

Science Knowledge Organiser Y5/6 – Forces



Key Vocabulary	
Air resistance	A type of friction caused by air pushing against any moving object
Force	A push or pull upon an object resulting from its interaction with another object
Friction	The resistance that one surface or object encounters when moving over another
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 attracts a body towards the centre of the Earth
Gravitational pull (Earth's)	The pull that Earth exerts on an object, pulling it towards Earth's centre (The Earth's gravitational pull keeps us on the ground)
Lever	A rigid bar resting on a pivot that is used to move a heavy or firmly fixed load
Mass	A measure of how much matter (or 'stuff') is inside an object
Pull	To draw or haul towards oneself or itself, in a particular direction
Pulley	A wheel with a grooved rim around, that changes the direction of a force applied to the cord
Push	To move something in a specific way by exerting force
Water resistance	A force that is caused by water, with the force acting in the opposite direction to an object moving through the water
Weight	The measure of the force of gravity on an object

Forces can make an object start to move, stop moving, speed up or slow down, change direction or change its shape.



Balanced Force



Unbalanced Force

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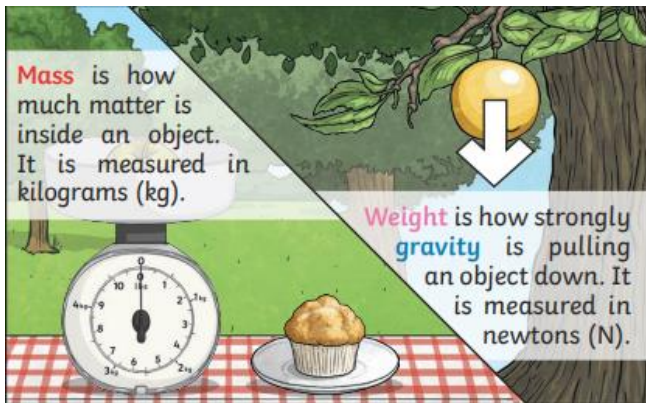


A **lever** can be used to make a **small force** lift a lighter load. A lever always rests on a **pivot**.

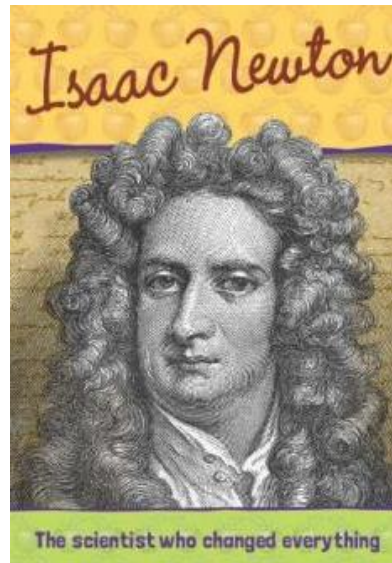


A **pulley** can be used to make a small **force** lift a lighter load. The more wheels in a pulley, the less force is needed to lift a **weight**.

Gears 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.



Sir Isaac Newton is important because he is considered to be one of the most important scientists in history. He developed many things including: the laws of motion and the theory of gravity.



Key Knowledge

- To identify forces acting on objects
- To recognise balanced and unbalanced forces
- To know what gravity is and how it is measured
- To research Sir Isaac Newton and his discoveries
- To explore the effect that gravity has on objects
- To identify the effect of friction that acts between moving surfaces
- To explain the effects of water resistance
- To plan and carry out an enquiry about air resistance
- To explore and design mechanisms