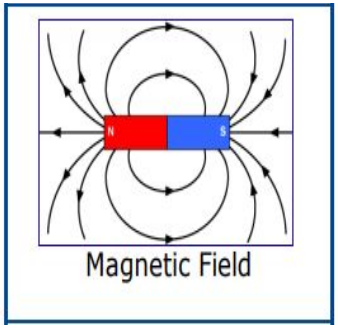
Grange Park Primary School Year 3 Summer 2 Science

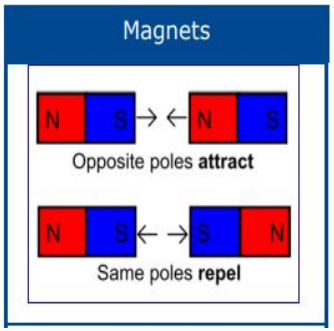
Forces and Magnets

Significant Scientist

Mary Somerville

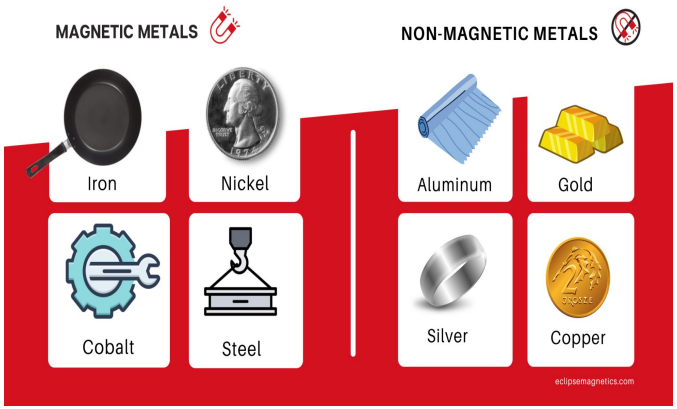
Mary Somerville (1780-1872), a Scottish woman, was fascinated by magnets and carried out lots of experiments with them. She was also one of the first popular Science writers - selling many books in her lifetime. She was the first woman to be elected to the Royal Astronomical Society.





Enquiry Skills

- Setting up tests
- Observing and measuring
- Interpreting and communicating results



Key Knowledge

A magnet is a special object which produces an area of magnetic force around itself called a magnetic field.

If a metal object enters this magnetic field, it will be attracted towards the magnet and end up 'sticking' to it - non-metallic objects would not be attracted to the magnet.

Some forces need contact between two objects, but magnetic forces can act at a distance.

Magnetic materials are always made of metal, but not all metals are magnetic.

Iron is magnetic, so any metal with iron in it will be attracted to a magnet. Nickel and Cobalt are also magnetic. Steel contains iron, so a steel paperclip will be attracted to a magnet too. Most other metals, for example aluminium, copper and gold, are NOT magnetic.

The two ends of a magnet are known as the north pole (N) and the south pole (S). The same poles repel— opposite poles attract. If you try to put two magnets together with the same poles pointing towards one another, the magnets will push away from each other. We say they repel each other. Opposite poles attract and are brought together.

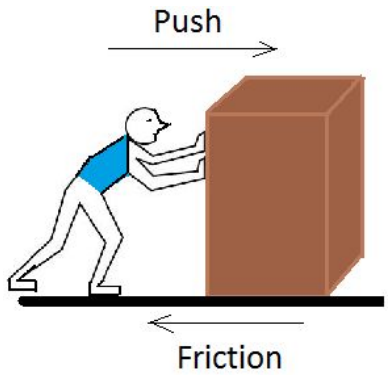
When objects are pushed or pulled, an opposing force can be felt. This opposite force is called 'friction'. Friction causes things to slow down or stop. The grip on our shoes stops us slipping. Therefore, friction is great. Ice-skates on an ice-rink will move for a long time because there is very little friction. The rougher the surfaces, the greater the friction. This rubbing of two surfaces can release energy, causing heat.

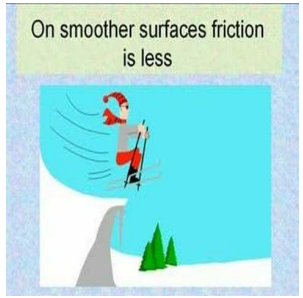
Working Scientifically Skills

- Oral and written explanations, conclusion, predictions, classify, collect data and evidence, improve, use secondary sources.
- Ask relevant questions.
- Data – gather, record, classify, present.
- Record – drawings, labelled diagrams, tables.

Key Vocabulary

force	The pushes and pulls which act on our bodies and the things around us to make things move and stop moving
magnet	An object that has a magnetic field (an invisible pattern of magnetism)
magnetic force	An invisible force created by electrons. Magnetic force controls magnetism and electricity
poles	The north pole is the end of the magnet attracted to the Earth's North magnetic pole; a magnet's south pole is the end attracted to the Earth's South magnetic pole
repel	To move or force back or away
attract	To pull together with physical force





Grange Park Primary School