

3. Display (all parts) should be able to last the duration of the fair in good repair. An *Educational Display Exhibit Card* (000-01) must be attached to each exhibit. Judging criteria are outlined on the *4-H Science Investigation Display Evaluation Sheet* (840-100). Both are available from the county Extension Office or the state 4-H website.
4. Club exhibits are to be entered under the club name but must include the names of all members and leaders. This may be on a separate paper securely attached to the back of the exhibit. Club exhibit will receive one ribbon per exhibit.
5. **Each piece of an exhibit must have name, county and class numbers securely attached to it. All parts of the display should be attached to one another in some way to keep the exhibit together as a unit.** Single posters may be displayed by hanging or stapling to the wall. All other displays should be free standing. All information contained in the exhibit must be able to be viewed by the public by looking at the display.

- 840 100 001 Junior Science Investigation Display**
840 100 002 Intermediate Science Investigation Display
840 100 003 Senior Science Investigation Display
840 100 004 Club Science Investigation Display

Description: The purpose of this type of exhibit is for members to communicate the processes and outcomes of a scientific investigation they design and conduct themselves. The display must include (1) a question or hypothesis, (2) an investigative procedure (What was done?), (3) the data collection or observation method (How was it collected/observed), (4) a report of the data collected or observations made, (5) an analysis of the data collected or observations made (How do you interpret the data and evidence?), (6) a conclusion addressing the original question or hypothesis (Does the evidence support or refute your claim?). Intermediate and Senior Exhibits must include a data chart and a graph or other visual representation of the data.

4-H ENGINEERING

ELECTRICITY

1. Each exhibit piece must be labeled with the member's name, county and class number. If more than one article is contained in the exhibit each article must be labeled with the member's name, county and class number and number items 1 of 2, 2 of 2, etc. This may be done with masking tape, by attaching an index card, or writing directly on the back with a marker. All the articles that comprise the exhibit must be attached to each other or contained in a zip-closure bag. To qualify for judging an *Electric Energy Explanation Sheet* (862-02 Revised 9/2016) must be attached to the exhibit. Forms are available at the County Extension Offices and at the State 4-H website.
2. **In addition, intermediates and seniors must include a schematic or circuit diagram of the electricity project.** Refer to the 4-H Electric Series Level 2 book [Investigating Electricity](#) and the interactive e-learning modules for Activities 5 and 6 and Activities 7-9. The Level 4 book [Entering Electronics](#) will also be a useful reference for this requirement.
3. The exhibit may be a poster or a three-dimensional display. Individual exhibits are **limited in size to 30" wide, 24" deep (front to back), and 36" high. Club exhibits are limited in size to 60" wide, 24" deep and 36" high.**
4. **Education Posters:** The exhibit may be a poster or a three-panel two-fold display board. Posters may not exceed

22"x26". Individual exhibits are limited in size to 30" wide, 24" deep (front to back), and 36" high. Club exhibits are limited in size to 60" wide, 24" deep and 36" high. An Educational Display Explanation Card (000-01) must be attached. Judging criteria are outlined on 4-H Educational Display Check Sheet (40-463). Both these documents are available at the county Extension Office or on the state 4-H website under Communications

Note: Fill in blank in class number (___) with one of the following numbers for level.

- 11 Junior**, First year in this project area
21 Other Junior
12 Intermediate, First year in this project area
22 Other Intermediate
13 Senior, First year in this project area
23 Other Senior
34 Club Exhibit

862 100 1 ___ Electricity, Level 1: An exhibit on any electricity topic youth learned about in Electric Excitement Level 1 Magic of Electricity addressing any of these themes: workings of an incandescent light bulb, workings of a switch, conductors, insulators, open/closed circuits, series or parallel circuit design, magnesium, workings of a compass, use of a galvanometer, workings of a motor.

862 100 2 ___ Electricity, Level 2: An exhibit on any electricity topic youth learned about in Electric Excitement Level 2 Investigating Electricity addressing any of these themes: direct and alternating current, workings of a Volt-Ohm meter, Ohm's Law, conductors, insulators, wiring diagrams, measuring voltage, circuits, momentary switches, three-way switches, soldering, "build a burglar alarm."

862 100 3 ___ Electricity, Level 3: An exhibit on any electricity topic youth learned about in Electric Excitement Level 3 Wired for Power addressing any of these themes: electrical tools, electrical meter, identify wire and cable symbols, light bulbs, appliance nameplate information, electricity usage, receptacles, circuits, grounded and non-grounded outlets, an explanation of wall switch replacement.

862 100 4 ___ Electricity, Level 4: An exhibit on any electricity topic youth learned about in Electric Excitement Level 4 Entering Electronics addressing any of these themes: identification of electronic parts, soldering and preparing a circuit assembly, demonstrate how a diode controls current flow, develop a circuit that shows the action of a transistor to regulate current flow, understand polarity and voltage limits of LEDs, use of a light sensitive semiconductor, assemble a circuit that gives a meter reading in response to light, show how a Silicon Controlled Rectifier (SCR) triggers an alarm, use an integrated circuit in an amplifier circuit.

862 101 1 ___ Education Poster - Electricity, Level 1: An educational poster on any electricity topic youth learned about in Electric Excitement Level 1 Magic of Electricity addressing any of these themes: workings of an incandescent light bulb, workings of a switch, conductors, insulators, open/closed circuits, series or parallel circuit design, magnesium, workings of a compass, use of a galvanometer, workings of a motor.

862 101 2 ___ Education Poster - Electricity, Level 2: An educational poster on any electricity topic youth learned about in Electric Excitement Level 2 Investigating Electricity addressing any of these themes: direct and alternating current, workings of a Volt-Ohm meter, Ohm's Law, conductors, insulators, wiring diagrams, measuring voltage, circuits, momentary switches, three-way switches, soldering, "build a burglar alarm."