

LEAVENWORTH COUNTY FAIR 2026 4-H ELECTRIC & RENEWABLE ENERGY

Superintendent: Gretchen Manus

Exhibit Judging: Monday, July 27th from 5pm – 8pm; 4-H Building (consultation)

In Electric/Electronics and Renewable Energy, you will have the opportunity to explore the project areas and share what you have learned.

Rules

1. Read General Rules. Violation of any of the following rules may result in disqualification. All decisions will be made by a county agent and their decision is final.
2. Each Electronics & Renewable Energy exhibit must include a “4-H Electronics & Renewable Energy Information Form” which is available through your local K-State Extension Office or at <http://electric.engtech4ks.com/> This form must be attached to the outside of a 10” X 13” manila envelope. You must also include a wiring diagram or schematic. Place them inside the manila envelope. For notebooks, display boards, and posters, no additional exhibit information is required; no manila envelope is needed for these exhibits.
3. Items that have been in use should be cleaned for exhibit.
4. All electrical exhibits’ wiring and connections must be accessible for examination by the judges. Sealed exhibits that cannot be opened for inspection are not acceptable.
5. Lithium batteries must be accessible or removeable in exhibits for safety purposes. The exhibit cannot contain a locked compartment housing a lithium battery.
6. The National Electric Code (NEC) will apply for judging.
7. A sheet of operating instructions must be furnished and included in the manila envelope for any exhibit that is not self-explanatory.
8. Projects (classes 4600, 4601 and 4602) must be operable using only 110 or 120V AC or battery power. If battery power is required, batteries must be furnished.
9. Any project with a complexity of size or electronics must have (a) instructions for assembly and use and (b) if it requires special test equipment beyond a screwdriver or multimeter, it should be available at the time of judging for actual testing of the exhibit.
10. No hand dipped solder may be used on exhibits.
11. If a safety violation is noted by the judges, superintendent, or other staff, the exhibitor’s exhibit, at the judge’s’ discretion, may receive a reduced ribbon placement or disqualification.

Scoresheets, Forms, and Contest Study Materials:

- [Electric and Renewable Energy Scoresheet](#)
- [Electric and Renewable Energy Exhibit Form](#)
- [Educational Display, Notebook or Poster Scoresheet](#)

Classes

ELECTRICAL AND ELECTRONICS

4600 AC Electric: Electric projects with a 110 or 120 V alternating current (AC) power source.

Some project examples are household wiring demonstrations, small appliances extension cords, trouble lights, indoor or outdoor wiring boards, or shop lights. Projects may be a restoration or original construction. The project must be operational and meet minimum safety standards. AC projects must be 110/120 V, no 240 V exhibits are allowed, and must be constructed such that the judges have wiring access to examine the quality and safety of workmanship.

4601 DC Electric: Electric projects with a battery or direct current power source. This class includes electric kits or original projects. This class also includes demonstration DC powered project. Examples include: wiring two-way or three-way switches, difference between series/parallel lighting circuits or wiring doorbells switches. All DC electric projects must include batteries supplied by the 4-H member. Projects must be constructed such that the judges have access to examine the quality of wiring workmanship.

4602 Electronic: Electronic projects with a battery or direct current power source. This class includes electronic kits or original projects. Examples include radios, telephones, toy robots, light meters, security systems, etc. They may be constructed using printed circuit board, wire wrap, or breadboard techniques. Include instruction/assembly manual if the exhibit is from a kit. Include plans if an original project. Projects must be constructed such that the judges have access to examine the quality of wiring workmanship.

4604 Newly built or repaired computers. This class is for newly built or repaired computers (laptop or PC) and allows 4-H members to demonstrate skills integrating the various parts of a computer into a single unit. Displays should show either a fully functional computer or show what the individual components do. The display should be free of dust and cabled neatly. Fully functional computers should boot up and do not need to include a monitor, keyboard, or mouse at the State Fair.

4603 Educational Displays and Exhibits: The purpose of the educational display and exhibit is to educate the viewer about a specific area of the 4-H electrical or electronics project. The display or exhibit should illustrate one basic idea. This class includes any educational displays, exhibits or science fair type projects which DO NOT have a power source, i.e. exhibits, posters or displays of wire types, conduit types, electrical safety, tool or motor parts identification or electrical terminology. Educational displays and exhibits must be legible from a distance of four feet, using a maximum tri-fold size of 3' x 4'.

Alternative ENERGY (A form of energy derived from a natural source, such as the sun, geothermal, wind, tides or waves) All exhibits in this division are limited in size to standard, tri-fold, display boards (36" X 48") and items may not extend beyond 12" from the back board. All displays must be self-standing.

4620 EDUCATIONAL DISPLAY - Create an exhibit that addresses a focused topic related to power generated from a renewable energy source. The purpose of the exhibit is to inform and create awareness.

4621 EXPERIMENT - Display an experiment addressing a problem or question related to power generated from a renewable energy source. Include hypothesis, background research, variables, a control, data, findings, conclusions and recommendations for future study.

Resources: Project Area – [Electricity/Electronics](#)
Project Area – National Curriculum [Renewable Energy \(Power of Wind\)](#)