

# ELECTROMAGNET

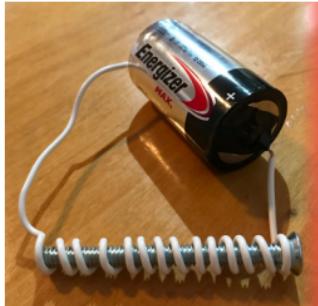
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ELECTRICITY  
GENERATION



ENERGY  
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BY INSIDE EDUCATION



## What is an electromagnet?

An electromagnet is a magnet that is created by electricity. Electromagnetic motors are in devices we use every day such as refrigerators, dryers, dishwashers, vacuums, doorbells, computers, clocks, fans, electric toothbrushes, and more!

### What do I need ?

- Metal nail or bolt (*iron, zinc or steel*)
- Insulated copper wire
- D-cell battery
- Electrical tape
- Paperclips

### How do I build an electromagnet?

1. Wrap the wire around the bolt at least 15 times (*wrap tightly and don't overlap*)
2. Secure the ends of the wire to either side of the D-cell battery using electrical tape  
(*CAUTION: Once both ends of the wire are connected to the battery, the wire and battery terminals will get hot to touch after a short time.*)
3. Test the strength of the electromagnet by seeing how many paperclips it can pick up

### Extensions

1. Increase the number of times the wire is wrapped around the nail. Is your electromagnet stronger? Test it out by seeing how many paperclips it can pick up.
2. Experiment with changing the battery type. Do different batteries make your electromagnet stronger or weaker?