

Introduction

Electricity is a form of energy. It helps us in many ways—lighting bulbs, running fans, TV, fridge, etc. We must know how it flows and how to control it safely using circuits and switches.

3.1 A Torchlight

- A torch has:
- **Electric cells** that provide energy.
- A **bulb** that glows when electricity flows through it.
- **Wires and a switch** to control the flow.
- When the switch is ON, electricity flows from the cell to the bulb, making it glow.

 **Note:** This video uses the **Auto Dubbing** feature.

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3.2 A Simple Electrical Circuit

An electrical circuit is a path through which electricity flows.

3.2.1 Electric Cell

- It has two terminals: **positive (+)** and **negative (–)**.
- The cell provides electricity for small devices like remotes, clocks, etc.

3.2.2 Battery

- A group of electric cells joined together is called a **battery**.
- More cells = more power.
- Example: The batteries in remote-controlled toys or emergency lights.

3.2.3 Electric Lamp

- A device that glows when electric current flows through it.
- The part that glows is called the **filament**.

3.2.4 Making an Electric Lamp Glow Using a Cell or Battery

- Connect wires from the **positive** and **negative** ends of the cell to the two terminals of the lamp.
- If connected correctly, the lamp glows. If not, check connections or the direction of current.

3.2.5 An Electrical Circuit


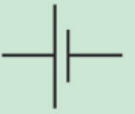



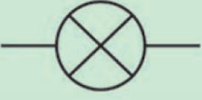

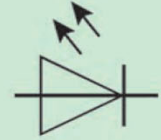
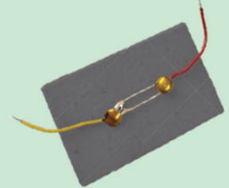

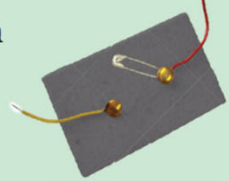



- A **complete path** is needed for current to flow.
- **Open circuit:** When the path is broken — the bulb doesn't glow.
- **Closed circuit:** When the path is complete — the bulb glows.


3.2.6 Electric Switch

- A device used to **open or close** a circuit.
- Switch OFF = open circuit (no flow).
- Switch ON = closed circuit (current flows, bulb glows).

3.3 Circuit Diagrams

- Diagrams that use **symbols** to represent different parts of a circuit.

S.No.	Electrical component	Symbol
1.	Electric cell 	
2.	Battery 	
3.	Electric lamp 	
4.	Light Emitting Diode (LED) 	
5.	Switch in 'ON' position 	
6.	Switch in 'OFF' position 	
7.	Wire 	

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3.4 Electrical Conductors and Insulators

- **Conductors:** Materials that allow electricity to pass through.
 - Examples: Copper, iron, water (with salts), aluminium.
 - **Insulators:** Materials that do not allow electricity to pass.
 - Examples: Rubber, plastic, wood, glass.
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In a Nutshell (Summary)

- Electricity flows through a closed path called a **circuit**.
- A **cell** or **battery** provides the energy.
- A **lamp** glows when the circuit is closed.
- **Switches** control the flow of electricity.
- **Circuit diagrams** use symbols to make understanding easier.
- Materials like **metals** are conductors; **non-metals** like plastic are insulators.