

Science- Forces and Magnets- Year 3 Spring Term

Prior Learning:

In **Year 2** you were taught to: find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Key Vocabulary

Forces	Pushes or pulls.
Friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other.
Surface	The top layer of something.
Magnet	An object that produces a magnetic force that pulls certain objects towards it.
Magnetic	Objects which are attracted to a magnet.
Magnetic field	Area around the magnet where there is a magnetic force.
Poles	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.

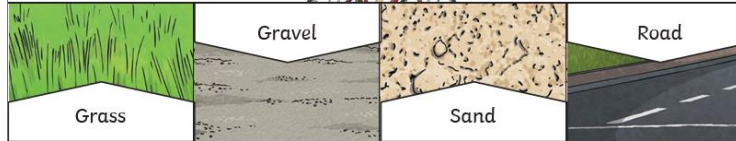
Michael Faraday
1791-1867

Helped discover that magnets can be used to make electricity.



The driving force pushes the bicycle, making it move.

Friction pushes on the bicycle, slowing it down.

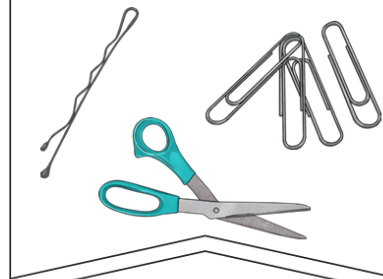


Different surfaces create different amounts of friction. The amount of friction created by an object moving over a surface depends on the roughness of the surface and the object, and the force between them.

Key Learning

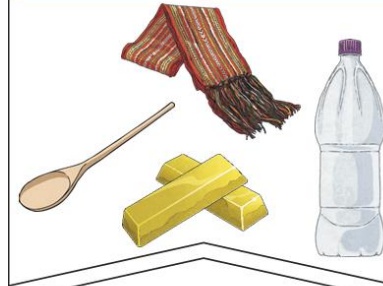
- A force is a push or a pull.
- Forces change the motion of an object. It can make an object start to move, speed up, slow down or even make it stop.
- A magnetic force can act at a distance.
- Not all metals are magnetic - only iron, nickel and cobalt.
- If a material is magnetic, it will be attracted (pulled) towards the magnet.

Magnetic ✓

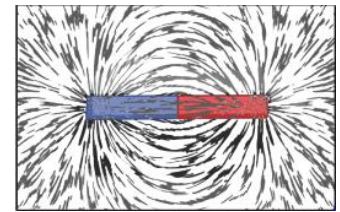


These objects contain iron, nickel or cobalt. Not all metals are magnetic.

Non-magnetic ✗



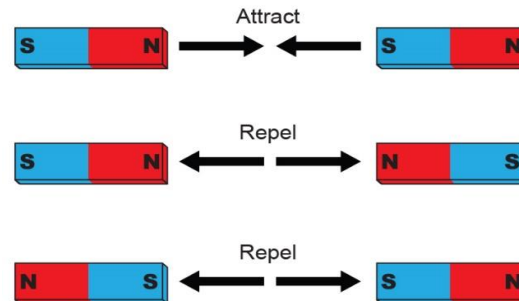
These objects do not contain iron, nickel or cobalt.



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.

Magnetic poles:

Like poles repel. Opposite poles attract.



The needle in a compass is a magnet. It will always point north.



Can I...?

Describe how different forces work, including a magnetic force.

List some magnetic and non-magnetic materials/objects.

Explain how magnets can attract and repel each other depending on which way they are facing.

Describe a magnet using the word pole.