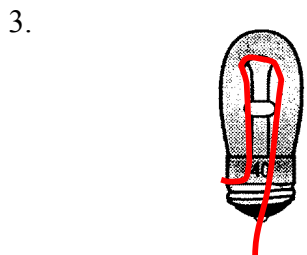
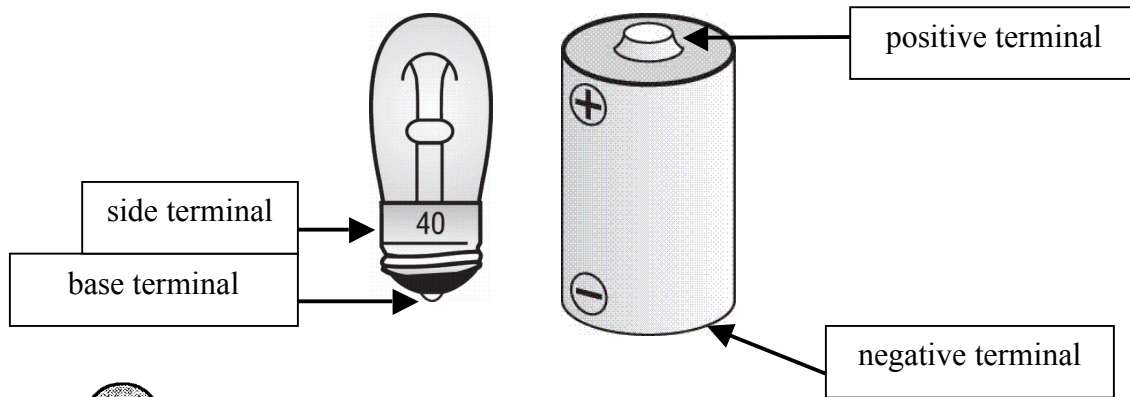


Answer Key to Quizzes and the Unit Test

The purpose of the quizzes is to provide the teacher with a method for a short, easy to correct assessment of student understanding of unit content. Each quiz follows one or more related activities in the *Electrical Circuits* Unit. The correct answers are found below.

**Quiz #1**

1. Answers vary. For example, do not experiment with house current, etc.
- 2.



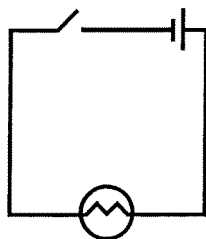
4. The circuit does not connect both terminals of the bulb and both terminals of the battery.
5. The bulb may be burned out, or the battery may be dead.

**Quiz #2**

1. The switch turns a circuit on and off and/or conserves the batteries in a circuit.
2. B
3. C
4. D
5. Answers vary but may include the terminals of the bulb and battery are not connected, the bulb is burned out, battery is dead, battery terminals are not connected properly ("+" to "-")
6. The battery terminals are connected positive to negative.

**Quiz #3**

1. 4
2. Circuit A
- 3.



**Quiz #3, cont.**

4. Parallel circuits because circuits can be turned on and off in the house individually. Also, if a light burns out in the house, all the other lights in the house will remain on. If the house was wired in series, the lights would all go on and off at the same time. If a light burned out in the house, all the other lights in the house would go out.
5. Bulb #2 will go out.
6. Bulb #4 will stay lit.
7. A

**Quiz #4**

1. D
2. D
3. A
4. C
5. Answers vary. For example, the gloves could be made out of a heavy cloth and rubber. The item(s) chosen should be an insulator. Insulators do not conduct electricity.
- 6.

	Conductor or Insulator?
a plastic bottle	insulator
copper wire	conductor
an eraser	insulator
a crayon	insulator
steel nail	conductor
aluminum foil	conductor

**Quiz #5**

1. A
2. C
3. D
4. This highly resistant wire heats up when electrical current goes through it.
5. chemical
6. light and heat
7. In the model heater, the chemical energy from the battery is transformed or changed to electrical energy. The electrical energy flows through the wires. When the electrical current flows through the Nichrome wire, the Nichrome wire gives off heat and light. The electrical energy is then transformed into heat and light energy

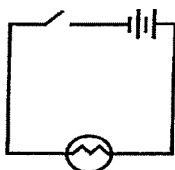
## Electrical Circuits Answer Key to Quizzes and the Unit Test (cont.)

### Unit Test

The unit test should be administered at the end of the unit. It is comprehensive and contains questions in a variety of formats to assess content mastery. Correct responses are found below.

1. B
2. C
3. D
4. D
5. B
6. A
7. B
8. A
9. In a series circuit, when one bulb goes out, they all go out. It is then difficult to find the one bulb that is no longer working. In a parallel circuit, if one bulb goes out, the other bulbs stay lit. Therefore, you can clearly see the bulb that is no longer working.

10.



11. Chemical energy in the battery is transformed into electrical energy. The electrical energy flows through the wires to the bulb. Then the electrical energy is transformed into heat and light energy in the bulb.
12. Experimenting with house current is dangerous. House current has a much higher voltage than a battery.
13. The two batteries in circuit A have the polarity arranged negative to positive to produce 3 volts of electricity. In circuit B, one battery of the three is reversed so the circuit only has 1.5 volts.
14. Answers vary. Examples: metal paper clip, steel nail, copper
15. Answers vary. Examples: rubber ball, plastic bottle, glass marble

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