

Current

Direction of current: opposite direction of the way electrons are flowing.

Formula for current: $I = \frac{\Delta q}{t}$

Symbol: I

Units: A Amps (Ampieres)
 $[A] = [C/s]$

Resistance

Symbol: R

Units: Ω (Ohms)

Potential Difference

Voltage

Symbol: ΔV

Units: V (Volts)

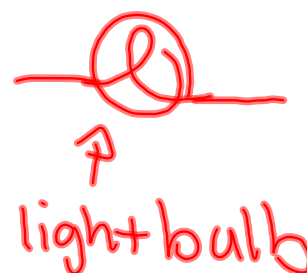
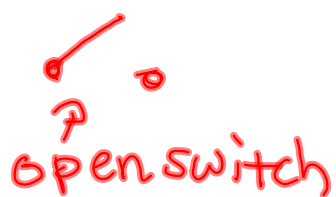
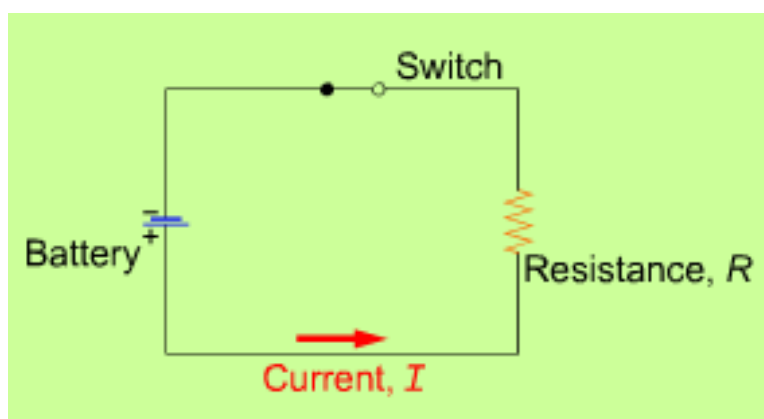
Ohm's Law

$$\Delta V = I R$$

Kirchoff's Loop Rule

ΔV over any closed path
is zero.

Circuit Diagrams

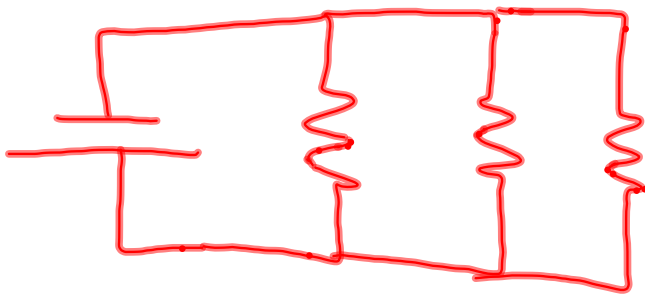


Series Circuits



Series means in a row,
only one path.

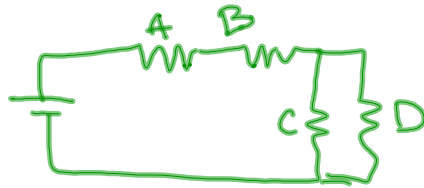
Parallel Circuits



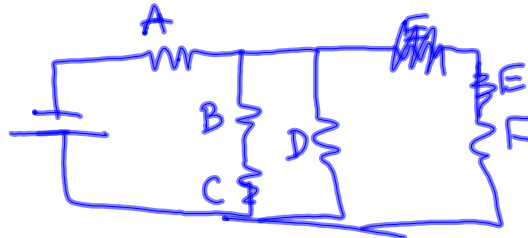
* multiple paths

Equivalent Resistance

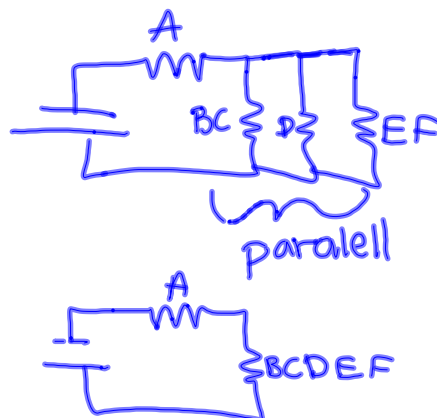
• Grouping Resistors
+ combining their
resistance



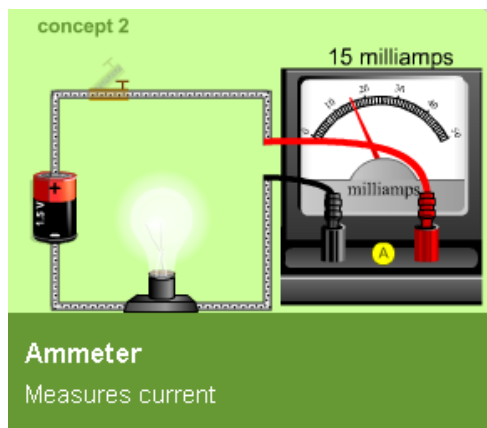
Series: $A + B + CD$
parallel: $C + D$



$B + C$ are in series
 $BC + D, EF$ are in parallel
 $E + F$ are in series



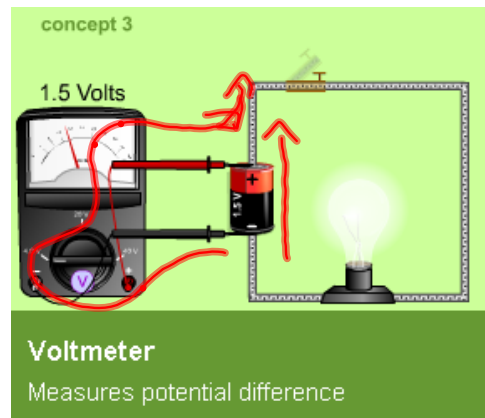
Ammeter



must be
wired in series!!

Voltmeter

xmeasures change
in voltage
across a
device



✗ wired in parallel!

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

current (A) \leftarrow I
charge (C) \leftarrow Δq
time (s) \leftarrow Δt

$$\Delta V = IR$$

Voltage (V) \leftarrow ΔV
potential difference \leftarrow ΔV
resistance (Ω) \leftarrow R
current (A) \leftarrow I