

Knowledge Organiser

Science – Forces and Magnets

What should I already know?

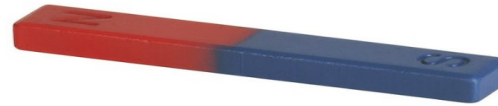
- Shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Key Vocabulary

Force	Pushes or pulls in a particular direction.
Push	A push is a force that moves an object away.
Pull	When a force brings an object closer, that is a pull.
Contact force	A force that takes place if two objects are touching.
Non-contact force	A force that takes place if two objects are not touching.
Magnet	An object that produces a magnetic force that pulls certain objects towards it.
Strength	How strong something is.
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).
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).
Poles	North and south poles are found at different ends of a magnet.
Magnetic force	Magnetic forces are forces that are made using a magnet. These don't need to touch objects for it to cause a force, the magnet can either push or pull using a magnetic force.
Magnetic material	The substance / materials which get attracted towards a magnet. For example: iron, cobalt, nickel, and other metals.

Useful Diagrams

Types of magnets:



Bar magnet



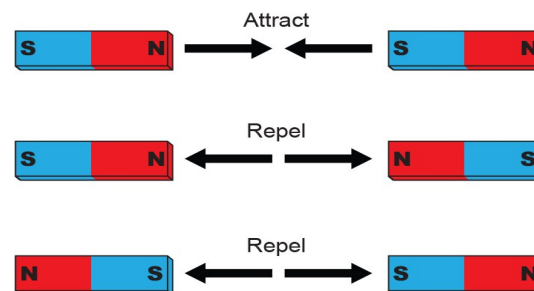
Ring magnet

Button magnet



Horseshoe magnet

How magnets work:



Sticky Knowledge

- A force is a push or a pull.
- When an object moves on a surface, the texture of the surface and the object affect how it moves. It may help the object to move better or it may hinder its movement e.g. ice skater compared to walking on ice in normal shoes.
- A magnet attracts magnetic material. Iron and nickel and other materials containing these, e.g. stainless steel, are magnetic.
- The strongest parts of a magnet are the poles.
- Magnets have two poles – a north pole and a south pole.
- If two like poles, e.g. two north poles, are brought together they will push away from each other – repel.
- If two unlike poles, e.g. a north and south, are brought together they will pull together – attract.
- For some forces to act, there must be contact e.g. a hand opening a door, the wind pushing the trees.
- Some forces can act at a distance e.g. magnetism. The magnet does not need to touch the object that it attracts.