

SET ELECTRICITY (DEPARTMENT H)

Each 4-H/FFA exhibitor may enter up to 3 **different** items in each class.

GENERAL INFORMATION - The name and county of each exhibitor should appear separately on the back of each board, poster or article and on the front cover of the notebooks so owner of exhibit may be identified if the entry tag is separated from the exhibit.

Several classes require a display board which should be a height of 24 inches and not to exceed 1/4" in thickness. A height of 23 7/8" is acceptable to allow for the saw kerf (width) if two 24 inch boards are cut from one end of a 4'X8' sheet of plywood. Nothing should be mounted within 3/4" of the top or bottom of the board. (Example: Woodworking & Electricity.) Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays. Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.

Demonstration boards should include an overall title for the display, plus other necessary labeling.

All reports should be clearly written or typed and enclosed in a clear, plastic cover. The reports should be attached securely to the display.

ELECTRICITY - DIVISION 870

MAGIC OF ELECTRICITY - UNIT 1

Class:

920. Bright Lights - Create your own flashlight using items found around your house. Flashlights should be made out of items that could be recycled or reused. No kits please.

921. Control the Flow - Make a switch. Use the following items: D cell battery, battery holder, insulated wire, 2- or 2.5-volt light bulb, bulb holder, paper clip, cardboard, and two brass paper fasteners to create a circuit that you can open and close.

922. Conduction Things - Make a circuit with a switch and a light bulb that can be used to test different household items for their ability to act as an insulator or conductor. You must find five items that are conductors and five items that are insulators. Create a table that illustrates your results.

923. Is There a Fork in the Road - Use the following items to construct one parallel and one series circuit. Items: D cell battery, battery holder, insulated wire, bulb holder and a 2- or 2.5-volt light bulb.

INVESTIGATING ELECTRICITY - UNIT 2

Class:

924. Case of the Switching Circuit - Use the following items: two D cell batteries, two battery holders, light bulb, bulb holder, a 3" by 6" piece of cardboard, six brass paper fasteners and approx. two feet of 24 gauge insulated wire to build a three-way switch. Write a short essay or create a poster that illustrates how three-way switches function.

926. Stop the Crime - Build an ALARM using the following materials: On-off push button switch, mercury switch, buzzer-vibrating or piezoelectric, 9-volt battery, 9-volt battery holder, 4" by 4" by 1/8" Plexiglas board to mount circuit on, rosin core solder, soldering gun/iron, two feet of 22 gauge wire, wire strippers, hot glue sticks, hot glue gun and a plastic box with a lid to mount your alarm circuit on. Create a poster using photographs to show the "step by step process" you used to build your alarm.

ELECTRICITY - WIRED FOR POWER - UNIT 3

Class:

1. *ELECTRICAL TOOL/SUPPLY KIT - Create an electrical supply kit to be used for basic electrical repair around the house. Include a brief description of each item and its use. Container should be appropriate to hold items.

2. *LIGHTING COMPARISON - Display studying the efficiency of various lighting (incandescent, fluorescent, halogen, Light Emitting Diodes, etc.). Exhibit could be a poster display or an actual item.

3. *ELECTRICAL DISPLAY/ITEM - Show an application of one of the concepts learned in the Wired for Power project.

Examples include: re-wiring or building a lamp, re-wiring or making a heavy duty extension cord or developing an electrical diagram of a house. Exhibit could be a poster display, or an actual item.

4. *POSTER - Poster should exemplify one of the lessons learned in the Wired for Power Project. Posters can be any size up to 28" by 22".

ELECTRONICS - UNIT 4

Class:

5. *ELECTRICAL/ELECTRONIC PART IDENTIFICATION - Display different parts used for electrical/electronic work.

Exhibit should show the part (either picture or actual item) and give a brief description, including symbol of each part and its function. Display should include a minimum of 10 different parts.

6. *ELECTRONIC DISPLAY - Show an application of one of the concepts learned in the Electronics project. Examples include: components of an electronic device (refer to p. 35 of the Entering Electronic manual).

7. *ELECTRONIC PROJECT - Exhibit an electronic item designed by the 4-H'er or from a manufactured kit that shows the

electronic expertise of the 4-H'er. Examples include: a radio, a computer, or a voltmeter.

8. *POSTER - Poster should exemplify one of the lessons learned in the Entering Electronics Project. Posters can be any size up to 28" by 22".