

Year 5 – Forces

Key Vocab

accelerate – To speed up.

air resistance – The force of air pushing against moving objects.

decelerate – To slow down.

force – A push or pull.

friction – A force that acts between two surfaces or objects that are moving, or trying to move, across each other.

gear – A toothed wheel that works with others to alter the relation between the speed of a driving mechanism (e.g. engine) and the speed of the driven parts (e.g. the wheels).

gravity – The force that pulls things towards the centre of the Earth.

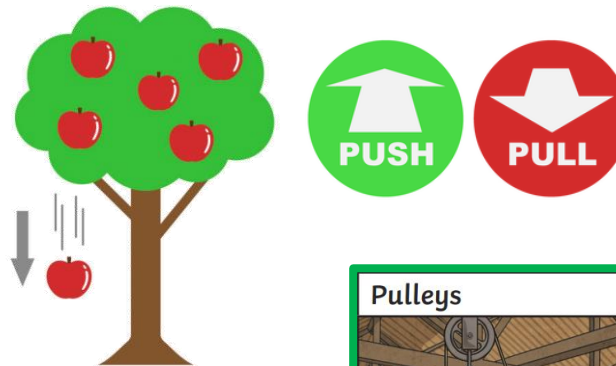
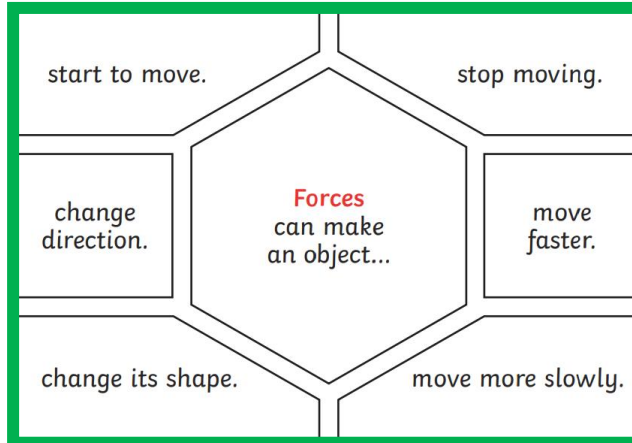
lever – A rigid bar resting on a pivot that is used to make moving loads easier.

mass – A measure of how much matter (or 'stuff') is in an object. Mass is measured in grams (g) and kilograms (kg).

pulley – A fixed wheel of group of wheels with a rope or chain in a grooved rim that is used to lift something up.

water resistance - The force of water pushing against moving objects.

weight – The measure of the force of gravity on an object. Weight is measured in newtons (N).

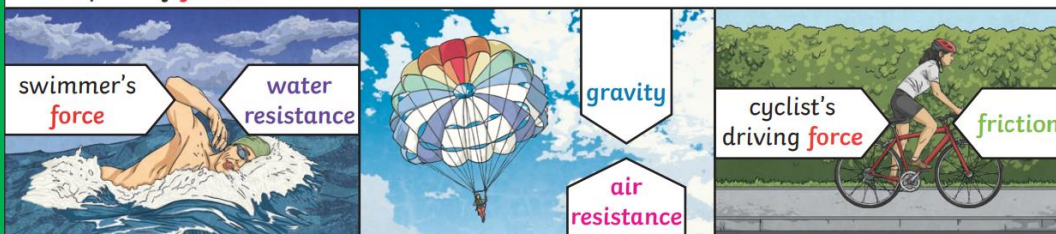


Sir Isaac Newton

Sir Isaac Newton was a scientist who is credited with discovering gravity. Legend has it that the idea came to him when he saw an apple falling from a tree in his garden. You can still visit his house now and see the famous apple tree!



Examples of **forces** in action:



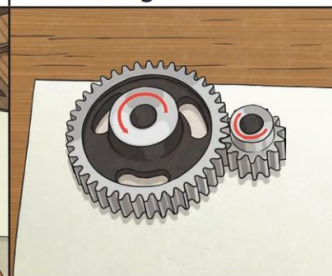
Water resistance and **air resistance** are forms of **friction**. **Friction** is sometimes helpful and sometimes unhelpful. For example, **air resistance** is helpful as it stops the skydiver hitting the ground at high speed. **Friction** on a bike chain can make the bike harder to pedal so it is unhelpful.

Pulleys



Pulleys can be used to make a small **force** lift a lighter load. The more wheels in a pulley, the less **force** is needed to lift a **weight**.

Gears/Cogs



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



Levers can be used to make a small **force** lift a lighter load. A lever always rests on a pivot.