

Science

Forces and Magnets

Year 4

Key Vocabulary

WORD	DEFINITION
Attract	To pull towards (opposite of repel)
Force	A push or pull on an object which can cause it to move, change speed, direction or shape. Measured in Newtons (N).
Friction	The resistance of motion when one object rubs against another.
Gravity	The force that attracts a body towards the centre of the earth, or towards any other physical body having mass.
Magnet	A material or object that produces a magnetic field, it attracts or repels magnetic objects Poles
Magnetic Field	The area around a magnet where there is a magnetic force which will pull magnetic objects towards the magnet.
Magnetism	The force of attraction and repelling caused by a magnet
Poles	2 sides of a magnet where the magnetism is strongest
Repel	To push away (the opposite of attract)

Key Knowledge

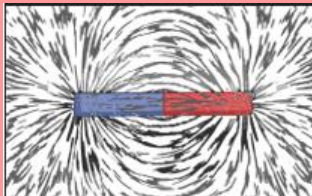

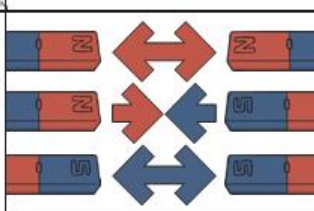
- **MAGNETS** - are objects or materials that produce a magnetic field and attract or repel magnetic objects.
- Magnets have 2 poles: north and south.
- Different surfaces create different amounts of friction. The amount of friction created by an object moving over a surface depends on the roughness of the surface and the object, and the force between them.
- Gravity – the force that pulls things to the ground. Gravity also holds Earth and other planets in their orbits around the sun.
- Friction is a force between 2 surfaces that are sliding or trying to slide across each other.
- Friction works in the opposite direction to which the object is moving. It slows down the moving object. Smooth surfaces create less friction e.g. polished wood. Rough surfaces create more friction e.g. carpet

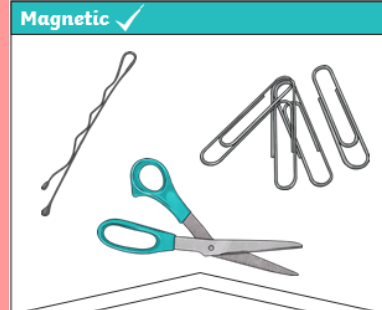

Newton's Three Laws of Motion

First law: An object will continue in the state it is in (rest or motion) unless a force acts on it.

Second law: Acceleration depends on the magnitude of the force applied and the mass of the object.

Third law: "For every action, there is an equal and opposite re-action."

	Like poles repel . Opposite poles attract .	
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.		The needle in a compass is a magnet . A compass always points north-south on Earth.

Magnetic ✓  <p>These objects contain iron, nickel or cobalt. Not all metals are magnetic.</p>	Non-magnetic ✗  <p>These objects do not contain iron, nickel or cobalt.</p>
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