

ELECTRONIC PARTS AND SYMBOLS

Objectives

- Help the scout complete the following merit badge requirements:
 - 6.a. Explain the difference between a block diagram and a schematic diagram.
 - 6.b. Draw a block diagram that includes a transceiver, amplifier, microphone, antenna and feedline.
 - 6.c. Explain the differences between an open, a closed, and a short circuit.
 - 6.d. Draw eight schematic symbols for electrical parts.
 - 6.e. Explain what three of the electrical parts do.
 - 6.f. Find three electrical parts to match three of the schematic symbols.

Reference Materials

- Handouts: Block and Schematic Diagrams
Schematic Symbols for Electronic Parts
- Merit badge pamphlet pages: 20-29.
- Demonstration board with jumper wires, batteries and spare fuses.
- Box of mixed electronic parts and boards with electronic parts on them.
- 8.5 X 11 blank paper for scouts to use.

Suggested Activities

- Use the block diagram Block and Schematic Diagrams handout to illustrate both types of diagrams.
- Use the test board to demonstrate:

Open circuit, closed circuit and short circuit.

A resistor reduces the amount of current (electricity) flowing in a circuit.

A diode only passes current in one direction.

A capacitor will not pass DC current (or low frequency AC).

Ask the questions posed on the board.

The difference between AC and DC current.

- Use the Schematic Symbols for Electronic Parts handout along with the box of parts and the parts on the boards to identify some of the parts and the corresponding symbols.
- Page through pages 20-29 from Radio Merit Badge pamphlet with the scouts and answer any questions the scouts have.

Verifying Scouts Have Met the Merit Badge Requirements

- Meet with each scout individually so they can present to you the information required to fulfill each of the above merit badge requirements.
- Sign the scout's record sheet in the spaces provided to indicate scout has fulfilled those requirements.
- If the scout is not able to meet any requirement, have them review the handout and referenced pages in the merit badge pamphlet and come back later to complete the requirement. Provide additional one-on-one mentoring if needed.