Castlefield School - Science

Topic: Forces and Magnets	Year: Three	Theme: Energy	Strand: Physics

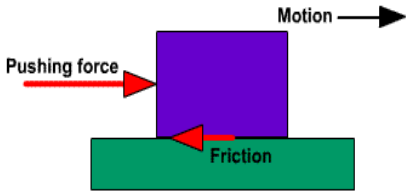
Key Concepts

What are forces?

- Forces are pushes and pulls.
- These forces change the motion of an object. They will make it start to move or speed up, slow it down or even make it stop.

How do different surfaces affect the motion of an object?

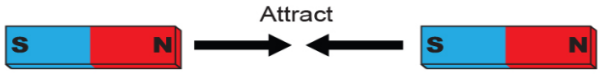
- Friction is a force that holds back the motion of an object.



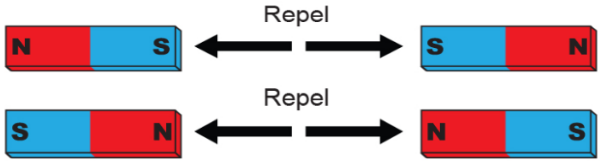
- Some surfaces create more friction than others which means that objects move across them slower.
- On a ramp, the force that causes the object to move downwards is gravity.
- Objects move differently depending on the surface of the object itself and the surface of the ramp.

How do magnetic poles work?

- The ends of a magnet are called poles. One end is called the north pole and the other end is called the south pole.
- Opposite poles attract, similar poles repel.
- If you place two magnets so the south pole of one faces the north pole of the other, the magnets will move towards each other. This is called attraction.



If you place the magnets so that two of the same poles face each other, the magnets will move away from each other. They are repelling each other.



How do magnets work?

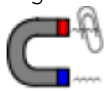
- Magnets produce an area of force around them called a magnetic field.
- When objects enter this magnetic field, they will be attracted to or repelled from the magnet if they are magnetic.
- When magnets repel, the push each other away
- When magnets attract, they pull together.

Key Vocabulary

attract	If one object attracts another object, it causes the second object to move towards it.
friction	The resistance of motion when there is contact between two surfaces.
magnet	A piece of iron or other material which attracts magnetic materials towards it.
magnetic field	An area around a magnet or something functioning as a magnet in which the magnet's power to attract things is felt.
motion	The activity of changing position or moving form one place to another.
non-magnetic	An object that is not attracted to magnets.
opposite	Opposite is used to describe things of the same kind which are completely different in a particular way.
position	The position of someone or something is the place where they are in relation to other things.
repel	When a magnetic pole repels another magnetic pole, it gives out a force that pushes the other pole away..

Which materials are magnetic?

- Objects that are magnetic are attracted to magnets.
- Iron and steel are magnetic.
- Aluminium and copper are non-magnetic.



Working Scientifically Skills

	Asking relevant questions.		Setting up enquiries and choosing equipment.
	Explaining results – drawing conclusions and using results.		Setting up fair tests (with help)
	Recognising when to use other sources of information to find answers.		Choosing how to record information – tables, tally charts, Venn and Carroll diagrams and bar charts.

Famous Scientists

William Gilbert (1544 – 1603) – English physician who was the first person to research the properties of magnets.