

How Can Invisible Forces Move Things?

Instructions: Read the text about **forces** and **magnets**. Look for the science words in **bold**. Then answer the questions.

What is a force?

A **force** is a **push** or a **pull**. Forces can make things start moving, stop moving, speed up, slow down, or change direction.

Some forces need objects to touch. These are called **contact forces** (for example, pushing a door). Other forces can act from a distance. These are called **non-contact forces** (for example, magnets and gravity).

Gravity

Gravity is a non-contact force that pulls objects towards Earth. Gravity is why things fall down if you drop them, and why you stay on the ground instead of floating away.

Friction and air resistance

Friction is a contact force that happens when two surfaces rub together. Friction can slow things down, like brakes on a bike.

Air resistance is a type of friction. It happens when an object moves through air. A parachute works because it increases air resistance and slows a person down.

Forces



Gravity



Friction

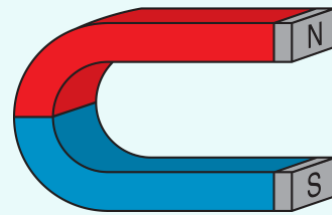


What are magnets?

A **magnet** is an object that creates a non-contact force called **magnetism**. Magnets have two ends called **poles**: a **north pole** and a **south pole**.

Magnets can **attract** (pull) some materials. They can also **repel** (push) other magnets.

Magnets

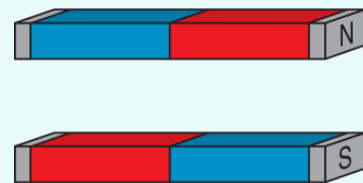


Attract and repel

When the opposite poles of two magnets are near each other (north and south), they **attract**. When the same poles are near each other (north and north, or south and south), they **repel**.

The area around a magnet where it can pull or push is called a **magnetic field**. You cannot see it, but you can see its effects (for example, with iron filings).

Poles



Magnetic and non-magnetic materials

Materials that are attracted to magnets are called **magnetic**. Most everyday magnetic materials are **iron** or **steel** (which contains iron).

Materials such as wood, plastic, rubber, and glass are **non-magnetic**. A good way to test a material is to try a magnet and record what happens.

Magnetic?



Glossary

Word	Meaning
Force	A push or a pull.
Push	A force that moves something away from you.
Pull	A force that brings something towards you.
Contact force	A force that happens when objects touch.
Non-contact force	A force that can act from a distance.
Gravity	A non-contact force that pulls objects towards Earth.
Friction	A contact force that slows objects when surfaces rub together.
Air resistance	A type of friction that slows objects moving through air.
Magnet	An object that creates a force called magnetism.
Pole	One end of a magnet (north or south).
Attract	To pull towards.
Repel	To push away.
Magnetic	Able to be attracted to a magnet (often iron or steel).
Non-magnetic	Not attracted to a magnet (for example, wood or plastic).
Magnetic field	The area around a magnet where it can pull or push.

Questions

1. Find the definition: What is a **force**?

2. Retrieve information: What are the two types of force named in the text?

3. Vocabulary in context: What is a **contact force**?

4. Give an example: What is a **non-contact force**? Name one example from the text.

5. Cause and effect: What does **gravity** do, and what happens because of it?

6. Explain a science idea: What is **friction**, and how does it affect movement?

7. Using evidence: Why does a parachute slow a person down? Use words from the text in your answer.

8. Summarise: What is a **magnet**?

9. Recall key facts: What are the two **poles** of a magnet called?

10. Compare: When do magnets **attract** each other?

11. Compare: When do magnets **repel** each other?

12. Interpret meaning: What is a **magnetic field**, and why can we say it is invisible?

13. Apply your understanding: Name one **magnetic** material and one **non-magnetic** material, and explain how you could test them.

Answer Key

1. A force is a push or a pull.
2. The two types of force are contact forces and non-contact forces.
3. A contact force is a force that happens when objects touch.
4. A non-contact force acts from a distance. One example from the text is gravity or magnetism.
5. Gravity pulls objects towards Earth. Because of gravity, things fall down when you drop them and people stay on the ground.
6. Friction is a contact force that happens when two surfaces rub together. It can slow movement down, like brakes on a bike.
7. A parachute slows a person down because it increases air resistance. Air resistance is a type of friction that acts against movement through the air.
8. A magnet is an object that creates a non-contact force called magnetism.
9. The two poles are called the north pole and the south pole.
10. Magnets attract each other when opposite poles are near each other, such as north and south.
11. Magnets repel each other when the same poles are near each other, such as north and north or south and south.
12. A magnetic field is the area around a magnet where it can pull or push. It is invisible because you cannot see it directly, only its effects.
13. A magnetic material could be iron or steel, and a non-magnetic material could be wood or plastic. To test them, place a magnet near each material and record whether it is attracted or not.