

# Lab Combine - Electromagnet

## Overview

You will be working on a combination lab this week. The objective is to build a magnet. This may seem a little weird – don't you just go buy a magnet? We will be looking at the connection between electricity and magnetism in the coming weeks so if you have not ever built an electromagnet you will appreciate the experience.

## Queries

Magnets:

- How many different ways can you use a nail to pick up a paperclip? (Hooking the paperclip on the tip of the nail does not count)

### USEFUL SUPPLIES:

- Battery (D-cell)
- Wire
- Nail
- Permanent magnet
- Paperclips

### USEFUL EQUIPMENT:

- Battery eliminator
- DMM

Directions for Electromagnet:

- Wind wire around a nail.
- Connect ends of wire to battery
- Voila! You have a magnet.

## Experimental Considerations

- Watch the temperature of circuit components.
- How can you increase the amount of paperclips your electromagnet can pick up?