

PHYSICS PROJECT

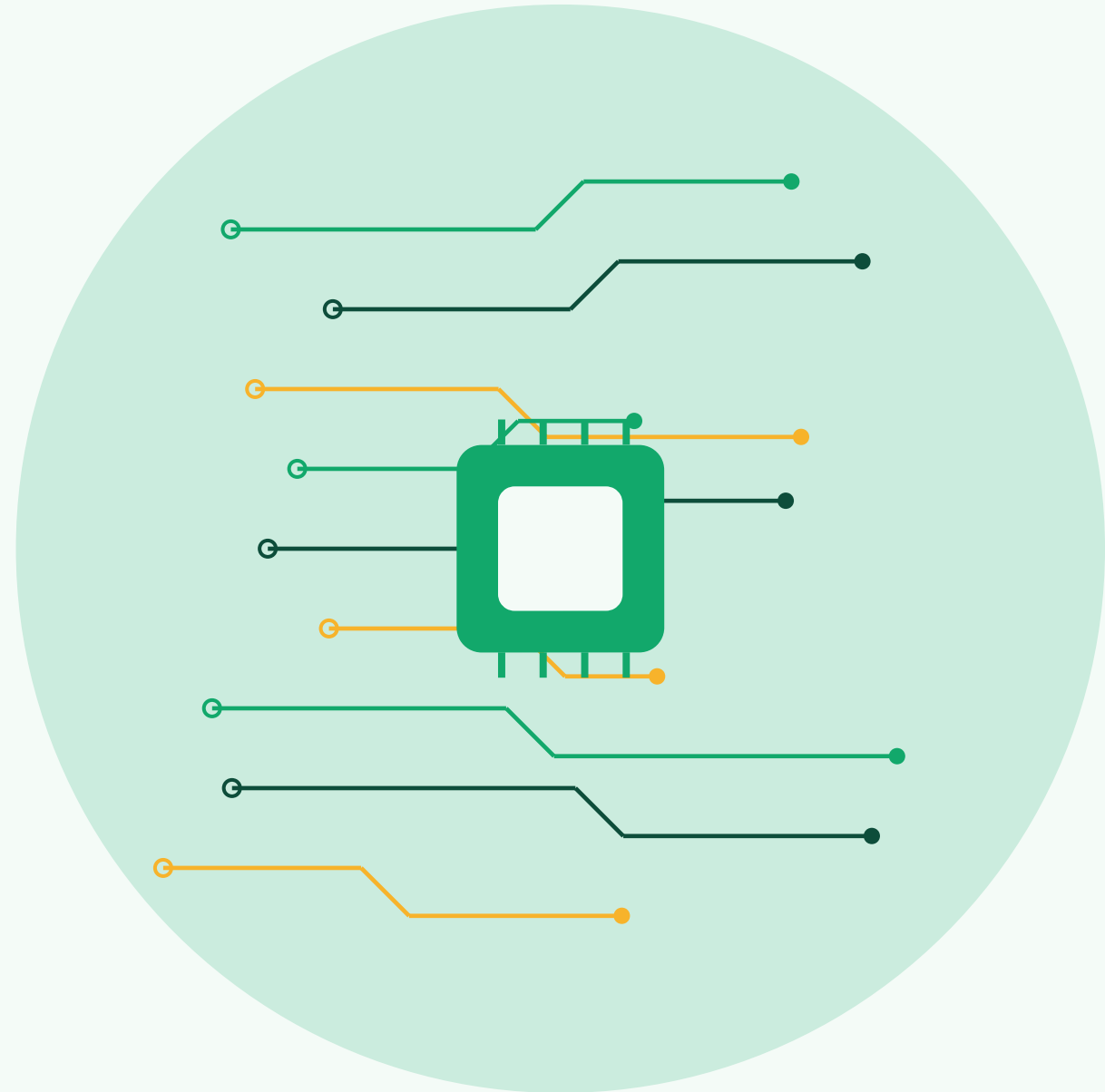
Electricity and Circuits

Current, voltage and resistance made simple

PRESENTED BY
Student Name

SUBJECT
Physics

CLASS / YEAR
Class XI





Agenda

01

Introduction

02

Concepts

03

Experiment

04

Applications

05

Summary



What is electric circuits?

Electricity is the flow of electric charge through a conductor, usually as moving electrons in a wire.

A circuit is a closed path for current. Voltage pushes charge, resistance opposes it, and Ohm's law links them: $V = I \times R$.



Diagram



Key concepts



Current (I)

Flow of charge,
measured in amperes.



Voltage (V)

Electric push, measured
in volts.



Resistance (R)

Opposition to current, in
ohms.



Experiment

- Connect a cell, switch and bulb with wires
- Close the switch and observe
- Add a second bulb in series, then in parallel
- Compare brightness

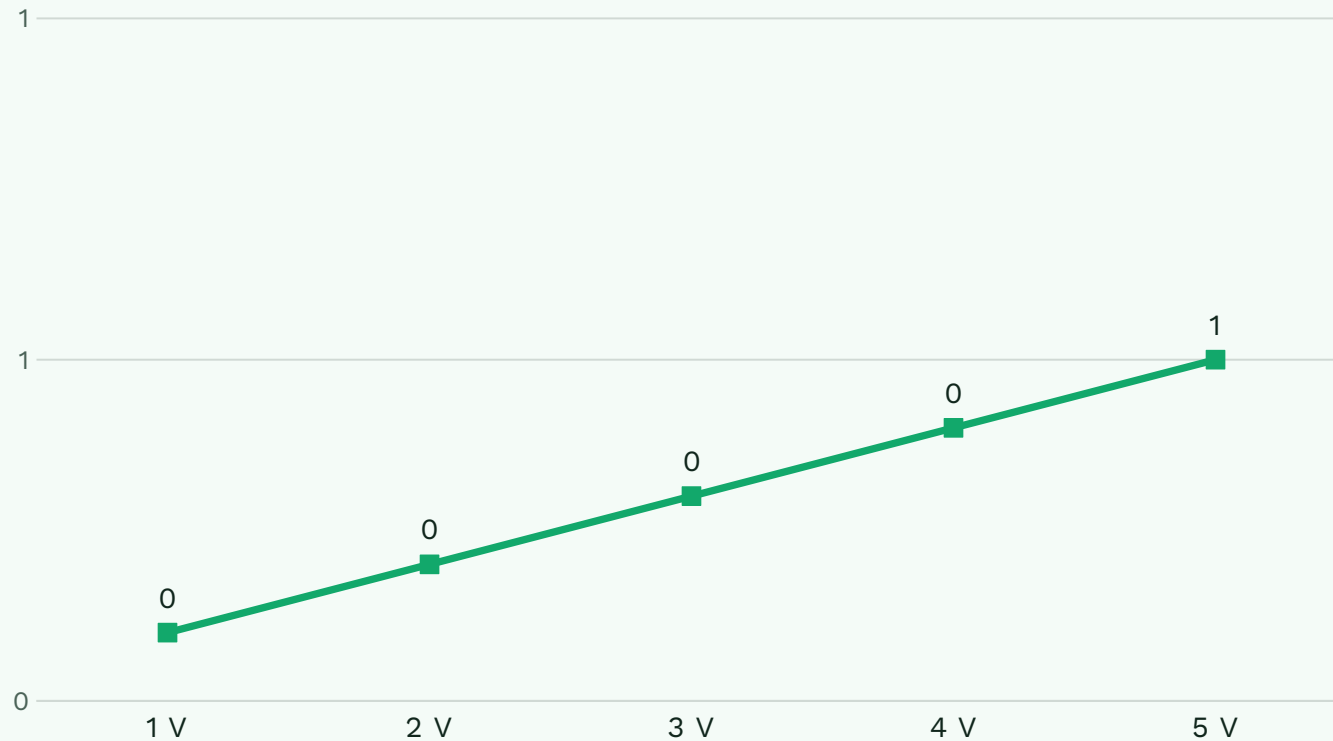
SAFETY

Use low-voltage cells only; never touch mains wiring.



Current vs voltage (Ohm's law)

For a $10\ \Omega$ resistor (sample data).



Sample data for illustration — replace with your own figures.



Real-world applications



Image 1

Homes

Lighting and appliances



Image 2

Electronics

Phones and computers



Image 3

Transport

Electric vehicles



Quick facts

$$V = IR$$

Ohm's law

1 A

= 1 coulomb per second

230 V

household supply in
India



Summary

- Current needs a closed path
- Voltage drives current
- Resistance limits current
- Series and parallel behave differently



Image

Thank you

Questions?

Student Name • Physics