

Magnetism

Magnet and Its Friends

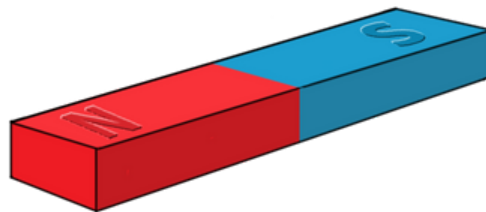
NCF and/or NCERT Learning Outcomes:

- Understand how to identify and classify magnetic and non-magnetic materials through direct testing.
- Understand what magnetic materials are made of.
- Understand material properties, begin to observe patterns and ask questions.

Why Should You Learn This?

- To explore and discover what kinds of materials a magnet attracts.
- To test objects around you for their magnetic properties using a magnet.
- To find out how different materials (like iron, copper, plastic, etc.) behave with magnets.
- To build your own understanding of **magnetic** and **non-magnetic** substances.

Before we proceed, tell us: This is a M _ _ _ _ .



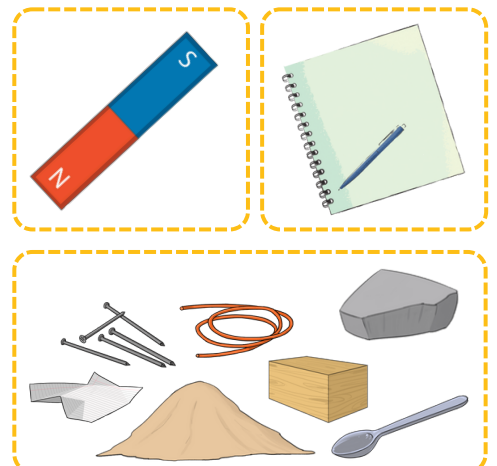
What does it do?

You might know that it attracts objects, but does it attract all objects?

Let's investigate!

You will need:

- A magnet
- A pen and notebook
- Various objects: A piece of wood, a small stone, some soil, a few iron nails, a stainless steel spoon, a piece of copper wire, aluminium and brass, different types of coins, a piece of plastic, paper and glass.



Magnet and Its Friends

Let's begin!

What you need to do: Make a guess first!


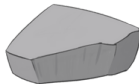

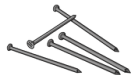







1. Before testing, look at each object and note down in your notebook.

- Will it stick to the magnet?
- What do you think it's made of?






2. Create an observation table in your notebook like this:



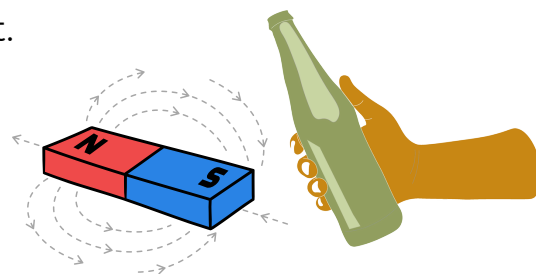
Observation Table

Sr No.	Object name		Sticks to Magnet (Yes/No)	What is the object made of?
1	Wooden stick			
2	Stone			
3	Soil			
4	Iron nails			
5	Spoon (Stainless steel)			
6	Copper wire			
7	One rupee coin			
8	Two rupee coin			
9	Five rupee coin (White)			
10	Five rupee coin (Yellow)			
11	Ten rupee coin			

Magnet and Its Friends

Sr No.	Object name		Sticks to Magnet (Yes/No)	What is the object made of?
12	Newspaper			
13	Aluminium foil			
14	Brass			
15	Plastic bottle			
16	Glass			

- Take each object and bring it close to the magnet. Observe whether it sticks to the magnet or not.
- Record your observations in the table.
- You can also add more things from your surroundings that are not listed above.



Discuss the questions given below in the group:

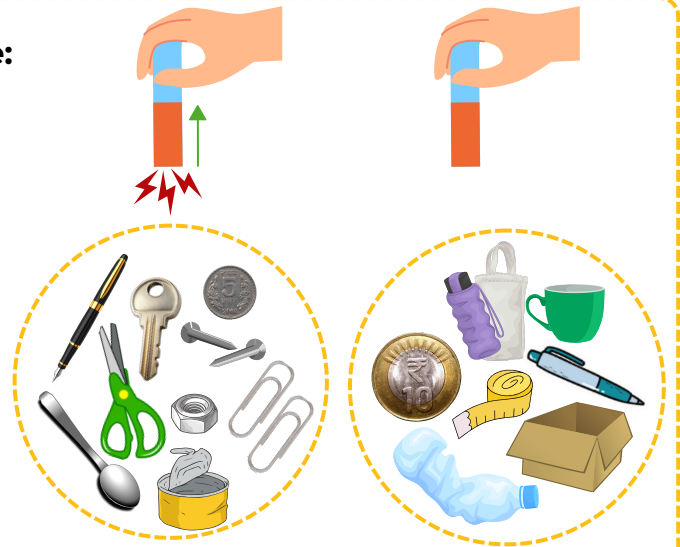
1. Which objects did the magnet attract? What material are they made of?
2. Which objects did the magnet not attract? What material are they made of?
3. Do you notice any pattern between the material of the object and whether it sticks to the magnet? (Hint: Are they metals or non-metals?)
4. Some steel objects stick to the magnet, while others don't. Why do you think this happens?
5. Some coins stick to a magnet and some do not. Why do you think this happens? What are coins made of? Use AI tools to find out.



Magnet and Its Friends

From our observations we can conclude:

- Some objects stick to the magnet. Objects that stick to magnets are called **magnetic materials**. These are usually made of iron, nickel, or cobalt.
- Some objects did not stick to the magnet. Objects that do not stick to magnets are called **non-magnetic materials**. These include materials like wood, plastic, glass, copper, aluminium, paper, etc.



All magnetic materials are metals, but not all metals are magnetic.

We also noticed that:

- Some coins stuck to the magnet, while others did not. This is because coins are made of different mixtures of metals. Find out what these are.
- Some steel objects stuck to the magnet strongly, and some didn't. This depends on how much iron is mixed into the steel. Find out what materials are used to make steel.



Think and Explore

1. Have you seen magnets being used at home? Where? What do the magnets do there?
2. Does a magnet attract metals in the same way when placed in water?
3. Can the strength of a magnet be measured?

