

## 22.6: Thinking about the material

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### Reflect and research

1. Who discovered Ampere's Law? What did Ampere discover?
2. What are three common uses of electromagnets.
3. How does a coil gun work?

### To try at home

1. Use a battery and some wire to build an electromagnet. Is it stronger if you use a ferromagnetic core?
2. Research the current that your household electronics have. Are design choices effected by the magnetic fields generated by the current in these electronics?

### To try in the lab

1. (Simulation) Calculate the magnetic field from a loop of current at all positions in space (not only on the axis of symmetry).
2. Propose an experiment to characterize the magnetic field produced by Helmholtz coils.
3. Propose an experiment to build and test a coil gun.

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