

4-H ENERGY MANAGEMENT

Includes Electrical/Electronics, Small Engines & Alternative Energy

(Alternative Energy is a form of energy derived from a natural source, such as the sun, geothermal, wind, tides or waves.)

Superintendents

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Junior Superintendents

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1. Read General Rules & Regulations.
2. All exhibits must be the work done during the current club year.
3. Only those who have met the requirements of the electric, small engine or wind energy project are eligible to exhibit in this division.
4. An exhibitor may enter up to three items in this division, but only one article per class. Use the entry card available from the Extension Office. Record all requested information and securely attach to exhibit.
5. Each exhibitor may have no more than 2 entries in each class.
6. Label each article exhibited, giving owner's name, club, name of article and class. Items that have been used should be cleaned before exhibiting.
7. A sheet of operation instructions should be furnished for any exhibit not self explanatory.
8. Projects (classes 414001, 414002, 414003) must be operable using only 110 or 120 V AC or battery power. If battery power is required batteries should be furnished.
9. Any project with a complexity of size or electronics must have (a) instructions for assembly and use; and (b) equipment available at the time of judging for actually testing of the exhibit.
10. No hand dipped solder may be used on exhibits.
11. Each exhibit MUST have a scorecard completed and attached securely. The score card is available from the Extension Office.

AWARDS:

Overall Grand Champion Energy Management Trophy

ELECTRONICS

CLASS:

414001—AC Electric Projects: 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 access to examine the quality and safety of workmanship.

414002—DC Electric Projects: 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 projects. Examples include: wiring two or three-way switches, difference between series/parallel lighting circuits or wiring doorbell switches. ALL DC electric projects must work with batteries supplied by 4-H'er. Projects must be constructed such that the judges have access to examine the quality of wiring workmanship.

414003—Electronics Projects: 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. May be constructed using printed circuit board, wire wrap, or breadboard techniques. Include instruction/assembly manual if 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.

414004—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 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'.

SMALL ENGINES

All exhibits should involve engines smaller than 20 horsepower for classes 414101, 414102, and 414103. Displays are limited to 4' wide and 4' deep—both upright and floor displays.

CLASS:

414101—DISPLAY

Exhibit a display, selecting one of the following options:

1. A display identifying different engine or lawn and garden equipment parts, or a display showing the function of the various engine or lawn and garden equipment parts.
2. A display identifying and explaining the function(s) of different special tools needed for small engine work.
3. A display illustrating and providing the results of any one of experiments that are included in the project books. No complete engines, lawn tractors, tillers, chainsaws are permitted for display. Maximum tri-fold display size is 3' x 4'.

414102—MAINTENANCE

Exhibit a display that illustrates either:

1. Routine maintenance procedures.
2. Diagnosing and trouble shooting specific problems in an engine. No complete engines, lawn tractors, tillers, chainsaws, etc. are permitted for display. Maximum tri-fold display size is 3' x 4'.

414103—OPERATION

Exhibit an operable small engine (no more than 20 HP) overhauled or rebuilt by the member. Include maintenance schedule for the engine and a brief description of steps taken by the member overhauling or rebuilding the engine. Maximum tri-fold size 3' x 4'. Engine should contain no fuel in tank or carburetor.

414104—Notebook: Junior (No class available for this project at Kansas State Fair, Stafford County Fair only.)

414105—Notebook: Intermediate (No class available for this project at Kansas State Fair, Stafford County Fair only.)

414106—Notebook: Senior (No class available for this project at Kansas State Fair, Stafford County Fair only.)



ALTERNATIVE ENERGY

(Alternative energy as a 4-H project is 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 (3' x 4'), and items

may not extend beyond 12" from the back board. All displays must be self standing.

CLASS:

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.

414201—Junior

414202—Intermediate

414203—Senior

414204—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.