

## Key vocabulary

**Force** – a push, pull, twist or turn.

**Friction** - A force that acts between two surfaces or objects that are moving, or trying to move, across each other.

**Gravity** – a pushing force exerted by the Earth, it attracts objects towards the centre of the Earth.

**Air resistance** – the force that air exerts on a moving object.

**Water resistance** – the force that water exerts on a moving object.

**Friction** – the force between 2 moving surfaces.

**Mechanisms** – machines or devices which help to achieve a result.

**Weight** – the measure of the force of gravity on an object, measured in Newtons (N)

**Mass** – the measure of how much matter is inside an object, can be measured in g/kg etc.

**Streamlined** – when an object is shaped to minimise the effects of air or water resistance.

**Buoyancy** - An object is buoyant if it floats. This is because the weight of the object is equal to the upthrust.

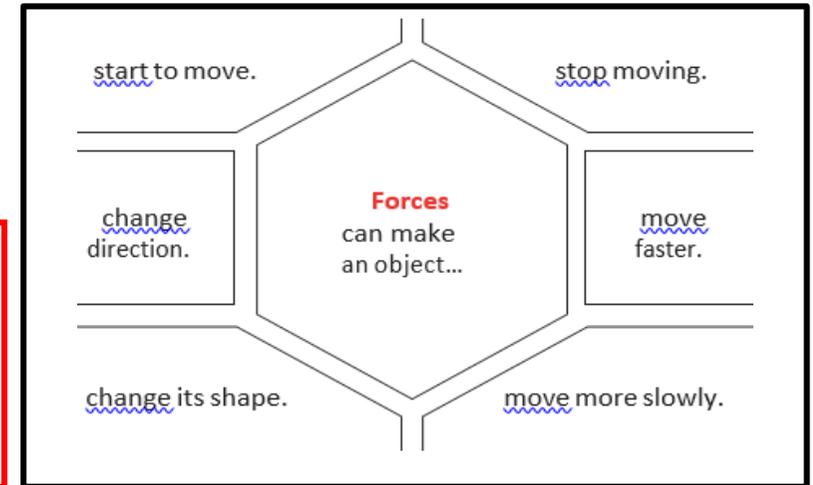
**Upthrust** - A force that pushes objects up, usually in water.

Etwall Primary School

## Forces

Year 5/6

A shark is streamlined. It does not create much water resistance so it can move through the water quickly

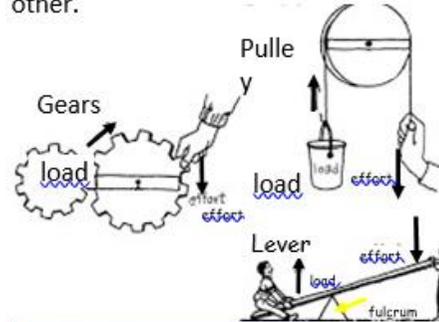


A force causes an object to start moving, stop moving, speed up, slow down or changedirection. A mechanism is a device that allows a small force to be increasedto a larger force.

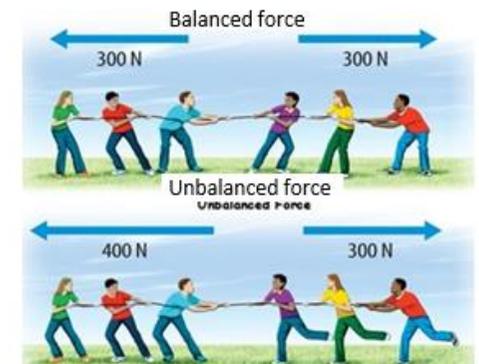
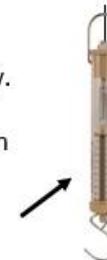
**Pulleys** - used to reduce the amount of force needed to lift a load. Themore wheels in a pulley, the less force is needed to lift the weight.

**Gears** - used to change, direction or force of a motion. When 2 gears areconnected they always turn in the opposite direction to each other.

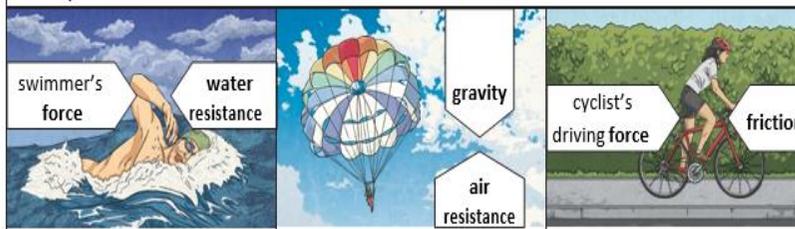
**Levers** - can be used to makea small force lift a lighter load. A lever always rests ona pivot or fulcrum.



Isaac Newton discovered gravity. This is why we measure gravity in Newtons using a Newton Meter.



### 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.