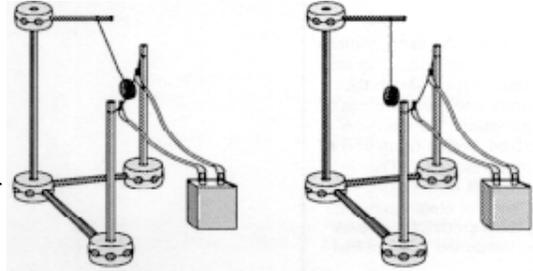


## Magnetism – Curie Point

Does temperature have an impact on the strength of magnets?

### Materials:

- Small magnet (disk shaped with centre hole works well)
- String 30 cm
- Wooden stand to hold the magnetic pendulum
- Wooden stand to hold the wire
- 6v Lantern battery or battery charger
- Electrical lead wires with alligator clamps at both ends.
- 10 cm of thin iron wire (separate one strand of braided picture-hanging wire)



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

- Make a stand from Tinkertoys™ or other wood where you can suspend the magnet from the top of the stand with a string creating a magnetic pendulum at least 10 cm long.
- Make another pair of wooden stands and stretch the iron wire between the two stands so that, at its closest, the wire is 2.5 cm from the magnet.
- Touch the magnet to the iron wire. It should magnetically attract and stick to the wire. (If not replace the wire with one that is magnetic.) Leave the magnet stuck to the wire.
- Connect the clip alligator clamp leads to the terminals of the lantern battery.
- Connect one clip lead to one side of the iron wire.
- Touch the other clip lead to the iron wire on the opposite side of the magnet.
- Current will flow through the iron wire, causes the wire to heat up. (**CAUTION:** The wire will get hot!)
- Observe what happens.
- Disconnect the touching wires (break the circuit) before the wire melts.
- Let the iron wire cool (careful, it can burn you).
- When the iron wire is cool, repeat the experiment.
- Note: If the iron wire does not heat up enough just move the clip leads closer together.

### What's Happening:

When a piece of iron gets too hot, it is no longer attracted to a magnet. When you heat the iron to a high enough temperature (called the *Curie point*), it loses its ability to be magnetized. Heat energy scrambles the iron atoms so that they can't line up and create a magnetic field.

### Extension:

Try sticking as many paper clips as you can to a magnet. Use a hot air hair dryer to heat up the magnet and observe what happens.

This activity is based on our Magnetism kit. The source for this lab was: [http://www.exploratorium.edu/snacks/curie\\_point/index.html](http://www.exploratorium.edu/snacks/curie_point/index.html). 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.



Praxis will be hosting Operation Minerva, a conference for grade nine girls, on March 15<sup>th</sup>.

<http://praxismedhat.com/services-operation-minerva>.

Lorne Cooper, Regional Executive Director

PRAXIS, “Making Science Fun”. Contact Praxis at [praxis@praxismh.ca](mailto:praxis@praxismh.ca), [www.praxismh.ca](http://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.