

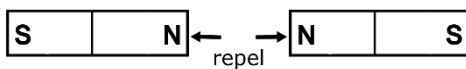
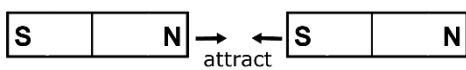
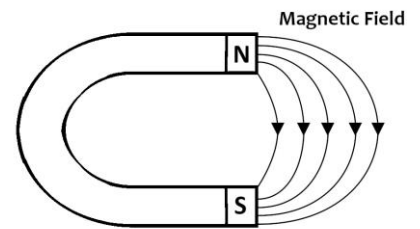
Magnetism

Level 4

A magnet is a piece of metal or a rock that can pull some types of metal towards it. This force that a magnet creates is called magnetism. Magnetism is the force that makes a magnet stick to your fridge.

Objects made from metals such as iron, nickel and cobalt are magnetic. Not all metals, however, are magnetic. Objects made from metals such as aluminium, silver or gold would not be attracted to the magnet. Materials such as plastic, wood and glass are not magnetic. A magnetic object is not the same as a magnet.

Magnets produce an invisible area of magnetic force. This area is called a magnetic field. Magnetic objects placed within this magnetic field will be pulled towards the magnet. A larger magnet will have a larger magnetic field than a smaller magnet. The pull will also be stronger. Strong magnets can even attract a magnetic object through some solid objects, such as a table.



Magnets have a magnetic north pole and a magnetic south pole. When the same poles from two magnets are placed near one another, they will repel. When opposite poles are placed near one another, they will attract (pull). Knowing this, we can easily tell the difference between a magnet and an object that is simply magnetic.

The Earth is also a magnet, with its own magnetic field. A compass uses Earth's magnetic field to work. Inside a compass is a small, magnetised metal needle. The needle is pulled towards the Earth's magnetic north pole. Magnets have many other uses. One common use is to hold doors open or closed. Magnets are also used inside every day appliances including televisions, computers, fridges and telephones.



An electromagnet is a magnet that uses electricity to create a magnetic force. Unlike regular magnets (also called permanent magnets), the magnetic field of electromagnets can be turned off and on. This is a very useful feature. Very powerful electromagnets are even used in some roller coasters to help speed them up and slow them down.

Questions

Magnetism – Level 4

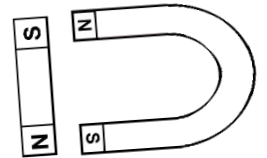
1. List three types of metals that are not magnetic.

2. What does the word 'repel' mean? _____

3. Give three examples of how magnets are used.

4. Why do you think a regular magnet is called a 'permanent magnet'?

5. Would these magnets attract or repel? How do you know?



6. Tim is unsure whether he is holding a magnet or a magnetic object. How could he work it out?



7. How might an electromagnet be used to speed up or slow down a roller coaster?



Answers

1. List three types of metals that are not magnetic.

Plastic, wood and glass are not magnetic.

2. What does the word 'repel' mean? **Repel means to push away.**

3. Give three examples of how magnets are used.

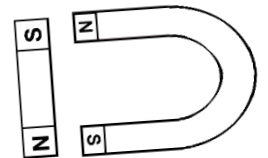
Answers may vary. Magnets are used in compasses, fridges, TVs, computers, telephones and roller coasters.

4. Why do you think a regular magnet is called a 'permanent magnet'?

They are called permanent magnets because, unlike electromagnets, they are 'on' permanently.

5. Would these magnets attract or repel? How do you know?

These magnets would attract because opposite poles from each magnet are near one another.



6. Tim is unsure whether he is holding a magnet or a magnetic object. How could he work it out?

Tim could use another magnet to test. If his object is attracted at both ends to his magnet, it is magnetic. If his object repels from one end of the magnet, it is a magnet.



7. How might an electromagnet be used to speed up or slow down a roller coaster?

Answers will vary but should mention the ability of electromagnets to switch on and off their magnetic field.

