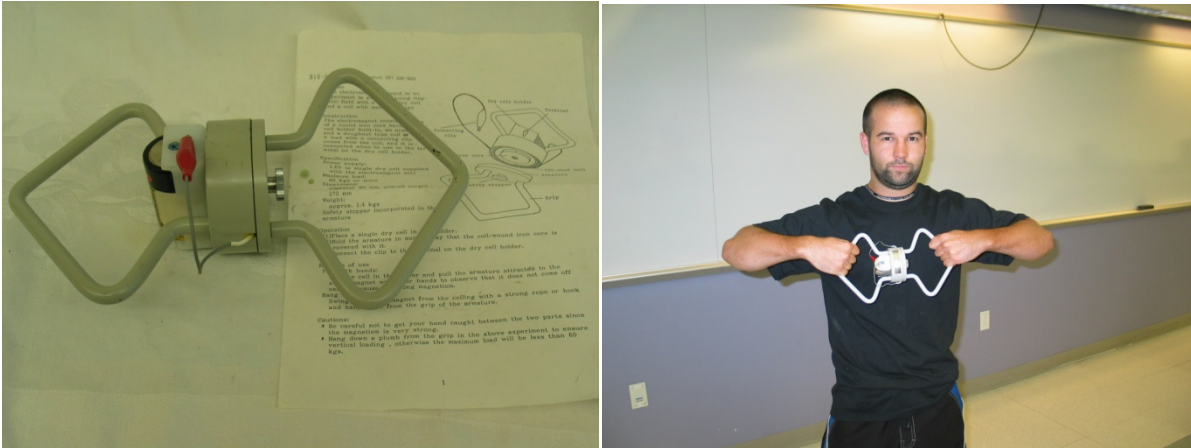


Electromagnet



Purpose: To show that a strong magnetic field can be produced using only a 1.5V battery and an electromagnet.

Location: Room 146; shelf M5

This electromagnet consists of two handles, a 150 turn wire coil, an iron core (ferromagnetic core), and a 1.5V battery and terminals. There is a safety screw that should be used to prevent any accidental throwing of one end of the electromagnet across the room. (I almost did that!)

With the battery disconnected, show the class there is little or no magnetic field, and let them see that inside is just a wire coil and iron core. Line up the two plates and be careful not to get any fingers in between. With the plates together, connect the battery by clipping the red alligator clip to the battery terminal. A magnetic field is produced due to the current in the wire loops, and the iron core intensifies the field. The electromagnet is strong enough for a maximum load of 60kgs, so most or all students should not be able to pull it apart.

If you are going to allow students to try to pull the magnet apart, once again make sure the safety screw is in place.

Do not leave the battery connected any longer than necessary!