

Magnetism – Pound Your Way to Success!

Hitting a magnet can cause it to lose some or all of its magnetic powers. Can the reverse be true?



Materials:

- Large steel nail (spike)
- Piece of 2x4
- Hammer
- Compass

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

- Take a steel rod, such as an unused pin from a door hinge or a large nail (spike).
- Check to see if it has any affect when a compass is brought near it. Write down your observations.
- Use the compass to line the nail up in the North-South direction, on top of the 2x4 wood.
- Hit it 50 times with a hammer.
- Check it again to see if it has any affect on a compass. Write down your observations.
- Turn the nail around so that it is lined up opposite to what it was in the previous activity.
- Hit it 50 times with a hammer.
- Check it again to see if it has any affect on a compass. Write down your observations.
- Turn the nail so that it is now lined up in an East-West direction and hit it another 50 times with a hammer.
- Check it again to see if it has any affect on a compass. Write down your observations.

What's Happening:

Normally the nail is unmagnetized to begin with, it become magnetized in one direction in the North/South orientation, magnetized in the opposite direction when you reversed it, and demagnetized when you orientated it East/West. Magnets can become demagnetized by physically hammering or dropping them when the poles of the magnet are opposite to the poles of the earth, or at right angles to the poles of the earth.

Extension:

When liquid rock (magma) solidifies the Earth's magnetic field influences the orientation of the particles making up the rock. If the liquid rock contains a high ferromagnetic content it may form into a magnet. The word **magnet** in Greek meant "stone from Magnesia", a part of ancient Greece where they were found. Lodestones were valued because if suspended they eventually would line up North/South. See: <http://en.wikipedia.org/wiki/Magnet>.

This activity is based on our Magnetism kit. The source for this lab was: <http://www.coolmagnetman.com/magstren.htm>. 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.