



## What Will A Magnet Attract?

(First Grade Lesson)

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### Introduction

Magnets are an important part of our daily lives. We rely on them to run our televisions, telephones, microwave ovens, computers, etc. Electricity is dependent on the use of magnets.

### "Where's the Science?"

Magnetism is caused by moving electrical charges. These electrical currents produce a magnetic field. This current "lines up" all the molecules in a very orderly fashion. This produces the mysterious power that makes magnets seem to have. When teaching about magnetism, we usually focus on individual magnets and their magnetic fields. We talk about the **poles of a magnet**-the ends of the magnet where the power is stronger than anywhere else on the magnet. The poles allow us to view the interaction between the magnetic fields of magnets or between magnets and the materials in which a magnetic field has been induced.

When working with students, we talk about magnets **attracting** and **repelling** objects around them. The poles of magnets can attract and repel. Like poles repel each (north-north, south-south). Opposite poles attract each other (north-south).

### Materials

Per group or in a center

- A piece of plexiglass about 2 feet by 3 feet
- One magnet
- Various objects to place on the plexiglass. These should include both magnetic and non-magnetic items, such as:
  - Paperclips and brass fasteners

- Various coins
- Metal toy cars
- Washers and nuts
- Keys
- Various plastic, wooden, cork items
- School safety scissors
- Pencils
- Another magnet

#### **For the class**

Make a chart with pictures of each object that students will test and label the object by the picture. The labels should be large enough for students to see from a distance.

#### Procedures

1. Hide a magnet in your pocket and casually bring a small pair of school safety scissors to the outside of your pocket. Move your hand away so that the scissors are stuck to your clothing. Wait for a student to notice what just happened. Ask students how this could happen.
2. Show the class some magnets and ask them if they have ever seen or used them before. What do they know about magnets? Tell them to share what they know with a partner. Then have some students share with the whole group.
3. Briefly discuss how magnets are used in our everyday world. Also discuss how magnets can damage certain objects in the room: computers, wind-up watches, radios, and other appliances. Put "Do Not Touch" signs on these things and warn students not to go near them with any magnet.
4. Explain to the students that they will be working in small groups to find out what kinds of objects will be attracted (stick) to a magnet. Tell them that objects that *stick to or are **attracted*** to a magnet do so because they are made from a material (usually iron) which is magnetic.
5. Show the students how to set up a piece of plexiglass across two chairs that are far enough apart to allow a student to fit between the chairs under the plexiglass.
6. Show the class a container of objects that they will test to see which objects are attracted to the magnet. They are to remove the items from the container and spread them out on the plexiglass. One student will go under the plexiglass with the magnet and rub the magnet on the

underside of the plexiglass. The rest of the group watch to see if anything moves and follows the magnet.

7. Allow time for each student in the group to test the objects.
8. Then as a team, the students should sort the objects into two groups: those that were attracted (stuck) to the magnet and those that were not attracted to the magnet.
9. To record the results, they should fold a sheet of paper in their science notebook hot dog style. On top on one side, they should write the word "sticks" and at the top of the other side, they should write the words "doesn't stick". Then they can draw and/or write the names of the objects that fit into each category.
10. When everyone in the class has had a chance to complete this investigation, have the group come together to share their results. Have the students sit with their teams in a circle. On the floor, place a large sheet of paper that has been labeled the same as their recording sheet in their notebook. Hold up one item at a time and ask where it should be placed. The students can refer back to their science notebooks if they do not remember. Ask: Did everyone get the same results? If not quickly retest the object using a magnet to see what happens.
11. When all the items have been placed on the floor chart, ask what they notice about the objects. Are there any similarities? Was there anything that seemed strange about the results? This is the time to clarify any misconceptions the students may have about what is or is not magnetic.

### **Accommodations**

You may wish to choose teams so that students who struggle with directions or do not understand English well will have support. Also, it will be helpful if someone in the group is able to help the others with the writing of the recording sheet.

### **Assessment/Data Collection**

The recording sheet can be used as a piece of formative assessment. Also during the final sharing/discussion, careful observations of their comments will help you determine what to do next with the study of magnets.

### **Nevada State Standards (N.S.S.)**

**P.2.B.3** Students know magnets can be used to make objects move without being touched.

### Additional Resources

AIMS Education Foundation. *Mostly Magnets*

Franklyn M. Branley and Eleanor K. Vaughan *Mickey's Magnet*

Scholastic Book Services

Franklyn M. Barney. *What Makes a Magnet? A Let's Read and Find Out  
Science Book*

Delta Science Readers. *Magnets*. Delta Education