Electricity—

Walck

Requirements were REVISED effective January 1, 2021.

Requirements in **BOLD print** are prerequisite for this merit badge.

1. Demonstrate that you know how to respond to electrical emergencies by doing the following:
    a. Show how to rescue a person touching a live wire in the home.
    b. Show how to render first aid to a person who is unconscious from electrical shock.
    c. Show how to treat an electrical burn.
    d. Explain what to do in an electrical storm.
    e. Explain what to do in the event of an electrical fire.
2. **Complete an electrical home safety inspection of your home, using the checklist found in this pamphlet or one approved by your counselor. Discuss what you find with your counselor.**
3. Make a simple electromagnet and use it to show magnetic attraction and repulsion.
4. Explain the difference between direct current and alternating current.
5. Make a simple drawing to show how a battery and an electric bell work.
6. Explain why a fuse blows or a circuit breaker trips. Tell how to find a blown fuse or tripped circuit breaker in your home. Show how to safely reset the circuit breaker.
7. Explain what overloading an electric circuit means. Tell what you have done to make sure your home circuits are not overloaded.
8. **Make a floor plan wiring diagram of the lights, switches, and outlets for a room in your home. Show which fuse or circuit breaker protects each one.**
9. **Do the following:**
    a. **Read an electric meter and, using your family's electric bill, determine the energy cost from the meter readings**
    b. Discuss with your counselor five ways in which your family can conserve energy.
10. Explain the following electrical terms:

- volt,
- ampere,
- watt,
- ohm,
- resistance,
- potential difference,
- rectifier,
- rheostat,
- conductor,
- ground,
- GFCI,
- circuit, and
- short circuit

11. Do any TWO of the following:
    a. Connect a buzzer, bell, or light with a battery. Have a key or switch in the line.
    b. Make and run a simple electric motor (not from a kit).
    c. Build a simple rheostat. Show that it works.
    d. Build a single-pole, double-throw switch. Show that it works.
    e. Hook a model electric train layout to a house circuit. Tell how it works.