**#\_\_\_** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Energy and Electricity** Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_

**Open and Closed Circuits**

1. Each picture shows a battery, light bulb, and wire. Decide whether each bulb will light up and write either YES or NO under each picture.
2. What is a closed circuit?
3. What is an open circuit?

**Circuit Symbols**

4. Draw the symbol for each of the circuit parts.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Wire |  | Resistor |  | Bulb |  |
| Battery |  | Switch |  | Connected Wires |  |

**Series and Parallel Circuits**

5. Under each circuit diagram, circle whether the circuit is SERIES or PARALLEL.

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Circle one:**SERIES** or **PARALLEL** |  | Circle one:**SERIES** or **PARALLEL** | Circle one:**SERIES** or **PARALLEL** |

6. Explain how you can tell the difference between a series circuit and a parallel circuit.

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**Circuit Diagrams**

7. **Draw** and **label** the circuit diagram for this circuit in the box to the right.

 

8. **Draw** and **label** the circuit diagram for this circuit.

 

**Fill in the Blanks:**

9. The part of an atom that moves to create electricity is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

10. The flow of electrons is called electric \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This only happens if there is a complete path with no holes or gaps.

11. The loop of wire that the electrons flow through is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

12. A circuit in which all electrons follow a single pathway is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ circuit.

13. A circuit in which electrons follow multiple pathways is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ circuit.

14. If one light bulb goes out in a series circuit, the other light bulbs will \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_.

15. What are the two things electrical current needs?

 a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Long Answer:**

16. Are household circuits connected in parallel or series? Explain your answer.

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