

My experiment log

Experiment 12: build an electromagnet with a nail

1 WHAT YOU'LL NEED

- | | | |
|--|---|-------------------------------------|
| ☐ Iron nail | ☐ Copper wire, about 1 m | ☐ AA battery |
| ☐ 5-6 paper clips | ☐ Sticky tape | |

2 BEFORE YOU START - MAKE A HYPOTHESIS

What do you think will happen when you connect the battery? Tick one.

- ☐ The nail will feel warm
- ☐ The nail will pick up paper clips
- ☐ Nothing will happen

Why did you pick that? _____

3 DRAW YOUR SETUP

Nail, coil and battery

4 RUN IT - COUNT THE PAPER CLIPS

Turns of wire

Paper clips picked up

10 turns

20 turns

40 turns

5 THE BIG IDEA

More turns of wire means the magnet is:

- ☐ Stronger ☐ Weaker ☐ No different

This is electromagnetism - electricity making magnetism happen.

6 REAL-LIFE CONNECT

Junkyards use giant electromagnets to lift whole cars. Why is an electromagnet better for that job than an ordinary magnet?

Rate this experiment:

SIGNED BY SCIENTIST

Name: _____ Date: _____