance acts against gravity on falling or moving objects. It's what fills a parachute to help slow you down. Aeroplanes reduce air resistance due to their streamlined shape.

Year 5, Term 5: Forces

Friction

When objects are pushed or pulled, an opposing force can be felt. This opposite force is friction. Friction causes things to slow down or stop. A skier can ski on snow as there is little friction between the smooth skis and the snow. The rougher the surfaces, the greater the friction. This rubbing of two surfaces can release energy, causing heat.



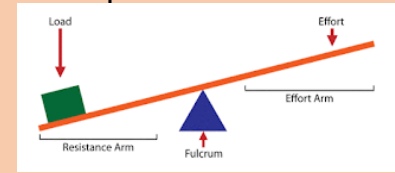
Gears

Transmit power from one part of a machine to another, connected gears can increase speed, force or cause a change in direction.



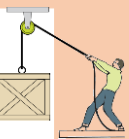
Levers

Using a long lever will make objects easier to lift. The fulcrum is where the lever pivots in order to lift the heavy load.



Pulleys

Like levers are used to lift loads with less effort, but for longer distances. Rope is passed through a pulley which is attached to an anchor point and returned back to the ground to be pulled.



Key vocabulary

Gravity: the force by which a planet or other body draws objects toward its centre.

Friction: resistance to motion between two surfaces in contact.

Water resistance: a type of force that uses friction to slow things down that are moving through water.

Air resistance: is a force that acts against gravity on falling or moving objects.

Streamline: a contour designed to minimize resistance.

Up thrust: any force that is causing something to be pushed upwards.

Gear: Used to transmit power from one part of a machine to another

Lever: A way to lift heavy weights using the least amount of effort.