

The Primary Stage of Grades (4-5) School Year 2022 - 2023

Name: Answer Key

Unit (9): More about electrical circuits
Worksheet (2): Electrical circuits-
Lab Report
Grade 5 CP (All sections)

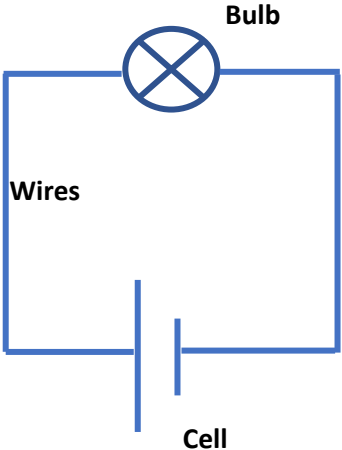
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Objective:

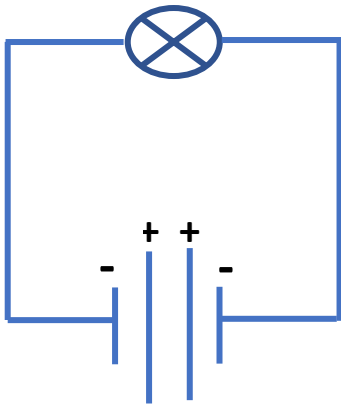
- Construct a simple circuit.
- Change the circuit by adding/ removing components and observe what happens.

Required Materials:

| | |
|----------------|----------|
| - Wires | - Bulbs |
| - Cells | - Switch |
| - Bulb holders | |

| | <u>Procedure</u> | <u>Observation</u> | <u>Draw the circuit in symbols</u> |
|--------|--|----------------------------|--|
| Part 1 | <p>1. Connect the wires with each side of the cell.</p> <p>2. Connect the other ends of the wires into each side of the bulb.</p> <p>3. Observe what happens, record your observation.</p> | <p>The bulb lights up.</p> |  <p>The diagram shows a rectangular circuit loop. At the top is a circle with an 'X' inside, labeled 'Bulb'. At the bottom is a cell symbol (two parallel lines of unequal length), labeled 'Cell'. Two vertical lines on the left and right sides represent 'Wires' connecting the bulb to the cell.</p> |

| | <u>Procedure</u> | <u>Observation</u> | <u>Draw the circuit in symbols</u> |
|-----------|---|--|------------------------------------|
| Part 2 | <p>Add a switch to your circuit. Observe what happens when you open the switch and when you close it. Record your observation.</p> | <p>When we close the switch, the bulb lights up (complete circuit).</p> <p>When we open the switch, the bulb turns off (incomplete circuit).</p> | |
| Part 3 | <p>Now add another cell to your circuit and observe what happens to the bulb. Record your observation.</p> | <p>The bulb lights brighter. (more energy is passing through the circuit).</p> | |
| Part 4 | <p>Now add another bulb to your circuit and observe what happens to the bulb. Record your observation.</p> | <p>The bulbs light dimmer. (The energy is shared between the two bulbs.)</p> | |

| | <u>Procedure</u> | <u>Observation</u> | <u>Draw the circuit in symbols</u> |
|-----------|---|---|---|
| Part 5 | Change the direction of the other cell, with the positive terminal of the first cell facing the positive terminal of the other cell. Does the bulb light up? Record your observation. | The bulb does not light up, since the cells are wrongly arranged. |  |

Conclusion:

- The **basic components** of a simple electrical circuit are:
- 1. Wires.
- 2. A Cell (battery).
- 3. A bulb.

We can add an optional component **a switch to** the circuit, in order to turn the bulb on and off easily.

- If the switch is closed: **the bulb lights up since the circuit is complete.**

- If the switch is open: **The bulb turns off since the circuit is incomplete.**

If there is any gap in the circuit, **the bulb doesn't light up since electrical current flows in a closed loop only.**

Electrical current needs a closed path (complete circuit) in order to pass.