

Magnet Investigations (K-2nd grades) Post-Visit Activities

We hope that you enjoyed your visit to the Children's Science Explorium!

To help reinforce the concepts covered during today's field trip, we have prepared the following wrap-up activities for you to incorporate into the classroom.

Vocabulary List and Student Definitions (early elementary level)

- **Magnet:** metal that repels or attracts other metals that contain iron.
- **Pole:** either end of a magnet (where the lines of force are most concentrated).
- **Push:** to press against somebody or something in order to move that person or object away.
- **Pull:** to apply a force to somebody or something in order to bring it closer (to the origin of force).
- **Energy:** ability to do things, work, or make an effort
- **Magnetic field:** the invisible area surrounding a magnet that pushes or pulls other magnetic objects.
- **Attract:** to pull toward
- **Repel:** to push away

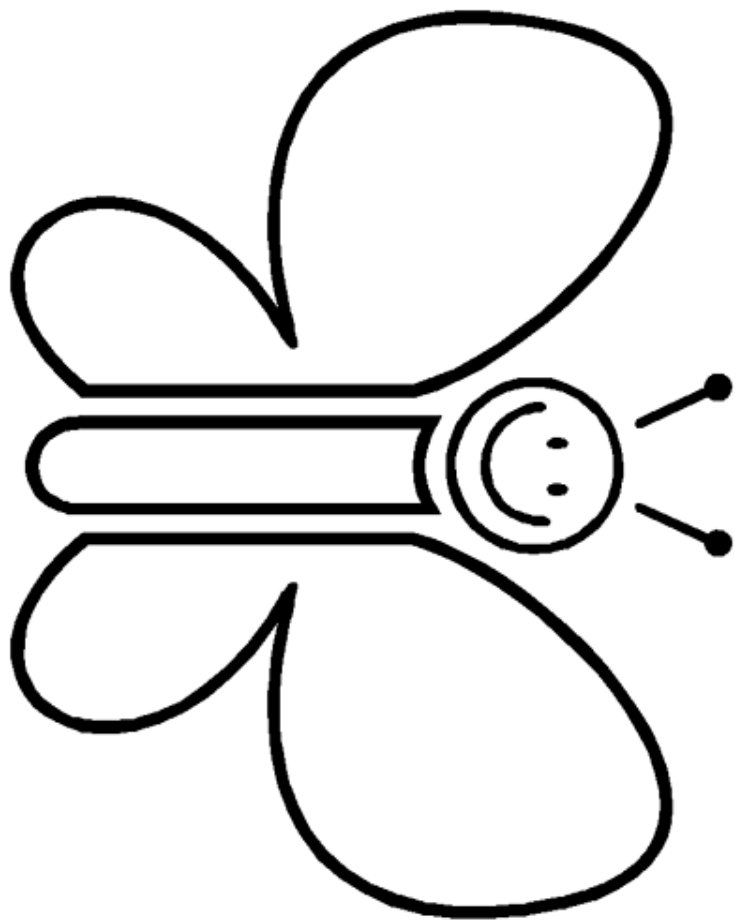
Magnetic Properties

1. Fluttering Butterflies

- a. During the program, *Magnet Investigations*, your students explored the properties of magnets (2nd grade). One of those properties was the magnetic field. This activity will allow your students to further explore the magnetic fields of two magnetic objects. There is a template on the following pages but you may need to gather a few materials.
- b. Have students tie one end of fishing line (or string) to a paperclip. Using clear tape, attach the fishing line and paperclip to the back of the paper butterfly, near the head.
- c. Tape the other end of the fishing line to a table top or other solid surface.
- d. Place the butterfly flat on the table, so that the paperclip is not showing.
- e. Using a magnet wand (eNasco.com or other science supply company) or other magnet, challenge students to slowly move the magnet close to the butterfly and attempt to lift it off of the table without touching the magnet and paperclip together. It will give the appearance of fluttering on its own.
 - i. It may take several attempts to lift the butterfly without the magnet and paperclip touching. Once students can do this, they can move the magnet around to get an idea of where the two objects' magnetic fields begin and end.
 - ii. As the magnet is moved farther away from the butterfly, it moves out of the magnetic field and the butterfly drops to the table.

2. Discussing Results

- a. As a class, discuss which items were attracted to the magnets. Which ones were not?
- b. Read: Magnets: Pulling Together, Pushing Apart by Natalie Rosinsky
or
What Makes a Magnet? by Franklyn Branley (if not read during pre-visit activities)
- c. 2nd Grade: Generate a class list sharing the results from the experiment done on your trip (see template on following pages). Discuss which magnets were strongest and weakest.
 - i. Have students collect magnets from school/home and redo the experiment. Compare results from the first experiment.
 - ii. Why are some magnets stronger than others?
 - a. Type of magnet - What metals is it made of?
 - b. Arrangement of the electrons may be more aligned in some magnets and less in others.
 1. As magnets are used over and over they may lose some of their magnetism because of wear and tear. Dropping a magnet can cause the electrons to become unaligned, therefore losing its magnetic property.
 2. We can also create temporary magnets by aligning the electrons in an object, such as in a nail.



Magnet Might Class Results

Type of Magnet	Number of Metal Nuts Held

