

Electricity Merit Badge – Home Inspection Checklist and Electrical Wiring Map

Scout Name _____ Date _____ Parent Signature _____

Complete an electrical safety check at your home. Be able to discuss what you find.

Electrical Cords & Outlets

Inspect all wires and cords for fraying or damage. Are all wires and cords in good condition?

Yes Problems found and corrected.

Are wires and cords kept out from beneath furniture and carpets?

Yes Problems found and corrected.

Are outlets properly used and not overloaded?

Yes Problems found and corrected.

Are indoor extension cords only used inside?

Yes Problems found and corrected.

Do your outlets in bathrooms or near water have ground fault circuit interrupters?

Yes Problems found and corrected.
(Professional electrician will be needed)

Circuit breakers/fuses

Do you have the correct size and rating for your circuit breaker/fuse box?

Yes Problems found and corrected.
(Professional electrician will be needed)

If you have fuses, do any fuses need to be replaced?

Yes Problems found and corrected.

Appliances

Are electrical appliances, such as refrigerators, computers and video game equipment well ventilated to avoid overheating?

Yes Problems found and corrected.

Are electrical items, such as the television, stereo, curling iron and hair dryer kept away from water to avoid accidental electrocution?

Yes Problems found and corrected.

Are hot items like toasters and coffee makers clear of flammable items?

Yes Problems found and corrected.

Outdoor safety

Are extension cords used safely? (Check if they in the way of lawn mowers and other equipment like power tools.)

Yes Problems found and corrected.

Lightning

Do you use electrical equipment during lightning storms?

No I didn't know this was a problem

Do you have surge protectors on electrical equipment to protect it during electrical storms?

Yes Problems found and corrected.

Space heaters

Are space heaters and other heating devices UL listed and always kept at least 3 feet away from other objects?

Yes Problems found and corrected.

Are space heaters turned off before going to bed?

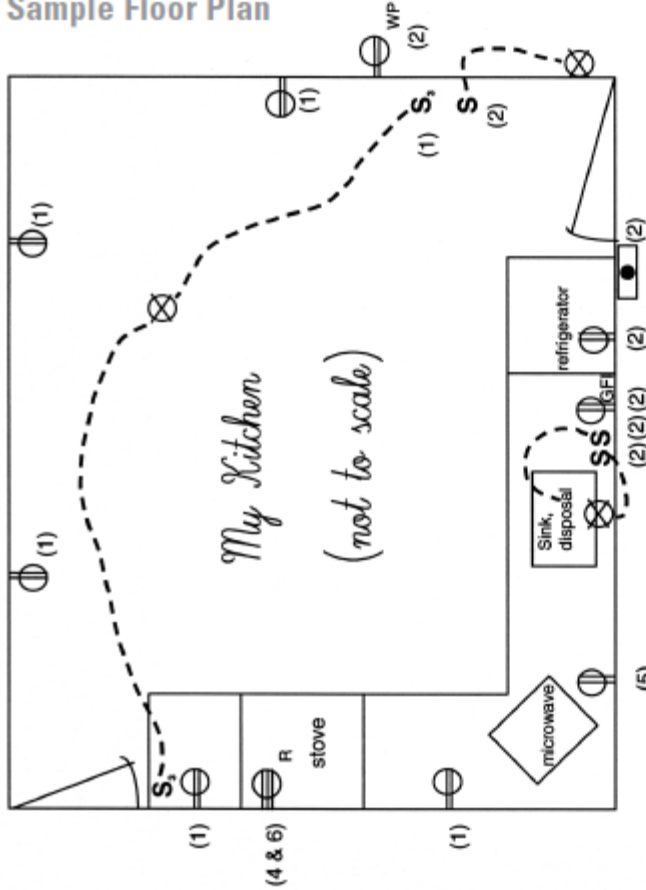
Yes I will remember to do this.

Example: Electrical Wiring Map

- Make a wiring diagram of the lights, switches, and outlets on a floor plan of a room in your home.
- List the number of the fuse or circuit breaker which protects each one.
- Have your parent sign the diagram.

Parent Signature: J Jones

Sample Floor Plan



Use these symbols commonly used in household wiring diagrams to sketch the kitchen in your home.

- Light Fixture
- Duplex Receptacle
- Duplex Receptacle, half controlled by switch
- Single-pole Switch
- Three-way Switch
- Range Outlet
- Dryer Outlet
- Ground Fault Interrupter Circuit (next to sinks in newer homes)
- Weatherproof Receptacle
- Doorbell
- Switch Wiring

Then, using the instructions of Requirements 6 and 8, determine which circuits control the electrical outlets and switches in the room. Sketch either the fuse box or the circuit breaker box in your home and show the circuits that provide electricity to the kitchen.

Fuse Box Example

1 20 A 2 20 A

3 15 A 4 20 A

5 15 A 6 20 A

Circuit Box Example

1 20 A MAIN 20 A

3 15 A 20 A

5 15 A 20 A

Note: Plug-based round fuses are shown to left; cartridge fuses (see below) also are available. Show what is in your fuse box.

Electricity Merit Badge Test

Terms

AC	Fuse / Circuit Breaker	Resistance
Amp	Ground	Rheostat
Circuit	Insulator	Short Circuit
Conductor	Ohm	Transformer
Current	Potential	Volt
DC	Rectifier	Watt

Definitions

1. A coating such as rubber or plastic that does not conduct electricity is called: _____.
2. Current that flows from batteries is called: _____.
3. Current that reverses directions so electricity can travel long distances is called: _____.
4. A _____ opens a circuit when there is too much current and prevents an overload.
5. A unit of electrical force or pressure is called _____.
6. A unit of electrical resistance is called _____.
7. A unit expressing the strength of an electric current is called _____.
8. A unit that measures electrical power is called _____.
9. The flow of electrons through a wire is called _____.
10. A material's opposition to the flow of electricity, measured in ohms is called _____.
11. A _____ is a device that converts AC into a DC by allowing current to flow through it in one direction only.
12. A conductive path over which an electric charge may flow is called a _____.
13. A device that control a current by varying the resistance is called a _____.
14. A connection to a metal water pipe or directly to the earth is called a _____.
15. An abnormal condition of low resistance between two points of different potential in a circuit resulting in an excessive flow of current is called a _____.
16. A material which allows electricity to move through it is called a _____.