
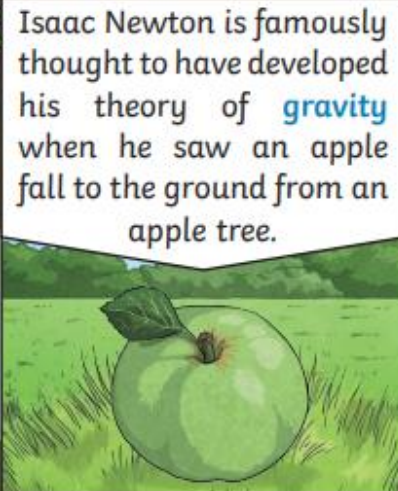



Year 5 Knowledge Organiser Science: Forces





ALL SAINTS
MULTI ACADEMY TRUST
BIRMINGHAM
GOD'S LOVE IN ACTION

Forces		Isaac Newton
start to move.	stop moving.	
change direction.	move faster.	
change its shape.	move more slowly.	
Forces can make an object...		
 <p>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.</p>		
<p>Mass is how much matter is inside an object. It is measured in kilograms (kg).</p> 	<p>Weight is how strongly gravity is pulling an object down. It is measured in newtons (N).</p>	

Key Vocabulary

Forces	Pushes or pulls
Gravity	A pulling force exerted by the Earth (or anything else which has a mass).
Earth's gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground.
Weight	The measure of the force of gravity on an object.
Mass	A measure of how much matter is inside an object.

<p>The Moon has a smaller mass than Earth so the gravitational pull on the Moon is smaller than it is on Earth.</p> 	
<p>Jupiter has a greater mass than Earth so the gravitational pull on Jupiter is stronger than on Earth.</p>	

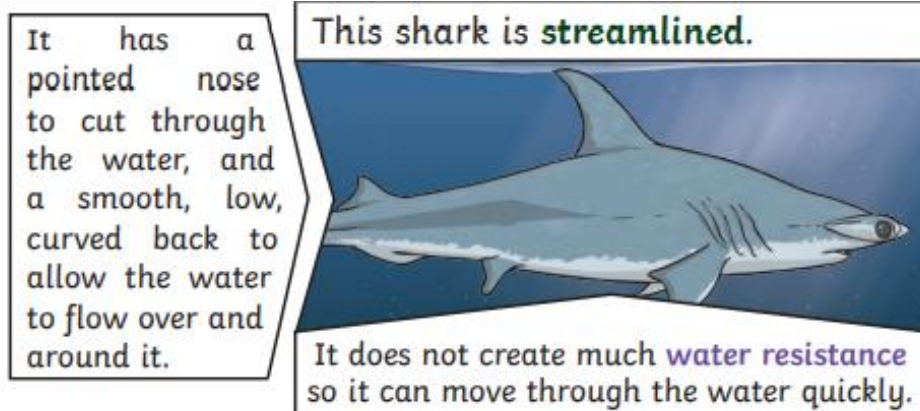
Key Vocabulary

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.
Buoyancy	An object is buoyant if it floats. This is because the weight of the object is equal to the up thrust.
Streamlined	When an object is shaped to minimise the effects of air or water resistance.
Mechanism	Mechanisms are simple machines with moving parts that change input force and movement into a set of useful output force. Example of mechanisms are pulleys, gears and levers.
Up thrust	A force that pushes objects up, usually in water



Forces

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	Gears/Cogs	Levers
<p>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.</p>	<p>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.</p>	<p>Levers can be used to make a small force lift a heavier load. A lever always rests on a pivot.</p>