



# Electricity and Circuits

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Grade: Grade 4

## Part A: Multiple Choice

Circle the best answer for each question.

1. A student tests four materials to see which completes a circuit and lights a bulb. Which material will most likely work?

- A) a wooden stick
- B) a plastic straw
- C) an iron nail
- D) a rubber eraser

2. Three bulbs are connected in parallel to a battery. One bulb is unscrewed. What happens to the other two?

- A) they both go out
- B) they stay on at the same brightness
- C) they get dimmer
- D) the battery stops working

3. Why does a thick copper wire have less resistance than a thin copper wire of the same length?

- A) thick wire weighs more so electrons move faster
- B) thick wire gives electrons more room to flow
- C) thin wire is a better conductor than thick wire
- D) thick wire has fewer electrons inside it

4. A circuit has a battery and a buzzer, but the buzzer does not make a sound. Which change would most likely fix the problem?

- A) add another buzzer in series
- B) replace the copper wire with a string
- C) close the open switch in the circuit
- D) remove the battery from the circuit

## Part B: Fill in the Blank

Write the correct answer on each line.

1. When two batteries are placed in series, the total voltage is the \_\_\_\_\_ of both batteries' voltages.
2. An electric fan converts electrical energy into \_\_\_\_\_ energy that moves air.
3. In a circuit diagram, an X inside a circle is the symbol for a \_\_\_\_\_.
4. Materials like glass, rubber, and \_\_\_\_\_ are common insulators used to protect people from electricity.
5. Adding more devices in a series circuit increases the total resistance and decreases the \_\_\_\_\_.

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- D) remove the battery from the circuit

**Part B: Fill in the Blank**

Write the correct answer on each line.

1. When two batteries are placed in series, the total voltage is the sum of both batteries' voltages.
2. An electric fan converts electrical energy into mechanical energy that moves air.
3. In a circuit diagram, an X inside a circle is the symbol for a bulb.
4. Materials like glass, rubber, and plastic are common insulators used to protect people from electricity.
5. Adding more devices in a series circuit increases the total resistance and decreases the current.