

Magnetism – How Attractive Is It?

Magnets are fun to play with but let's see how strong your magnet is.



Materials:

- Masking tape
- Paper clips (steel)
- Magnet

Procedure: (Remember to have your parent's permission and have them watch and help you.)

- Pull the two loops forming a paper clip apart 90 degrees so that the two loops form an L shape.
- Attach this to your magnet so that one side of the L is attracted to the bottom of your magnet and the other part forms a hook hanging below your magnet.
- **Hang paperclips on the hook one at a time.**
- **Count the number of clips as you add them and record the number it held before it becomes too heavy for the magnet to hold.**
- **Stick three pieces of tape to the bottom of your magnet then once again attach the magnet to the bottom of the magnet and add clips to the hook until it won't hold any more. Record your result.**
- **Add three more pieces of tape on top of the ones you've already put in place, repeat the experiment and record your results.**
- **Continue adding tape (three at a time), repeat the experiment and record your results.**

What's Happening:

As you add more and more layers of tape, what do you notice about the number of paperclips on the hook? Is the magnet able to hold more, the same or fewer clips? Do you think that the tape is causing this? Why?

The farther away from a magnet you get, the weaker the attractive magnetic force. In fact distance significantly affects the attractive force so much so that you soon feel nothing as you move the attracted object a short distance away from the magnet.

Extension:

Test a variety of other materials (foil, brown paper bag, waxed paper, cotton, etc.) to see if they have the same effect as the tape. Try different magnets to see if the results are the same. A compass needle is a magnet balanced on a needle point so it also can be used as a very sensitive device to detect the attractive magnetic force.

This activity is based on our Magnetism kit. The source for this lab was: <http://scienetlinks.com/lessons/magnets-2-how-strong-is-your-magnet/>. Our teaching kits (described on our website) are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering as a classroom guest speaker or allow your business as a field trip location.

Lorne Cooper, Regional Executive Director

PRAXIS, "Making Science Fun". Contact Praxis at praxis@praxismh.ca, www.praxismh.ca, Tweet or follow us @PraxisMedHat, or friend us on Facebook. Address: c/o 200 7th Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.