

# Magnet Magic

In school, the children have discovered that magnets interact with objects made of different metals. This activity allows you and your child to determine how the thickness of an object will affect the attraction between a magnet and a paper clip.

## WHAT YOU NEED:

- magnet
- paper clip
- piece of paper
- piece of cloth
- plastic sheet
- aluminum foil



## WHAT TO DO:

1. Ask your child to predict if a single layer of paper, when placed between the magnet and the paper clip, will allow the magnet to attract the paper clip.
2. Hold the paper parallel to the table. Have your child place the magnet on the paper. From below the paper, bring the paper clip toward the magnet. Can you make them interact?
3. Record your results on the chart, writing "yes" or "no". Repeat this test using the piece of cloth in place of the paper. Record your result. Repeat using the aluminum foil. Repeat using the plastic.

4. Fold each of the objects in half. Using the same procedure, test each object for interaction. Record your results. Fold the objects in half again. Repeat the procedure. Record your results. Again, fold the objects in half. Repeat the procedure. Record your results.
5. Look at your chart. What do you notice? Does the interaction continue after 2 folds? After 3 folds? After 4 folds? Is it the same with each object? How does the thickness of the object affect the interaction? Try it again with 5 folds.

**Interaction Chart**

Objects	Flat	1 Fold	2 Folds	3 Folds	4 Folds
Paper					
Cloth					
Aluminum Foil					
Plastic Sheet					

**SUMMARY:** Magnetism will pass through all objects tested as long as the thickness of the material does not interfere with the magnetic field.

## EXTENSIONS:

### *Further Investigations:*

- Can you find a thin object that will prevent the magnet and clip from interacting?
- Collect different magnets and help your child to discover which magnet is the strongest.
- Which part of the magnet has the strongest pull? See how many paper clips you can stick to different parts of the same magnet.

### *Literary Connections:*

- Amery, Heather, and Angela Littles. *The Fun Craft Book of Magnets and Batteries*. Scholastic Book Service, 1976.
- Davis, K. and Wendy Oldfield. *Electricity & Magnetism*. Steck-Vaughn, 1992.
- Flaherty, Michael. *Magnetism & Magnets*. Copper Beech Books, 1999.
- Keen, Martin. *The Know-How Book of Experiments with Batteries and Magnets*. Grosset and Dunlap, 1976.
- Podendorf, Illa. *True Book of Magnets and Electricity*. Children's Press, 1972.

### *Related Web Sites:*

<http://ofcn.org/cyber.serv/academy/ace/sci/cecsci/cecsci131.html>

<http://www.beakman.com/interact/mag.html>