

Name:

Date:

Class:

## Powering Up with Electromagnets Worksheet

**Instructions:** Working in teams, make, test, and experiment with electromagnets. Draw your electromagnet setups and record the relative strength of your electromagnet designs.

### Activity 1: Basic Electromagnet

Draw and label the basic electromagnet setup, including the number of wire wraps, battery size, and nail length:

Record how many paperclips the electromagnet can pick up when it's turned on: \_\_\_\_\_

## Activity 2: Electromagnet Design Challenge.

**Instructions:** Draw and label your team's electromagnet design setup, including the wire gauge, number of wire wraps, battery size, and nail length. Record how many paperclips the electromagnet can pick up:

| Electromagnet Design 1               | Electromagnet Design 2               | Electromagnet Design 3               |
|--------------------------------------|--------------------------------------|--------------------------------------|
| Wire gauge:<br>Number of nail wraps: | Wire gauge:<br>Number of nail wraps: | Wire gauge:<br>Number of nail wraps: |
| Sketch of electromagnet setup:       | Sketch of electromagnet setup:       | Sketch of electromagnet setup:       |
| # of paperclips picked up:           | # of paperclips picked up:           | # of paperclips picked up:           |