



## General Judging Criteria for 4-H Electrical Projects

1. Inspect for the wire wrapping around the screw in the direction that screw tightens down (most commonly screws tighten in a clockwise direction).
2. When using stranded wires, check to be sure that all strands are under the screw head.
3. Select proper wire type and size for the particular load that the project requires (refer to *4-H Electricity Exhibit Suggestions* fact sheet).
4. All projects meant for outdoor use or in potential wet locations should use weatherproof or watertight equipment and connections for all projects.
5. All terminals and connections that utilize household voltages (120 volts) should be enclosed. (Examples: dead-front plugs and receptacles, all connections to be inside electrical boxes).
6. AC connections: Choices include ...
  - a. wire-to-wire connections must be soldered and taped OR
  - b. use proper size wire-nut OR
  - c. use a squeezed connector.
7. Wiring shall be protected from all sharp edges by any effective means. (Examples: grommets, silicone seal, etc.)
8. Ground: all electrical materials, parts, and equipment that are not intended to carry current must be grounded by use of a grounding wire (connected to a threaded grounding screw or wiring clip or grounding lug).
9. All electrical materials and equipment should be UL approved.
10. Where necessary, incorporate over-current protection (fuses or circuit breakers) into the project.
11. AC conductors shall be properly color coded by using black or red as hot wires, white as neutral, and green or bare copper as grounding.
12. **Only use battery powered materials and components for Unit I (*Magic of Electricity*) and Unit II (*Investigating Electricity*). Unit III (*Wired for Power*) must use AC 120 V materials.**