



### What is a force?

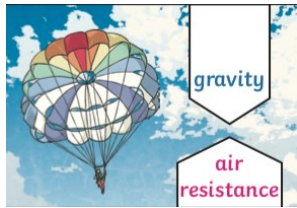
A force is a push or pull that acts up an object. Forces can make an object start to move, stop moving, move faster, change direction, change its shape and move slowly.

### Friction



Friction is a force that occurs when two surfaces rub against each other. The rougher the surface the more friction is produced.

### Air Resistance



Air resistance is a type of friction caused by air pushing against any moving object. For example in the image, gravity pulls the parachute down. Air resistance slows the parachute down, making it a safer descent.

### Water Resistance



Water resistance is a type of friction caused by water pushing against any moving object. For example, when your swimming the resistance between your body and the water slows you down.

### Gravity

Gravity is a pull force that pulls objects towards the centre of the earth. Every minute of the day, gravity is pulling you and everything around you downwards towards the Earth.

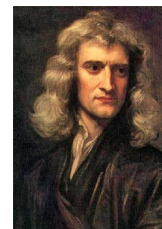
It is gravity that keeps 'us' on the Earth's surface.



### Famous Scientist

Sir Isaac Newton was a British Scientist and Mathematician who was born in the 1600s. He made some of the worlds most famous discoveries.

Newton discovered that Earth must have an invisible force that pulls things down instead of letting things float upwards. This is gravity.

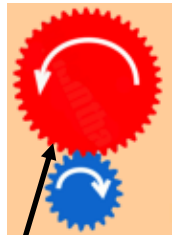


### Simple Machines

Simple machines work by turning small forces into larger ones, allowing us to perform tasks with more strength or speed. Examples of simple machines are:

#### Gears:

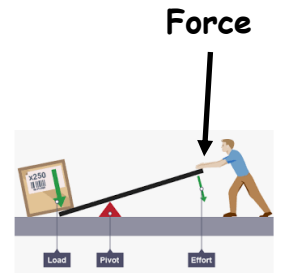
Gears/cogs can be used to change the speed, force of direction of a movement. When the 'teeth' of two gears are interlocked, the speed can be increased.



teeth

#### Levers:

Levers can be used to make a small force lift a lighter load as is shown in the image.



Force

#### Pulleys:

A pulley is wheel with a rope around it. Cranes use ropes and pulleys to make lifting heavy loads easier.

