

# 16. Electromagnetism

**Classroom Activity:** Understand the basic concepts behind electromagnetism. Demonstrate how a magnetic force can produce an electrical current. Demonstrate how a coil can generate a magnetic force.

**Grade:** 6

**Strand(s):** Understanding Matter and Energy

This task addresses the following overall expectations:

- investigate the characteristics of static and current electricity, and construct simple circuits;
- demonstrate an understanding of the principles of electrical energy and its transformation into and from other forms of energy.

and the following specific expectations:

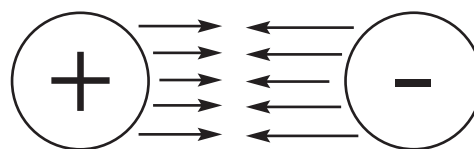
- follow established safety procedures for working with electricity;
- design, build, and test a device that produces electricity;
- use technological problem-solving skills to design, build, and test a device that transforms electrical energy into another form of energy in order to perform a function;
- use appropriate science and technology vocabulary, including current, battery, circuit, transform, static, electrostatic, and energy, in oral and written communication;
- use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes;
- describe how various forms of energy can be transformed into electrical energy;
- identify ways in which electrical energy is transformed into other forms of energy.

**Assessment Categories:**

- Knowledge and Understanding
- Communication

**Type of Activity:** small group work

Preparation (approx. 60 minutes)



Time need to complete the task: approx. 120 minutes

**Materials and Resources for Teachers:**

magnets  
coil of wire  
insulated wire and a steel core  
battery  
ohm meter or another device to measure electrical current

**Materials and Resources for Students:**

magnets  
wire

**Activity Description:**

Explain and demonstrate to the whole class the theories and concepts behind electromagnetism. Discuss the electromagnetic action of a doorbell and the creation of a magnetic field by a coil of wire energized by a battery.

Divide the students into groups to make their own electromagnets by winding their own coils of wire and passing a magnet through the centre.