

## STEM Explorers™ Magnet Movers



### Standing Magnet Jump

**TOOLS:** Horseshoe Magnet; Bar Magnet; Magnetic Post

**EXTRAS:** Coloured markers; Masking tape; Metal objects such as paperclips, washers, steel bolts, etc.

**KEY SCIENCE CONCEPT:** Magnets are not attracted to all magnetic objects equally. Magnets attract certain metals: iron, steel, nickel, and cobalt.

#### WHAT TO DO:

1. Tear off a 30cm strip of masking tape and set it on a flat surface. Use a marker to write the word Start at one end and make a line across the tape to indicate the starting position.
2. Set a paperclip (or other magnetic item) at the starting line. Pick up the bar magnet. Starting from the opposite end of the tape, slowly move the bar magnet toward the paperclip.
3. Where the paperclip jumps to meet the magnet, make a line with the marker to indicate the magnet's placement. Do the same with the horseshoe magnet and the magnetic post. Which of the magnets, if any, had the strongest attraction to the paperclip?
4. Take the same measurements with other objects such as washers and steel bolts. Compare your findings with what you learned from measuring the paperclip. Does the magnet that had the strongest attraction to the paperclip also have the strongest attraction to the washer? How about the steel bolt?

## Go Fly a Kite!

**TOOLS:** Horseshoe; String; Bar Magnet; Magnetic Post; Ring Magnet

**EXTRAS:** Paperclip; Sheet of paper; Tape

**KEY SCIENCE CONCEPT:** Magnetism is powerful enough to temporarily defy gravity.

### WHAT TO DO:

1. With the help of an adult, cut a diamond shape about 10cm out of a piece of paper. Tape a paperclip to the top corner of the diamond. This is your kite.
2. Tape one end of the string to the bottom corner of the kite and tape the other end of the string to a flat surface.
3. Pick up the horseshoe magnet. Hold the magnet over the kite and raise it high into the air while maintaining contact between the paperclip and magnet. How far can you stretch the string?
4. Now, very slowly move the magnet away from the paperclip until the kite is able to fly without direct magnet contact! Try maintaining this level of separation while moving the kite through the air in different directions.
5. Also, try this activity with different magnets in the set. Does the kite fly as well with the bar magnet, magnetic post, or ring magnet?

## Magna Charta

**TOOLS:** Horseshoe; Magnetic Post; Bar Magnets; Ring Magnet

**EXTRAS:** Pen; Paper; Household items such as paperclips, washers, steel bolts, cereal, keys, etc.

**KEY SCIENCE CONCEPT:** A magnet's attraction to an object depends on the strength of the magnet and the composition of the object.

### WHAT TO DO:

1. With the help of an adult, print out the chart on the following page or create one that looks similar.

2. Spread out an assortment of the “extras,” or other handy items, in separate piles on a flat surface. Write in the name of each item on the chart, filling in the blank squares on the left-hand side of the page.
3. Discuss characteristics of each item and make predictions about which ones will be attracted to magnets.
4. Test your predictions! Start with the first magnet and item on your chart. Bring the item close to the magnet and see if there’s an attraction. If the magnet attracts the item, write Y for yes in the appropriate column; if it does not attract, write N for no.
5. Continue with the next magnets on your chart. When you finish testing the first item with all the magnets, move on to the second item.
6. Do the items that attract have any characteristics in common? How about the items that do not attract? Do all things shiny attract? Do all things colorful attract? Why or why not?

Household Item				