Lesson Plan: Ohm's Law

This lesson plan includes the objectives, prerequisites, and exclusions of the lesson teaching students how to use the formula $V = RI$ (Ohm's law) to work out the values of the potential difference, current, and resistance in simple circuits.

■ Objectives

Students will be able to:

▸ recall that ohms are the unit of electrical resistance,

▸ use $V = RI$ in all permutations,

▸ state how the current through an ohmic conductor varies with potential difference across it,

▸ state how the current through a filament bulb varies with potential difference across it,

▸ state how the current through a diode varies with potential difference across it,

▸ identify an ohmic conductor from a graph of its current and potential difference characteristics,

▸ state how the resistance of an LDR varies with light incident upon it,

▸ state how the resistance of a thermistor varies with temperature.

■ Prerequisites

Students should already be familiar with:

▸ what electric charge is,

▸ what electric current is,

▸ the units of charge and current,

▸ the circuit symbols for a cell, a battery, a resistor, a bulb, a diode, an LED, an LDR, a thermistor, and a variable resistor.

■ Exclusions

Students will not cover:

- parallel circuits,
- any kind of non-direct current,
- Kirchhoff's laws.