



Previous Learning

Year 3 Forces and Magnets

Forces & Magnets •

Compare how things move on different surfaces

Observe how magnets attract or repel each other and attract some materials and not others

Compare and group materials and identify magnetic materials

Describe magnets as having two poles

Predict whether two magnets will attract or repel each other, depending on which poles are facing

Forces

Year 5 Science Autumn 1

Learning objectives

Can I identify and explain the different forces acting on objects?

Can I identify and explain balanced and unbalanced forces?

Can I explain what gravity is?

Can I explain Isaac Newton's role in discovering gravity?

Can I explain how air resistance affects moving objects?

Can I explain the effects of water resistance?

Can I identify streamlined shapes.

Can I explain the effects of friction on a moving vehicle?

Working Scientifically

Learning Objectives

To **accurately measure** the force of gravity pulling on objects.

To **investigate** the effects of friction created by different materials.

To **investigate** and **design** a mechanism for a given purpose.

To **report** and **present** findings in oral and written forms such as displays and other presentations.

To use secondary sources to **research** ideas .

To use relevant **scientific language and illustrations** to communicate ideas.



We will learn about the work of Isaac Newton and Galileo in gravity and air resistance.



Possible experiments and investigations

An investigation in measuring gravity: weight is measured in newtons (N). We will be using a force meter, which is a piece of equipment used to measure this force.

An investigation into the effects of air resistance: we are aiming to discover which parachute would be best in slowing a person down.

Investigating the effects of friction created by different materials: we are aiming to create the best brake pad.

Vocabulary and definitions

Force—any interaction that, when unopposed, will change the motion of an object

Gravity—the force that attracts a body towards the centre of the earth, or towards any other physical body having mass

Air resistance -a type of *friction* between *air* and another material

Friction -the resistance that one surface or object encounters when moving over another

Water resistance—a type of force that uses friction to slow things down that are moving through water. It is often called drag

Buoyancy -the ability or tendency of something to float in water or other fluid