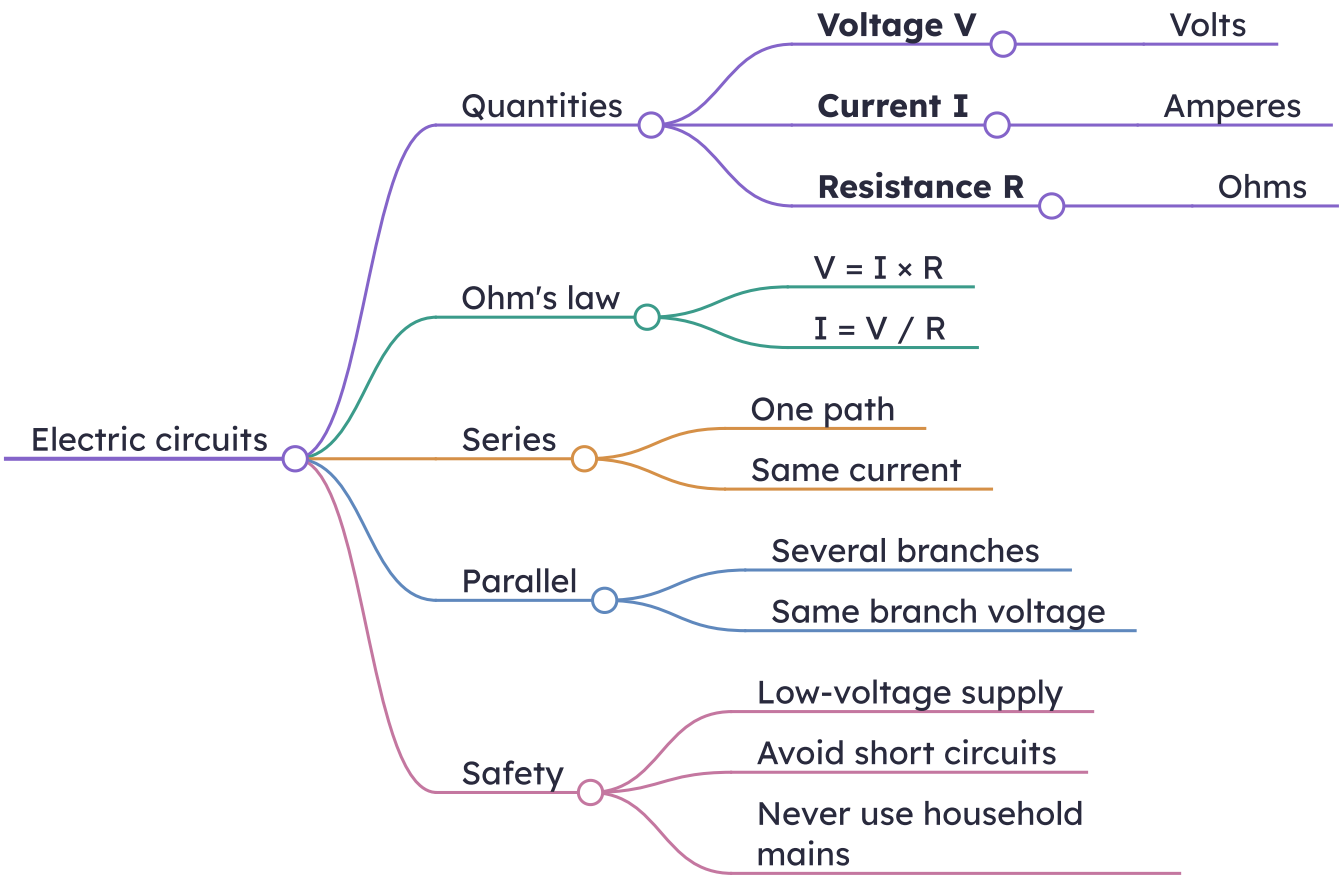
Electric circuits

Distinguish current, voltage, resistance, and circuit arrangement.



Read one branch at a time. Then cover the details and explain them in your own words.

Understand the topic

Current is the rate of charge flow, voltage is potential difference, and resistance relates voltage to current. For an ohmic component under suitable conditions, V = I × R. A series circuit has one current path; a parallel circuit has branches. Practical work should use suitable low-voltage equipment and supervision.

How the map is organized

Pair quantities with units before using the equation. Compare the paths in series and parallel circuits.

> **Watch out for this**
> Current is not used up by a lamp. In a steady series circuit, it is the same at each point.

Try it yourself

Calculate the current through a 6 Ω resistor at 3 V. Sketch two lamps in series and parallel using low-voltage classroom equipment only.

Two questions to answer

What current flows at 3 V through 6 Ω?

I = V/R = 3/6 = 0.5 A.

In a steady series circuit, current is…

Charge does not accumulate at each component in the steady circuit.

Sources

openstax.org
https://openstax.org/books/college-physics-2e/pages/20-2-ohms-law-resistance-and-simple-circuits

Original practice material compiled by Studera.ai. Explore at studera.ai/en/resources/mind-map-examples.