

Science Year group: 5 Term: Spring 2 Unit: Forces



Vocabulary I need to know

Force,	an <u>influence</u> that <u>changes movement</u>
gravity,	the <u>force</u> that <u>attracts objects</u> towards one another, <u>especially</u> the <u>force</u> that makes things <u>fall</u> to the <u>ground</u> :
air resistance,	The <u>force</u> of air that <u>acts</u> to <u>stop</u> the <u>progress</u> of something
friction,	the <u>force</u> that makes it <u>difficult</u> for one <u>object</u> to <u>slide</u> along the <u>surface</u> of another or to <u>move</u> through a <u>liquid</u> or <u>gas</u>
water resistance,	The <u>force</u> of water that <u>acts</u> to <u>stop</u> the <u>progress</u> of something
simple machines,	a device that transforms the direction or magnitude of a force
mechanisms,	a <u>part</u> of a <u>machine</u> , or a set of <u>parts</u> that <u>work</u> together

Things I already know before I start the journey

- Compare how things move on different surfaces.
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- Observe how magnets attract or repel each other and attract some materials and not others.
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
- Describe magnets as having two poles.
- Predict whether two magnets will attract or repel each other, depending on which poles are facing.



Things I need to know by the end of the journey

A force causes an object to start moving, stop moving, speed up, slow down or change direction. Gravity is a force that acts at a distance. Everything is pulled to the Earth by gravity. This causes unsupported objects to fall.

Air resistance, water resistance and friction are contact forces that act between moving surfaces. The object may be moving through the air or water, or the air and water may be moving over a stationary object.

A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement. The small force moves a long distance and the resulting large force moves a small distance, e.g. a crowbar or bottle top remover. Pulleys, levers and gears are all mechanisms, also known as simple machines

LO I know that objects fall towards the Earth because of the force of gravity

Children identify the forces and drawing arrows to show the direction in which they apply a force.

LO I can accurately measure the force of gravity pulling on objects.

Children will measure the weight and mass of different objects recording results in tables

LO I can plan and conduct an investigation into the effects of air resistance.

Children understand how to make their different parachutes and discuss the possible variables and experiment.

LO I know how to minimise the effects of water resistance on an object.

Children complete a boat race challenge.

LO I can explain the effects of friction on a moving vehicle.

Find the Best Brake Pad. Children complete their prediction, conduct the investigation and repeat, recording results.

LO I know and can explain how different mechanisms work.

Set up an investigation about levers.