



ELECTRONICS MERIT BADGE WORKSHEET (BYU/UVSC PowWow)

Scout's Name

Instructor's Name

Scout's Address

City

State

Zip

The Scout is to review the merit badge book before the first week and bring to class this worksheet, paper, pencil or pen, and any other items asked for.

Instructions

- 1) The Scout is to review the merit badge book before the first week of the PowWow.
- 2) Bring this worksheet, paper, and pencil or pen each week.

Requirement Instructions

- 1) Requirement 1 should be completed **before** the PowWow and ready to pass of by the first session.
- 2) Requirement 2 will be completed at the **first** session of the PowWow.
- 3) Requirement 3 will be completed at the **second** session of the PowWow.
- 4) Requirement 4a or b or c should be completed as **homework** between the two sessions of PowWow.
- 5) Requirement 5 will be completed at the **second** session of the PowWow.
- 6) Requirement 6 should be completed **before** the PowWow and ready to pass of by the first session.

Requirement 1

Initial

Describe the safety precautions you must exercise when using, building, altering, or repairing electronic devices:

Requirement 2

Initial

In the area below draw a simple schematic diagram. It must show resistors, capacitors, and transistors or integrated circuits. Use the correct symbols. Label all parts.

List the main parts you used and give the use or purpose of each:

Part: Purpose:

Part: Purpose:

Part: Purpose:

Part: Purpose:

Part: Purpose:

Part: Purpose:

Part: Purpose:

Requirement 3

Initial

Demonstrate to your counselor the correct way to solder. Briefly explain/describe the process:

Demonstrate to your counselor the correct way to desolder. Briefly explain/describe the process:

Tell how to avoid heat damage to electrical components:

Tell about the function of a printed circuit board:

Tell what precautions should be observed when soldering printed circuit boards:

Requirement 4

Initial

Discuss each of the following options with your merit badge counselor. Then choose ONE of the following and build a circuit to show the techniques used.

Option 1:

Tell how you can use electronics for a control purpose:

Build a control device circuit. Describe the circuit that you built:

Option 2:

Tell about the basic principles of digital techniques:

Build a digital circuit. Describe the circuit that you built:

Tell how you would change three decimal numbers into binary numbers:

Tell how you would change three binary numbers into decimal numbers:

Option 3:

Tell about three audio applications of electronics:

Application 1:

Application 2:

Application 3:

Build an audio circuit. Describe the circuit that you built:

After completing one of the above options, do the following:

Tell how to read the schematic diagram of the project you choose. Give a brief explanation:

To the best of your ability, explain how the circuit you built operates:

Requirement 5

Initial

Tell how to solve a simple problem involving current, voltage, and resistance using Ohm's law:

Tell about the need for and the use of test equipment in electronics:

Name three types of test equipment and tell how each operates:

Name:

Operation:

