



Year 3 Science

Forces & Magnets

Things you should already know:

Push & pull are forces - you can make something start or stop moving when you push or pull it.

Materials have describable properties

Different materials have different properties.

The properties of a material determine whether they are suitable for a purpose.

Key Knowledge

- 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 & the object, & the force between them.
- A magnetic field is invisible. You can see the magnetic field using investigative tools to explore what happens when iron filings are placed on a piece of paper with a magnet underneath/on top.
- Like poles repel. Opposite poles attract.

New Learning for Year 3

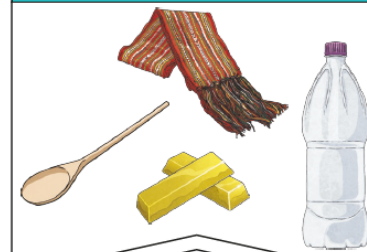
- To compare how things move on different surfaces
- To notice that some forces need contact between two objects, but magnetic forces can act at a distance
- To observe how magnets attract or repel each other and attract some materials and not others
- To compare and group together a variety of everyday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

Magnetic ✓

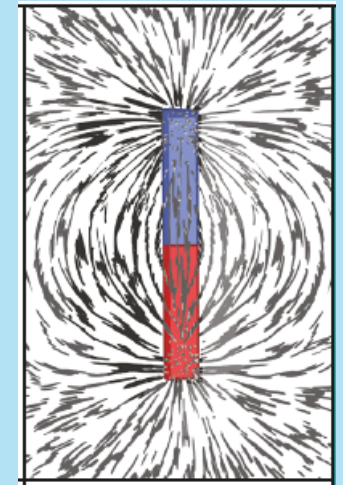


These objects contain iron, nickel or cobalt. Not all metals are **magnetic**.

Non-magnetic ✗



These objects do not contain iron, nickel or cobalt.

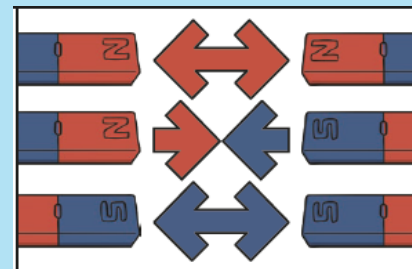


Pushes



Forces will change the motion of an object. They will either make it start to move, speed up, slow it down or even make it stop.

Pulls



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



Friction pushes on the bicycle, slowing it down.



Year 3 Science

Forces & Magnets

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 which produces a magnetic force that pulls certain objects towards it.
Magnetic	Objects which are attracted to a magnet are magnetic. Objects containing iron, nickel or cobalt metals are magnetic.
Magnetic field	The are around a magnet where there is a magnetic force which will pull magnetic objects towards them magnet.
Poles	North and south poles are found at different ends of a magnet.
Repel	Repulsion is a force that pushes objects away. For example, when a north pole is placed near the north pole of another magnet, the two poles repel (push away) from each other.
Attract	Attraction is a force that pulls objects together. For example, when a north pole is placed near the south pole of another magnet, the two poles attract (pull together).

Can you investigate and explain how the force of friction would be different when pulling an object across the classroom floor and the grass next to Wonder Wood?

Sticky Learning.

Can you answer any of these questions in your book?

Draw and label diagrams to show;

- The force of repulsion between two magnets.
- The force of attraction between two magnets.

If you needed to investigate whether or not a material is magnetic, you will need to plan an investigation. Can you answer these questions:

1. What one thing will you need to change in your investigation?
2. What would you need to keep the same?

Can you predict what your results will be?

Scan this to test your science knowledge with our class quiz.



Scan this and watch the clip to find out more about friction.

