

## *Invisible Forces Activity Bag*

# **Magnets & Materials: Student Activity Guide**

Have you ever noticed magnets? Often, people, have magnets sticking to their refrigerators. Magnets stick to some things but not others. This activity will explore which materials magnets stick to.

### **Materials From The Bag**

- Bar Magnet
- Fuzzy Craft Stem
- Aluminum Foil
- Small Washer
- Penny
- Paper Clip

### **You Will Need**

- Science Notebook or Student Activity Sheet from the teacher.

### **Part 1: Exploration**

1. Take the bar magnet and the paper clip out of the bag.
2. Place the bar magnet close to the paper clip. What do you notice?

#### *What's happening...*

The magnet pulls on the paper clip. The word “**attract**” describes the **pull** between a magnet and other materials. A magnet sticks to things because it attracts them, and it attracts only some things. Materials that a magnet attracts are called magnetic

3. Without leaving your seat, your first challenge is to find as many things as possible that stick to your magnet.
4. Your second challenge is to find as many things as possible that do not stick to your magnet.
5. Based on your exploration complete the sentences below:

Magnets stick to...

Magnets don't stick to...

## Part 2: Magnetic Force Hunt

1. Take a look around the classroom. Predict which object you think the magnet will be attracted to and which object you think the magnet will not be attracted to.
2. Use your bar magnet to test the different things.
3. Based on your exploration complete the sentences below  
One thing I expected the magnet to attract, and it did, was \_\_\_\_\_.  
One thing I expected the magnet to attract, and it didn't, was \_\_\_\_\_.  
One thing I expected not to be magnetic, and it wasn't, was \_\_\_\_\_.  
One thing I expected not to be magnetic, and it was, was \_\_\_\_\_.
4. Look at your magnet statements from **Part 1 number 5**. Add to your statement and use terms for what objects are made of, such as wood, glass, plastic, metal, cloth, or paper.

### *What's happening...*

You may have noticed that the magnet sticks to metal but not non-metals such as plastic, wood, or paper. However, **magnets are not attracted to all metals.**

## Part 3: Exploring Metals and Magnets

1. Put the magnet to the side and observe your test materials: aluminum foil, penny, washer, and fuzzy craft stem.
2. In the chart below **predict** which objects you think the magnet will attract.

Object	Prediction	Result
Aluminum Foil		
Penny		
Washer		
Fuzzy Craft Stem		

3. Place the bar magnet next to the aluminum foil. Did the magnet attract the aluminum foil? Record your result for aluminum foil in the chart above.

4. Repeat step 2 with the penny, washer, and fuzzy craft stem.
5. Which object or objects surprised you?

*What's happening...*

The washer is made of many metals including iron. Magnets are only attracted to items made of iron or containing iron. Many metal objects do not contain any iron. Soda cans, made of aluminum, are an example of a metal that does not contain iron.

6. Take a look at the metal objects around the classroom.
7. Use the bar magnet to test the metal items. Which items contain iron and which items do not contain iron? How do you know?

**Save all materials for the other activities.**