

## **Electricity** **Division 870**

Pay Category 6

**General Information:** Please put number of years in electrical project on entry card.

**Electric Posters** - 4 -H electricity related posters are to be entered in the engineering area for exhibiting and judging. Refer to posters for general requirements.

### **Unit 1**

901.\* **Electrical Safety Poster** - Must deal with a specific topic. Examples are, "Overhead Power Line Safety," "Electrical Safety in the Home," "On The Farm Safety."

902.\* **Bright Lights** - Create your own flash light using items found around your house. Flash lights should be made out of items that could be recycled or reused. No kits.

903.\* **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 you can open and close.

904.\* **Conducting 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.

905.\* **There is a Fork in the Road** - Use the following items to construct one parallel and one series circuit. D cell battery, battery holder, insulated wire, bulb holder and a 2 or 2.5 volt light bulb.

### **Unit 2**

906.\* **Case of the Switching Circuit** - Use the following items: two D cell batteries, two battery holders, light bulb, bulb holder, 3"x6" piece of cardboard, six brass paper fasteners and about two feet of 24 gauge insulated wire to build a three way switch. Write a short essay or create a poster illustrating how a three way switch functions.

907.\* **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"x4"x1/8" plexi glass 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.

### **Unit 3**

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 may be a poster display or an actual item.
4. **Poster** - any size up to 22"x28", should exemplify one of the lessons learned in the Wired for Power Project.

#### **Unit 4**

5. **Electrical/Electronic Part Identification** - Display different parts used for electrical/electronics work. Exhibit should show the part (either picture or actual item) and give a brief description, including symbol of each part and its function. Must have 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 manual)
7. **Electronic Project** - Exhibit an electronic item you designed or made from a manufactured kit showing your electronic expertise. Examples include: a radio, computer or a volt meter.
8. **Poster** - any size up to 22"x28" - should exemplify one of the lessons learned in the Entering Electronics Project.