



Science Year 5

Forces



Key Vocabulary

gravity	A pulling force towards the centre of the Earth.
weight	The measure of the force of gravity on an object.
mass	A measure of how much matter is inside an object.
friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other.
air resistance	A type of friction caused by air pushing against any moving object.
water resistance	A type of friction caused by water pushing against any moving object.

Links to prior learning and next steps:

- Seasonal changes (Y1)
- Forces (Y3)
- Space (Y5)

Key Knowledge

Unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.



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 a high speed. Friction on a bike can make it harder to pedal so it is unhelpful.

Levers, pulleys and gears allow a smaller force to have a greater effect.



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

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

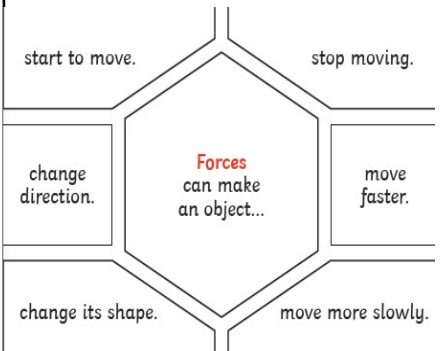
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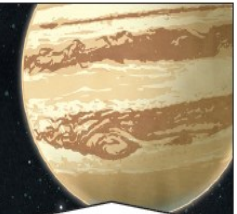
Isaac Newton

1643 - 1727

Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.



The Moon has a smaller mass than Earth so the gravitational pull on the Moon is smaller than it is on Earth.



Jupiter has a greater mass than Earth so the gravitational pull on Jupiter is stronger than on Earth.

