

Simple Circuit and Ohm's Law

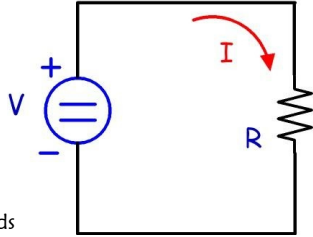
Simple Circuit & Ohm's Law

Objectives

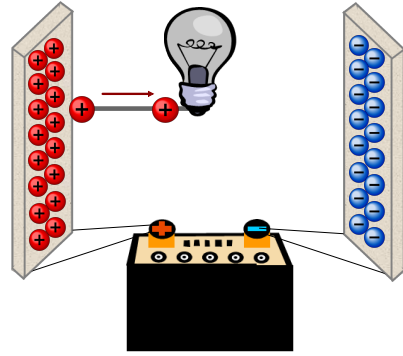
Define and draw a simple circuit.

Define electric current, voltage and resistance and state the metric units.

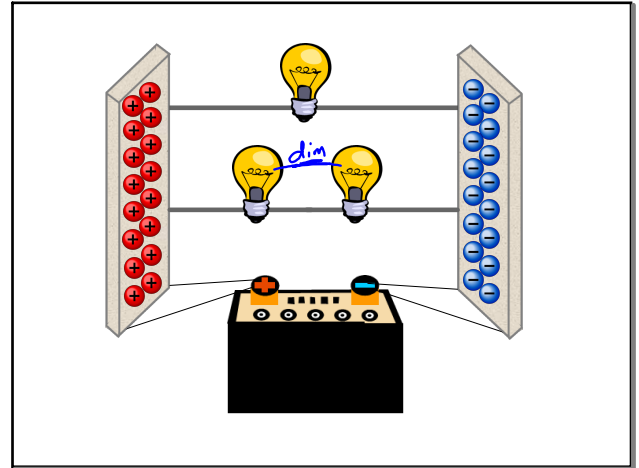
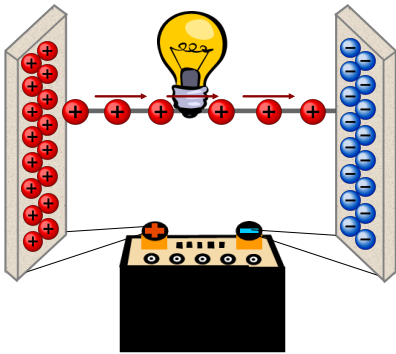
State Ohm's law using words and a formula.



Complete Circuit?



Simple Circuit

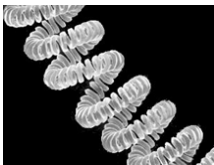


Resistance (R)

measures opposition to flow of charge

Unit: Ohms Ω 12Ω

\uparrow temp - \uparrow R



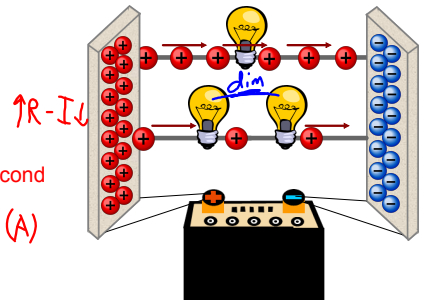
Current (I)

rate.... measurement how much charge per second through a circuit at once.

$$I = \frac{q}{t}$$

Unit: charge/second
or
Amps (A)

$$I_{avg} = \frac{1C}{1sec}$$



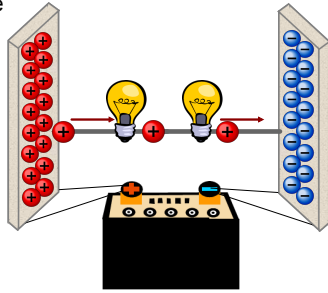
Simple Circuit and Ohms Law

Potential Difference (V)

measures energy/charge
determined by battery

$$V = \frac{PE}{q}$$

Unit: Volts (V)



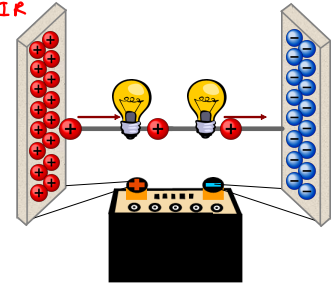
Ohms Law

relationship between electrical current, resistance & voltage

$$I = \frac{V}{R}$$

$$V = IR$$

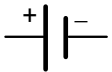
$$\begin{aligned} \uparrow V &- \uparrow I \\ \uparrow R &- \downarrow I \end{aligned}$$



Circuit Schematic Notation

Battery:

12 V



Resistor:

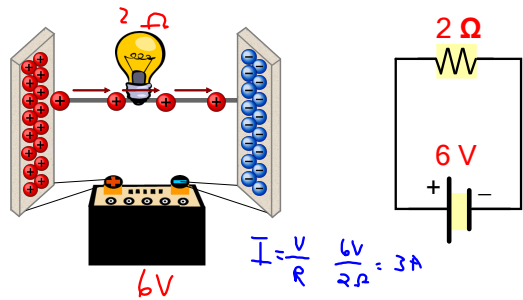
1 Ω



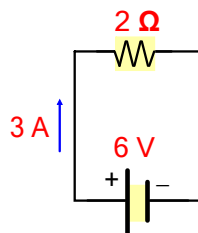
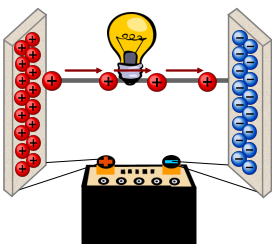
Wire:



Ohms Law



Ohms Law



Assignments . . .



- Begin Chapter 15 Homework #1 - 4

