



# Magnets: Student Activity Sheet

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Part 1: Magnets and Magnets

Find and **draw below** different arrangements in which the magnets attract or repel.

Attract	Repel

List some rules for magnets attracting and repelling each other. \_\_\_\_\_

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## Part 2: Magnets and Materials

In the table below record your prediction about whether the item will interact with the magnet. Circle Y for yes or N for No. **After** you have made your prediction, get a magnet, conduct your test and record the results in *Prediction Chart #1*.

## Prediction Chart #1

Item	Prediction		Result	
Paper Clip	Y	N	Y	N
Rock	Y	N	Y	N
Magnetite	Y	N	Y	N
Brass	Y	N	Y	N
Aluminum	Y	N	Y	N
Rubber	Y	N	Y	N
Plastic	Y	N	Y	N
Chipboard	Y	N	Y	N
Pipe Cleaner	Y	N	Y	N
Steel	Y	N	Y	N

Magnets can attract \_\_\_\_\_.

Magnets do not attract \_\_\_\_\_.

## Part 3: Floating Paper Clip

In the table below, predict which test objects **will block** the magnet's pull and make the paper clip fall when it is placed **between** the magnet and the paper clip. **After** you have made your prediction, conduct your test and record the results in *Prediction Chart #2*.

## Prediction Chart #2

Item	Prediction		Result	
Brass	Y	N	Y	N
Aluminum	Y	N	Y	N
Steel	Y	N	Y	N

## Magnet Challenges

**Challenge 1:** Using a pencil and donut magnets, how could you suspend a magnet in mid-air without touching it? Draw your idea below and explain how it works.

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**Challenge 2:** Your class just got a new box of 30 bar magnets. Only one of the magnets has the north and south poles marked on it. Your teacher asks you to mark all of the other magnets.

How will you do this? \_\_\_\_\_

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**Challenge 3:** Your class got another box of bar magnets. All of the magnets are unmarked. You soon realize that in the box there are also bars of iron that are **not** magnets, but they look exactly like the magnets. How can you separate the pieces of iron that are not magnets from the actual magnets? \_\_\_\_\_

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**Challenge 4:** How can you remove a paper clip from a glass of water without putting anything else in the water or pouring any of it out? \_\_\_\_\_

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**Challenge 5:** Sam claimed that he found a way to use scissors to cut the magnetic force of donut magnets. Sarah told him there was no way he could use scissors to cut a magnetic force, just like you can't use scissors to cut gravity. To prove he could do it, Sam set up a suspended paper clip using two donut magnets, just like you did in class. Then he took a pair of scissors and "cut" the air between the paper clip and the magnets. As the scissor blades came together, the paper clip instantly fell to the desk. "See?, I did it," Sam said. Did Sam cut the magnetic force, or was Sarah right? Explain the reason for your answer. \_\_\_\_\_

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