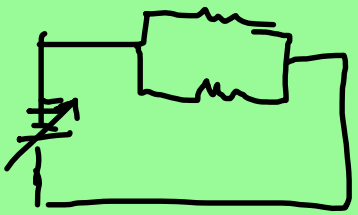
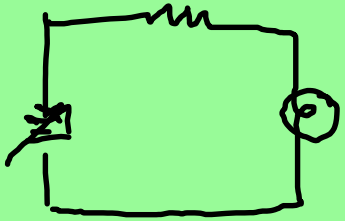


Circuits



1. Power source - provides potential difference
2. Conductor (path)
3. Resistor (load)

may have

4. switch
5. circuit breaker (fuse)

Series

1. 1 path
2. Current measured in amps same throughout
   $I_T = I_{R1} = I_{R2} = I_{R3} \ldots$
3. Voltage splits
   $E_T = E_{R1} + E_{R2} + E_{R3} \ldots$

1 amp = $\frac{1 \text{ coulomb}}{1 \text{ sec}}$

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

6.24×10^{18} e-

Voltage - volts
potential difference
electric pressure
electromotive force
EMF

How do you know?

All same brightness
1 goes out all go out

4. Add resistor total R goes up

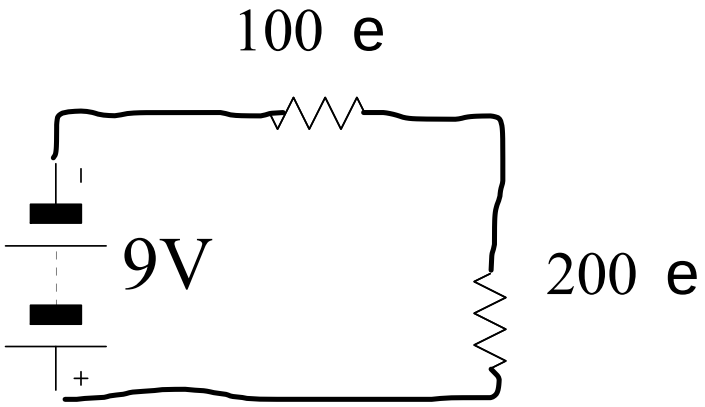
Using Ohm's Law Series

Rt
R1
R2
R3

It
IR1
IR2
IR3

ET
ER1
ER2
ER3

PT



Rt
R1
R2
R3

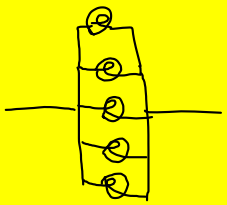
It
IR1
IR2
IR3

ET
ER1
ER2
ER3

PT

Parallel

1. 2 or more paths
2. current splits
   $I_T = I_{R1} + I_{R2} + I_{R3} \ldots$
   * current always takes the path of least resistance
3. Voltage stays the same



How do you know?

brightness the same

pull 1 out the others get brighter

4. add resistor total R always goes down

Ohm's Law / Watt's Law

I, R, E

P

$E = IR$

$P = IE$

http://www.sites4teachers.com/links/redirect.php?url=http://school.discovery.com/teachingtools/worksheetgenerator/archive/953838399.html

Rt
R1
R2
R3
It

IR1
IR2
IR3

ET
ER1

ER2
ER3

PT