Magnets

Grades 1-3

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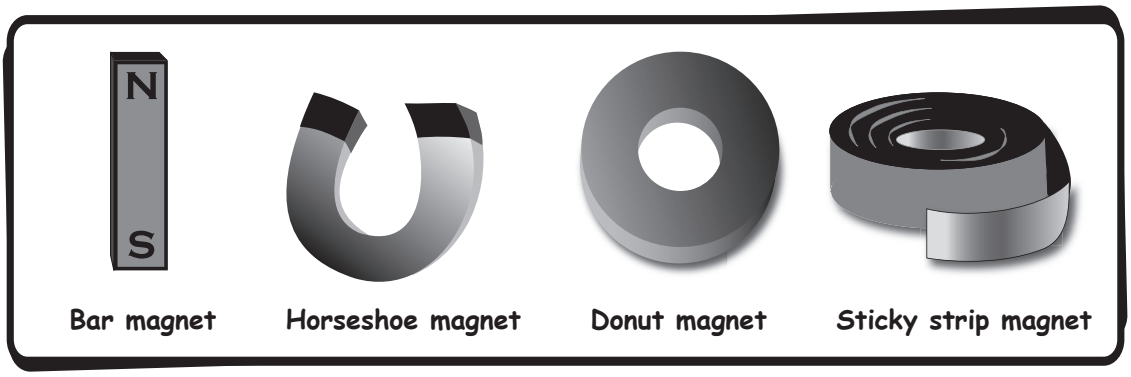
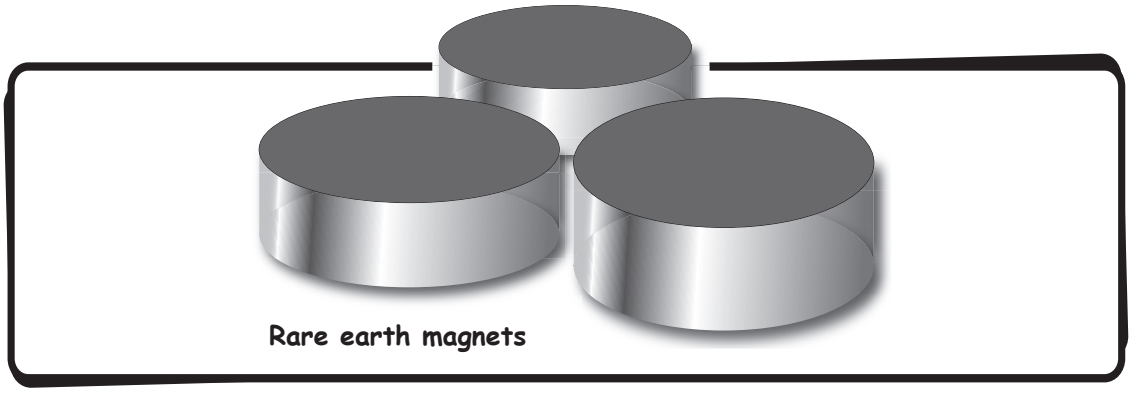
Magnets and Magnetic Materials Teacher Notes

Magnets are made of a material in which the electrons are aligned in one common direction, instead of randomly. Different types of magnets are used in the activities of this book:

- **The bar magnet is shaped like the letter "I".**
- **The horseshoe magnet is shaped like the letter "U".**
- **The donut magnet is shaped like a disk with a hole in the middle.**
- **Sticky strip magnets are typically sold in rolls. One side is covered in adhesive.**



The results of the experiments will be clearer if you use the most powerful magnets you can find. For example, ceramic magnets or rare-earth magnets work very well.



How to use magnets

- Avoid dropping magnets, as they may lose their strength.
- Do not place magnets near credit cards or they may be demagnetized.
- Do not place magnets near electronic devices, TVs, or computer screens, or they may be damaged.

Magnets and Magnetic Materials Teacher Notes

In the following activities, students will discover that magnets attract certain types of materials.

Explore Magnets! (pages 11-12)

Place the following materials on a desk:

1. Variety of magnets: refrigerator magnets, horseshoe magnets, bar magnets, donut magnets, strip magnets, cow magnets, magnetic marbles
2. Some magnetic objects: Canadian or European coins, iron nails, paperclips, iron filings in a clear plastic box
3. Some non-magnetic objects: crayon, eraser, plastic items, U.S. coins
4. Objects which have magnetic parts and non-magnetic parts: pencil, stapled paper, paper clips in a sealed plastic box, iron filings in a sealed plastic box.

This desk will be called the **"Exploration Table"**. Invite students to visit the table in small groups of about three students and manipulate the objects as they please.

Afterwards, ask them to complete the **Explore Magnets!** Worksheets. Motivate a class discussion about what they saw. The answers will provide an indication of their level of knowledge and questions they are interested in exploring.

What's Magnetic? (pages 14-15)

Magnets attract some metals, but not all.

Some magnetic metals:

- Nickel
- Iron
- Cobalt

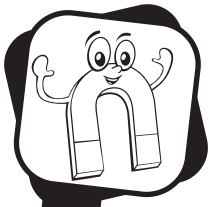
Some non-magnetic metals:

- Copper
- Aluminum
- Lead
- Gold

Non-metallic materials (plastic, glass, cloth, paper) are generally not magnetic.

What Is in My Cereal? (page 22)

The teacher should prepare bowls half-filled with water for each student team, or ensure they have access to pitchers of water or a tap.



Name: _____

What Do You Know?

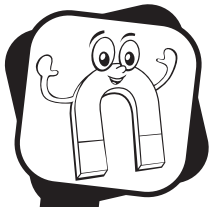
You already know a few things about magnets.
Draw a picture of a magnet.

What is special about magnets?

_____

_____

Draw a picture of a magnet being used.



Explore Magnets!

Name: _____

Worksheet 1

Magnets and Magnetic Materials

You went to the exploration table.
Draw some magnets from the table.

What surprised you?

_____

_____

_____

_____