

Backstage Light Path

Trace how a flashlight circuit lets current flow.

5.4.b “electricity flows through closed circuits;”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each sentence that tells what makes current flow or stop flowing, then circle the words that name a complete path or a gap.

Maya Tests a Flashlight

- ① Before the school play, Maya tests a small flashlight used backstage. Inside the flashlight, a battery provides electrical energy. Metal parts connect the battery to a bulb. When the switch is pushed to ON, it joins two metal contacts. This makes one complete path from the battery, through the bulb, and back to the battery. The bulb glows.
- ② A closed circuit is a complete, unbroken loop. Electric current can move through its conducting materials, including wires and the bulb's metal parts. The current carries energy to the bulb, causing its filament to heat up and give off light. The switch is part of the loop. It can either complete the path or create a gap in it.
- ③ If Maya slides the switch to OFF, the contacts separate. The path has a gap, so the circuit is open and current does not flow through the bulb. The bulb goes dark. A loose wire can create another gap. A battery that no longer supplies energy can also stop the flashlight. For the bulb to light, the loop must be complete and the battery must supply energy.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 When Maya pushes the switch to ON, what happens to the metal contacts, and what kind of path does this make?

2 Why does the bulb give off light when current flows through it?

3 Explain why the bulb goes dark when Maya slides the switch to OFF.

4 Name two problems besides turning the switch OFF that could stop the flashlight from working.

3 YOUR TURN _____ Your own words

Draw a flashlight circuit in each panel using a battery, wires, a switch, and a bulb. Make Panel 1 a closed circuit and Panel 2 an open circuit, then write one sentence under each panel explaining whether current flows and why.

PART 1 • READ AND MARK

Underline each sentence that tells what makes current flow or stop flowing, then circle the words that name a complete path or a gap. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	When Maya pushes the switch to ON, what happens to the metal contacts, and what kind of path does this make?	The switch joins the metal contacts. This makes a complete path, or closed circuit.
2	Why does the bulb give off light when current flows through it?	The current carries energy to the bulb, causing its filament to heat up and give off light.
3	Explain why the bulb goes dark when Maya slides the switch to OFF.	The contacts separate and create a gap. The circuit is open, so current does not flow through the bulb.
4	Name two problems besides turning the switch OFF that could stop the flashlight from working.	A loose wire can create a gap, and a battery that no longer supplies energy can stop the flashlight.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: The switch connects the contacts, making a complete loop, so current flows through the bulb.

Panel 2: The switch leaves a gap, making an open circuit, so current does not flow through the bulb.

Accept equivalent wording that identifies a complete, connected loop as a closed circuit and a gap as an open circuit. In the drawings, accept simple symbols or labeled pictures if the closed circuit has an unbroken path and the open circuit has a clear gap.