

1. Compare your initial prediction with your field line diagram and iron filing diagram. How accurate was your prediction? Explain any differences.

Part Two: Creating an Electromagnet

- a. Wrap the wire 25 times around the nail without overlapping.
- b. Strip the ends of the wire to expose the copper interior so that it can be connected to the battery holder.
- c. Draw a diagram of your electromagnet.

- d. Begin with one battery connected to the wire, and attempt to pick up the paperclips with the nail.

1. Increase the number of batteries connected to the wire. What do batteries add to the circuit?

2. How does the strength of the magnet change as more batteries are added to the circuit?

- e. Increase the number of times the wire is wrapped around the nail to 50, and again attempt to pick up the paperclips.

3. How does the strength of the magnet change as the wire is wrapped more times around the nail?
