

What should I already know?

- Forces are pushes and pulls which change the motion of the object
- Forces act in opposite directions. Friction is a force that can affect the motion.
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Big ideas this works towards:

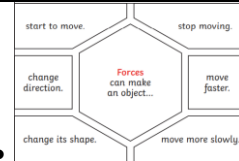
Forces are different kinds of pushes and pulls that act on all the matter that is in the universe.

Vocabulary

force	A pull, push or twist
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 water exerts on a moving object
friction	The force between two moving surfaces
weight	The measure of the force of gravity on an object, measured in Newtons
mass	The measure of how much matter is inside an object, it can be measured in g/kg etc
streamlined	When an object is shaped to minimize the effects of air or water resistance.
Isaac Newton	Scientist who developed the theory of gravity.
pulleys	A wheel with a grooved rim around that changes the direction of a force applied to the cord.
Gears	A toothed wheel that works with others to alter the relation between the speed of a driving mechanism and the speed of the driven parts.
levers	A rigid bar resting on a pivot that is used to move a heavy or firmly fixed load.
Force meter	A device for measuring the weight of an object
mechanism	Simple machines with moving parts that change input forces and movement into useful output forces.
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 water.
Accelerate/ decelerate	Speeding up/slowing down

What will I know by the end of the unit?

What is a force?

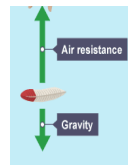


Why is it slowing down?

Friction – friction is a force between 2 surfaces that are sliding or trying to slide across each other. Friction works in the opposite direction to which the object is moving. It slows down the moving object and also produces heat. It can be helpful in certain situations but not helpful in others.

How does a parachute work?

- Air resistance - a type of friction between air and another material. Aeroplanes and cars are streamlined so that they can move through the air as easily as possible.



What shape is a penguin?

- a type of friction between water and another material. When you go swimming there is friction between your skin and the water particles.

Why is it so hard to move?

Balanced force



Unbalanced force



Can I lift an elephant?

<p>Pulleys</p> <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/Cogs</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</p> <p>Levers can be used to make a small force lift a heavier load. A lever always rests on a pivot.</p>
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Using levers and pulleys, understand simple block chains to lift heavy objects.

Topic: Forces

How do things move?

Physics

