

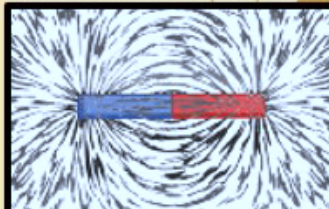
Previous knowledge.

- To be able to identify and compare a variety of everyday materials


Science Knowledge Organiser – Year 3
Physics: Forces and magnets

What I will learn in this unit.


- To be able to compare how things, move on different surfaces
- To be able to notice that some forces need contact between two objects, but magnetic forces can act at a distance
- To be able to observe how magnets, attract or repel each other and attract some materials and not others
- To be able to 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
- To be able to describe magnets as having two poles
- To be able to predict whether two magnets will attract or repel each other



Like **poles** repel.
Opposite **poles** attract.



The needle in a compass is a **magnet**. A compass always points north-south on Earth.



A **magnetic field** is invisible. You can see the **magnetic field** here though. This is what happens when iron filings are placed on top of a piece of paper with a **magnet** underneath.

Word	Definition
magnetic field	The area around a magnet where there is a magnetic force
north and south pole	The North and South poles are found at different ends of a magnet
repel	Repulsion is a force that pushes objects away
attract	Attraction is a force that pulls objects together
force	A pull or a push
magnetism	Where objects are attracted to magnets, objects with iron, nickel and cobalt metals are magnetic

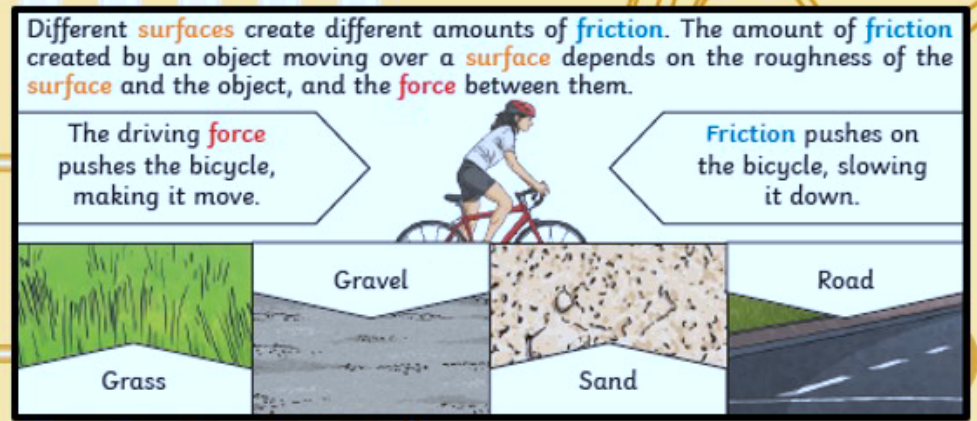
Scientist study: Isaac Newton (1643 - England)

Sir Isaac Newton made many important scientific discoveries, but his most famous one is his theory of gravity. He realised that earth must have a force that pulls objects downwards rather than letting them float upwards. Also, he discovered that gravity pulls objects towards each other. The bigger an object is, then the more gravity it has. He then used this theory about gravity to explain that gravity keeps the moon orbiting around the earth.



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Different **surfaces** create different amounts of **friction**. The amount of **friction** created by an object moving over a **surface** depends on the roughness of the **surface** and the object, and the **force** between them.



The driving **force** pushes the bicycle, making it move.

Friction pushes on the bicycle, slowing it down.

Grass, Gravel, Sand, Road