

Electricity Visual Vocabulary

Grade 7

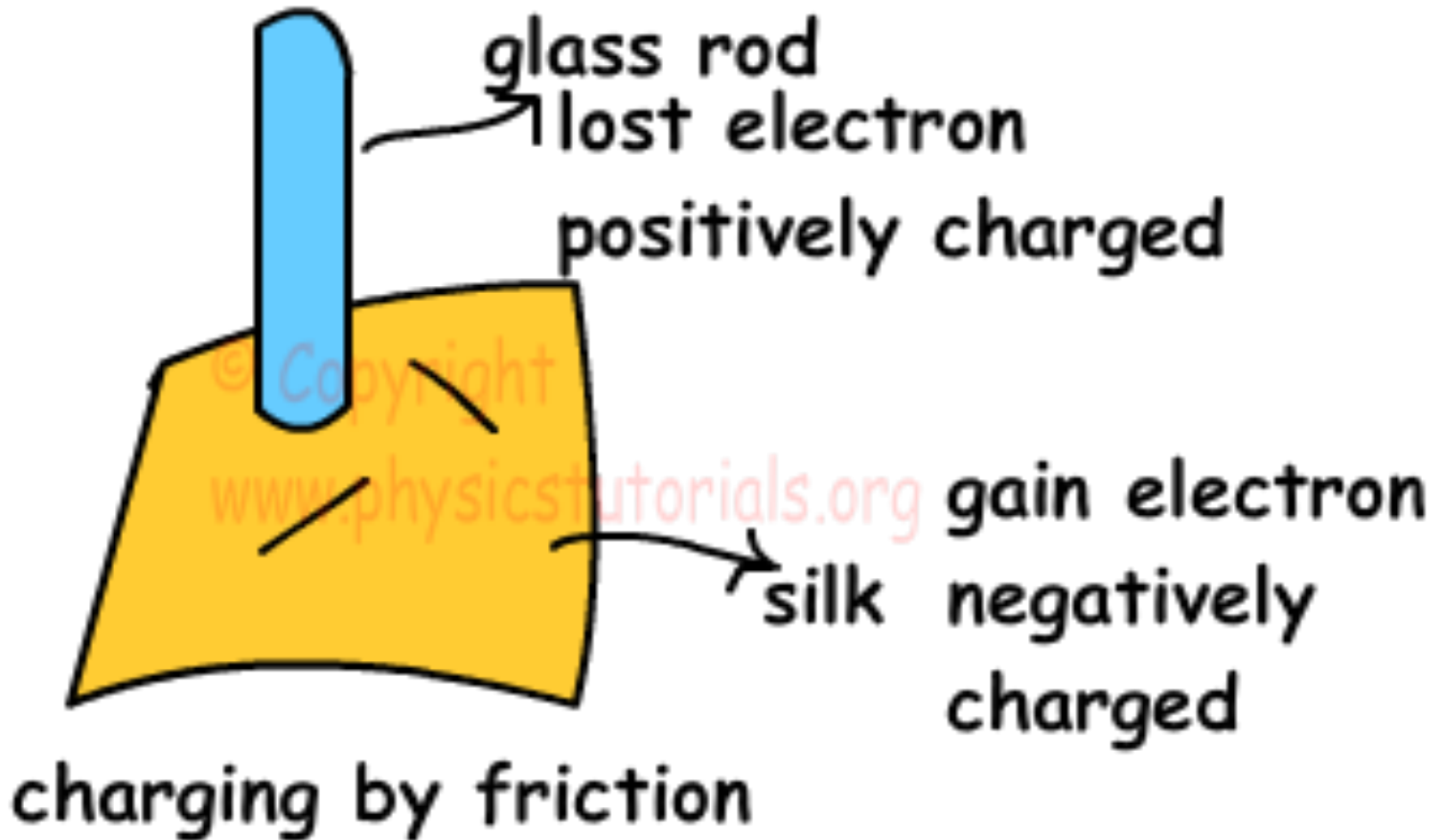


STATIC ELECTRICITY

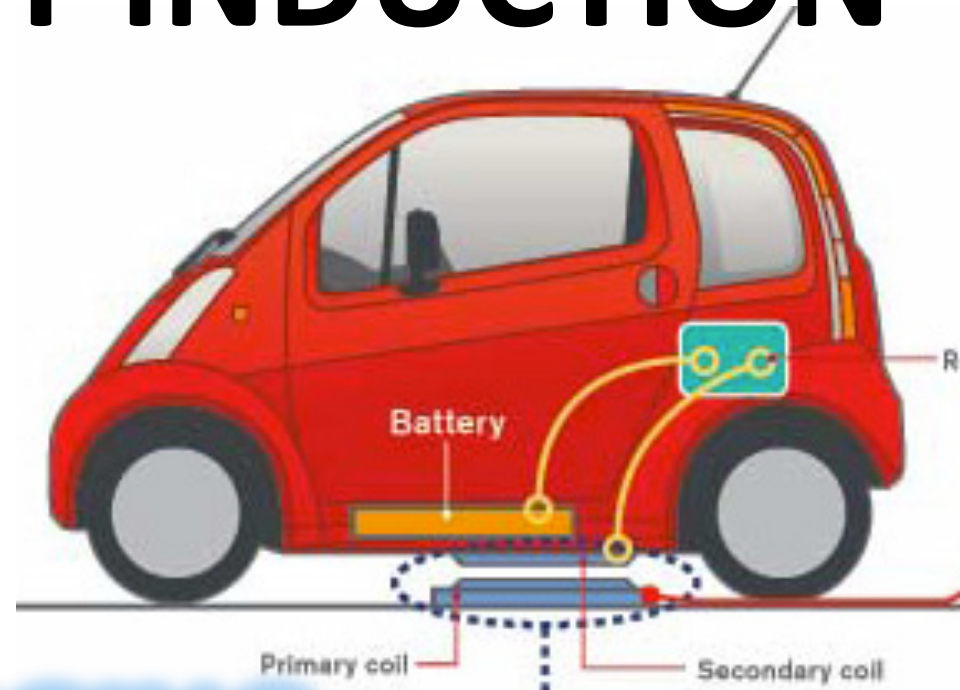
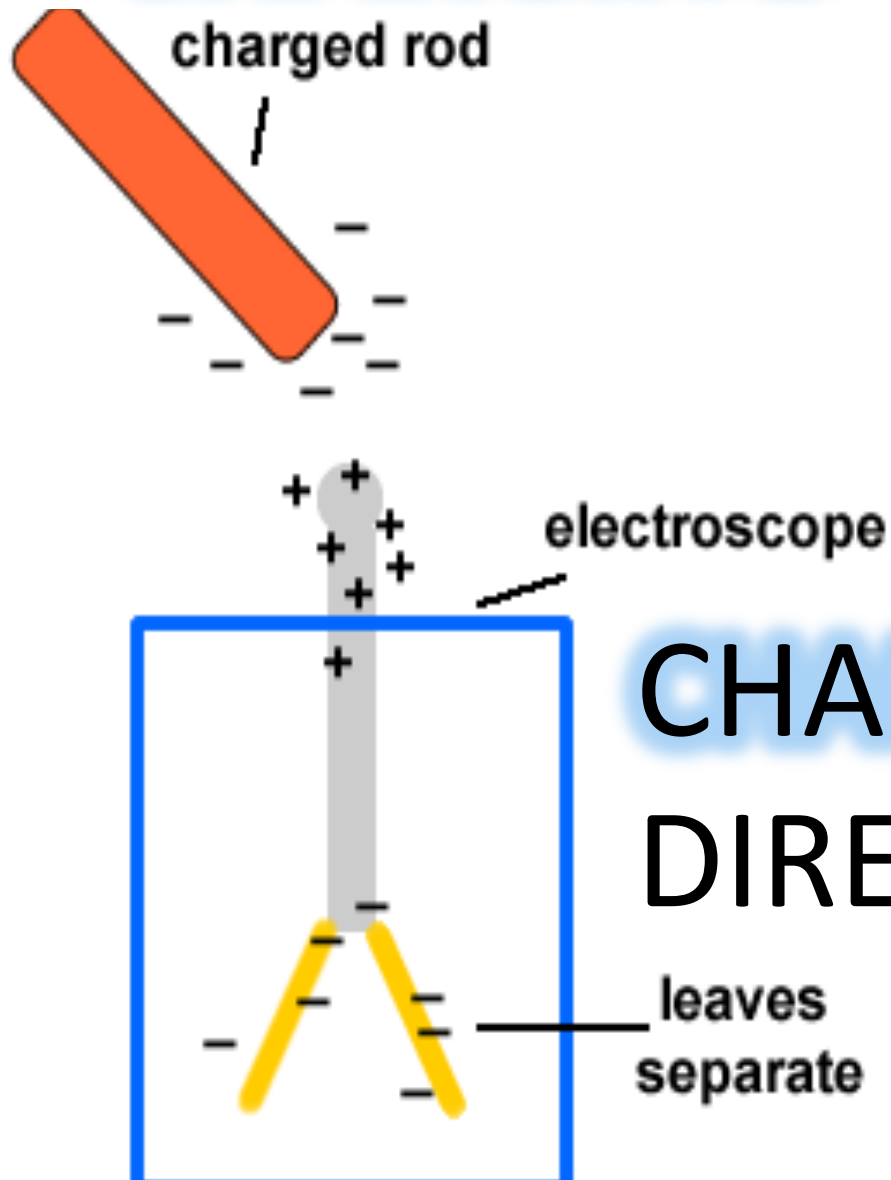
"Yeah, really funny... rub me on the carpet and then put me in the shipping box... You will pay for this!"

WHEN **ELECTRIC CHARGES** BUILD UP ON
AN OBJECT

CHARGING BY FRICTION



CHARGING BY INDUCTION



CHARGING WITHOUT DIRECT CONTACT

CHARGING BY CONDUCTION



CHARGING BY DIRECT CONTACT

LAW OF CONSERVATION OF CHARGE



CHARGE CAN NOT BE
CREATED OR
DESTROYED; ONLY
TRANSFERRED
BETWEEN OBJECTS





REPULSION



ATTRACTION



Repel



Attract

**OPPOSITE
CHARGES
ATTRACT**

**LIKE
CHARGES
REPEL**

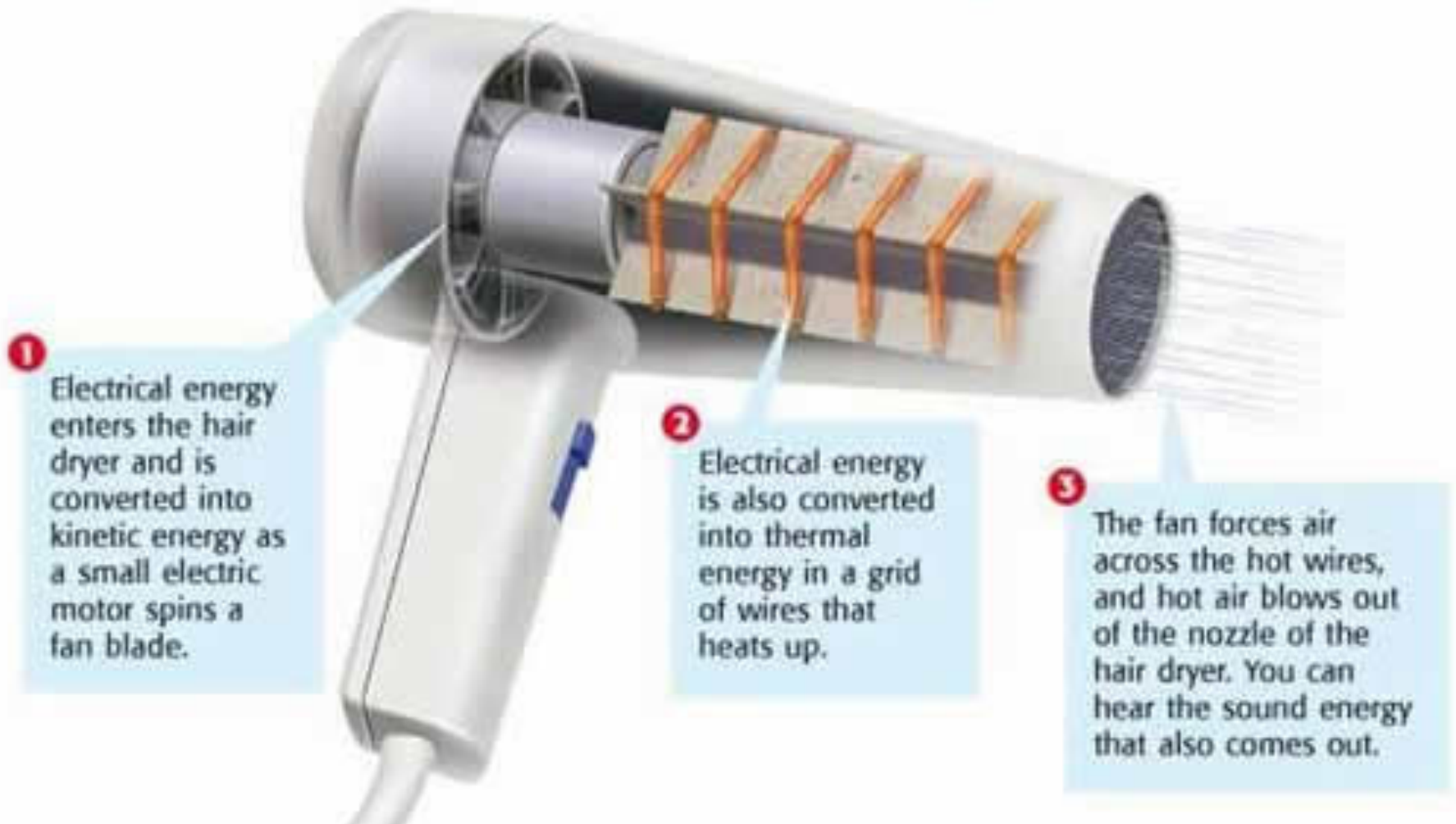
DISCHARGE



*STATIC CHARGE BUILDS UP IN OBJECTS, BUT IT CAN'T STAY THERE FOREVER

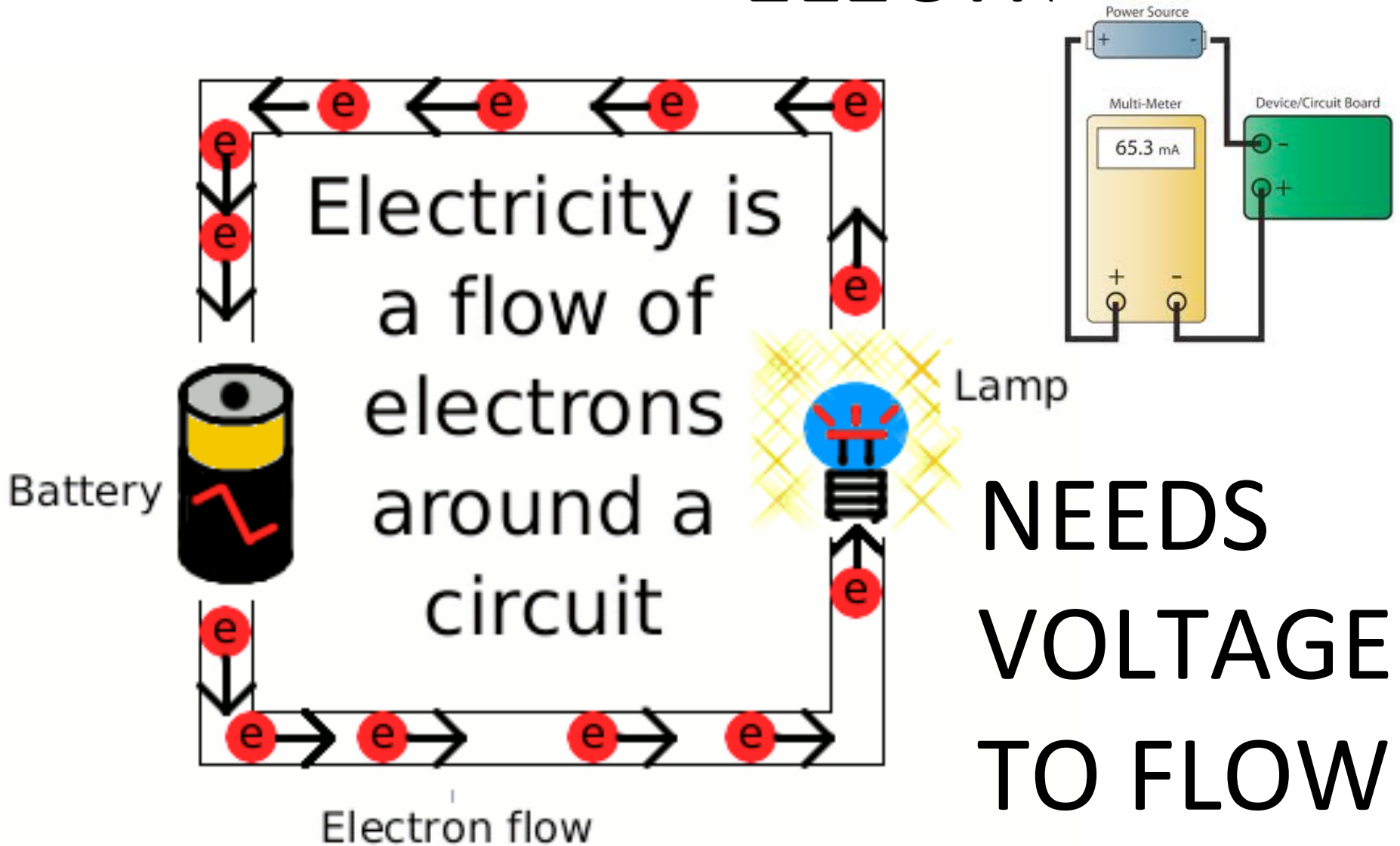
*DISCHARGE IS WHEN THE BUILT UP CHARGE ESCAPES FROM AN OBJECT

ENERGY TRANSFORMATION



CURRENT

FLOW OF ELECTRONS



VOLTAGE

* DIFFERENCE
IN ELECTRICAL

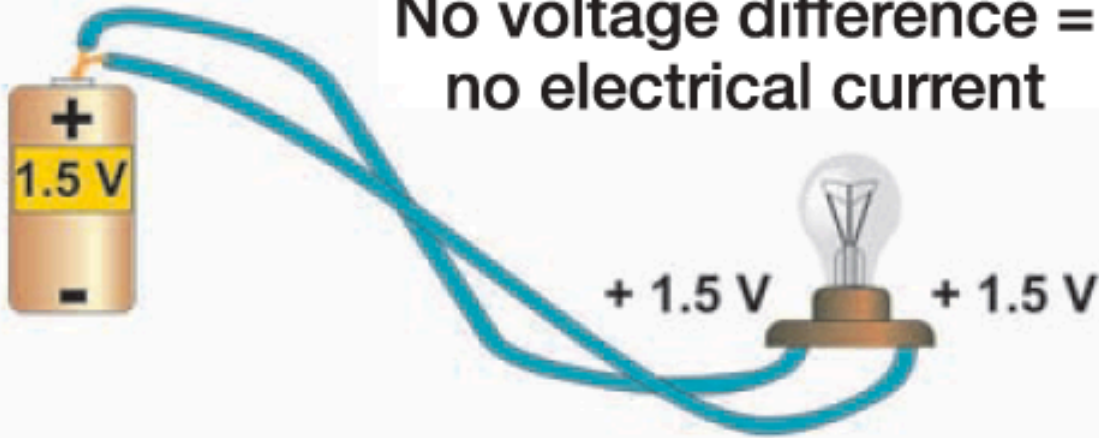
POTENTIAL
ENERGY;

* MAKES
CURRENT

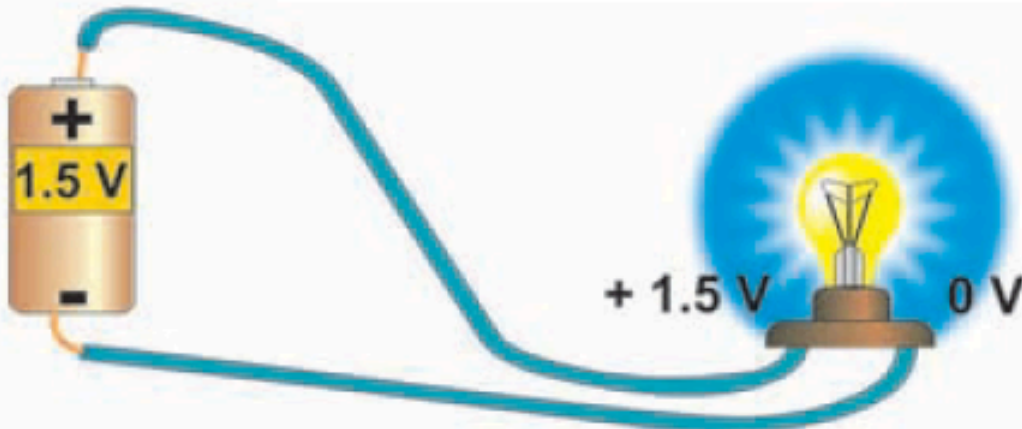
MOVE;

* MORE
VOLTAGE =
MORE
CURRENT

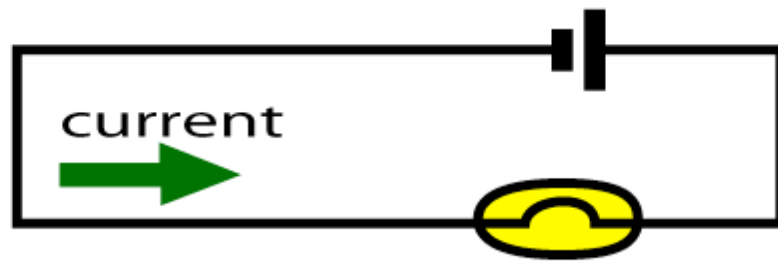
No voltage difference =
no electrical current



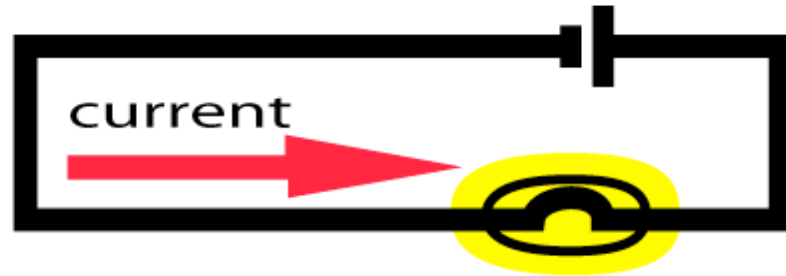
Create a voltage difference
and electrical current flows



high resistance
limits **current**



low resistance
allows **high current**



equipmentexplained.com
CAUSED BY:

RESISTANCE

*LONGER WIRE

*THINNER WIRE

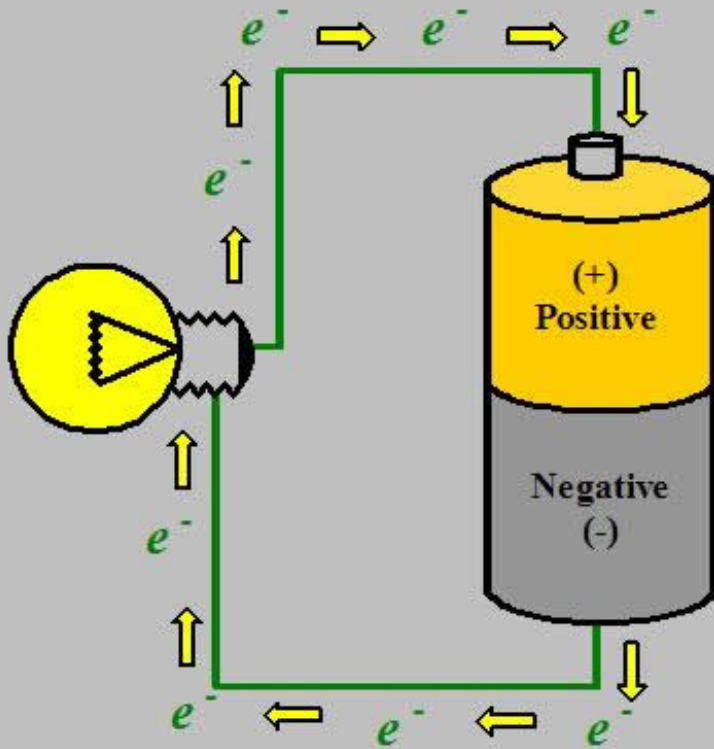
*MORE STUFF IN

THE CIRCUIT

MEASURES HOW
HARD IT IS FOR
CURRENT TO FLOW

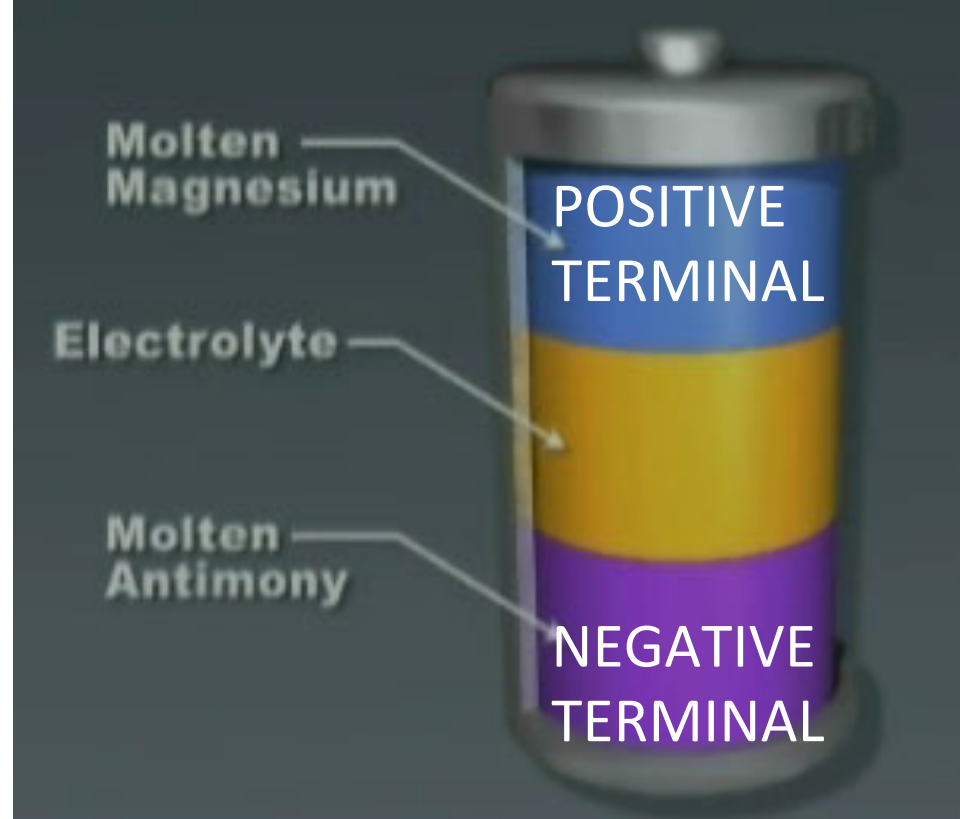
BATTERY

Simple Battery Circuit



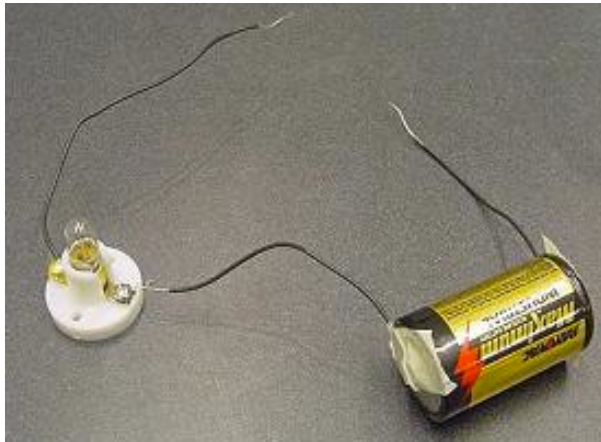
www.SolarSam.com

ELECTROCHEMICAL
CELL



TRANSFORMS
CHEMICAL ENERGY
INTO ELECTRICAL
ENERGY

CONDUCTORS
CONDUCT
ELECTRICITY

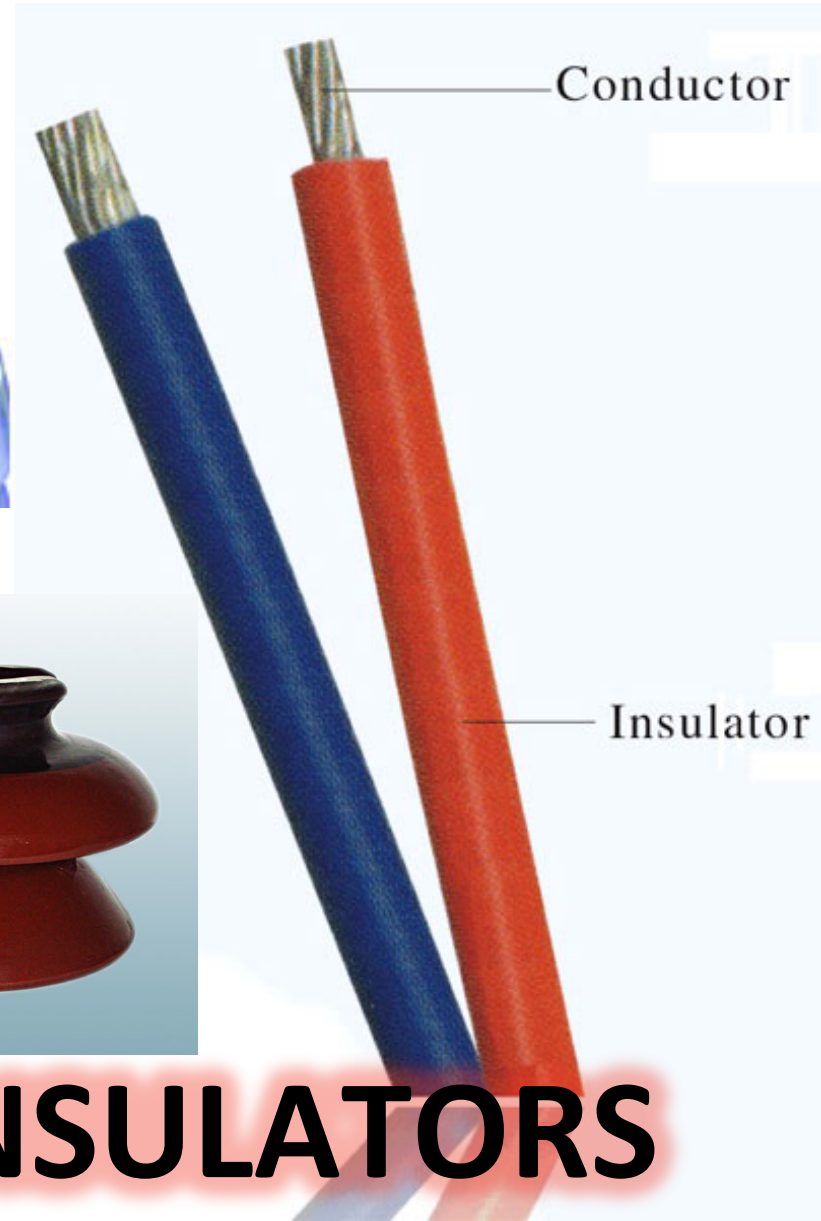


CONDUCTORS

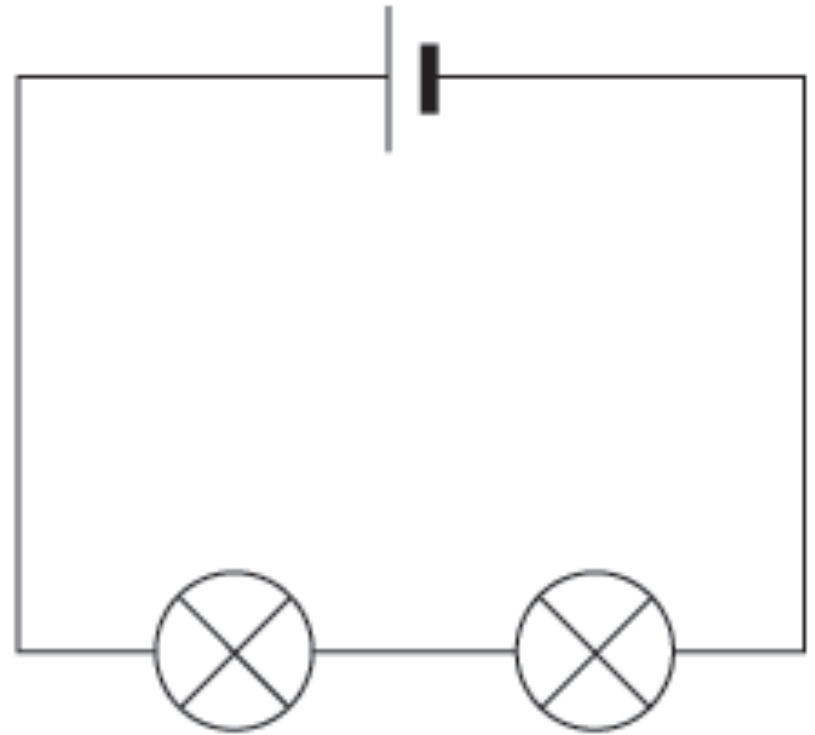
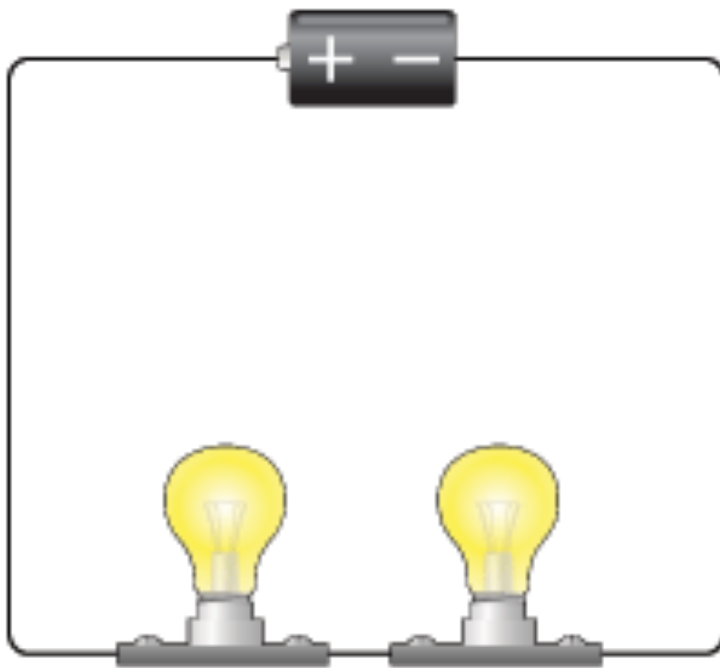
INSULATORS DO
NOT CONDUCT
ELECTRICITY



INSULATORS



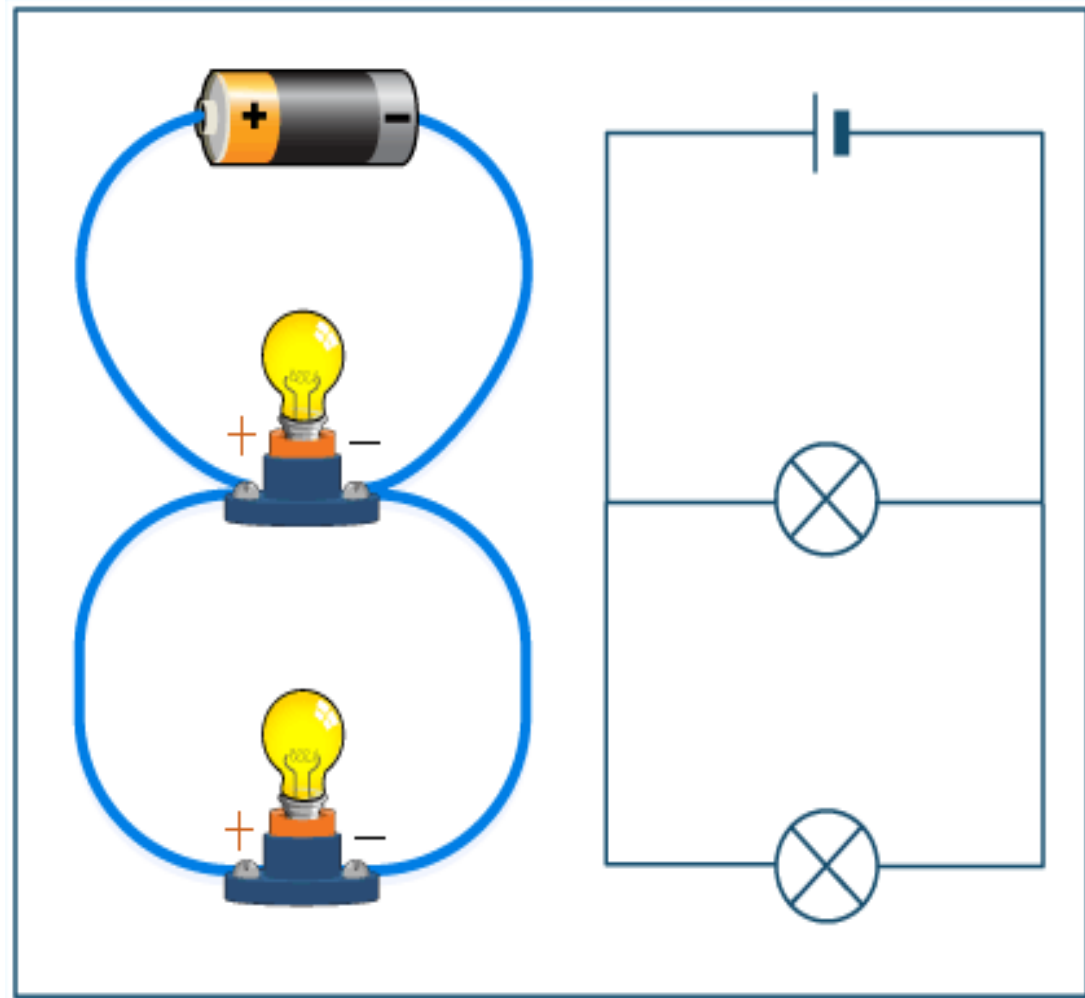
SERIES CIRCUIT



A CIRCUIT WHERE ELECTRONS
ONLY HAVE ONE PATH TO FLOW

PARALLEL CIRCUIT

A CIRCUIT
WHERE THE
ELECTRIC
CURRENT HAS
MORE THAN
ONE PATH TO
TAKE

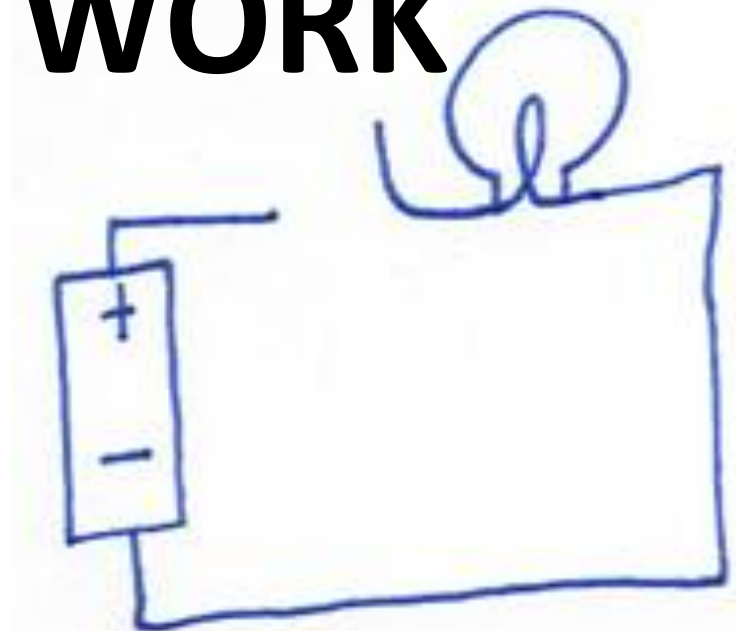


- *** USED IN HOMES
- *** CAN CONTROL PARTS SEPARATELY
- *** STAYS BRIGHT EVEN WHEN YOU TURN ON ANOTHER PART

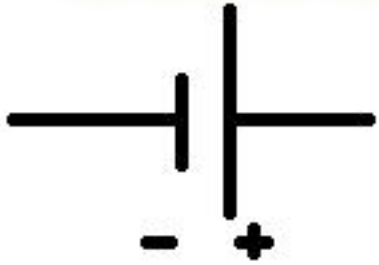
CLOSED
CIRCUIT:
WORKS



OPEN
CIRCUIT:
DOESN'T
WORK



CIRCUIT SYMBOLS



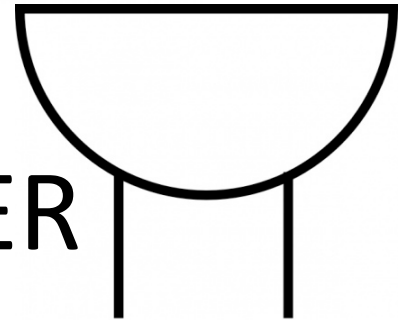
BATTERY/CELL



BULB



MOTOR



BUZZER



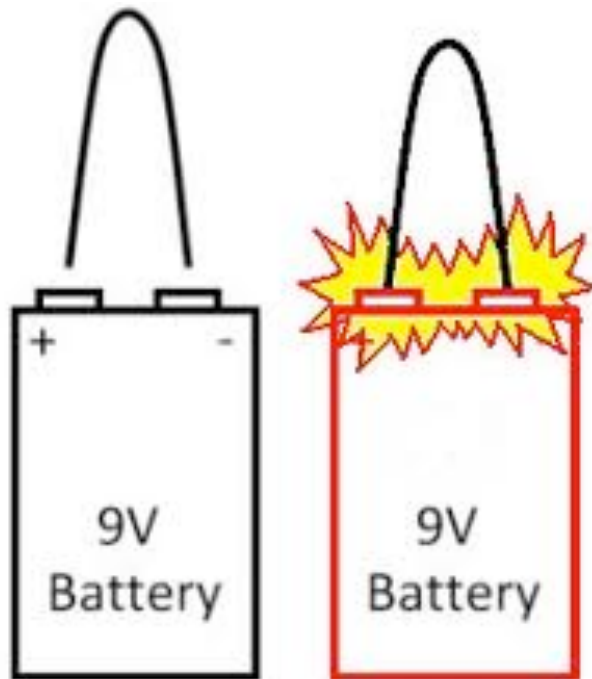
CLOSED SWITCH (ON)



OPEN SWITCH
(OFF)

SHORT CIRCUIT

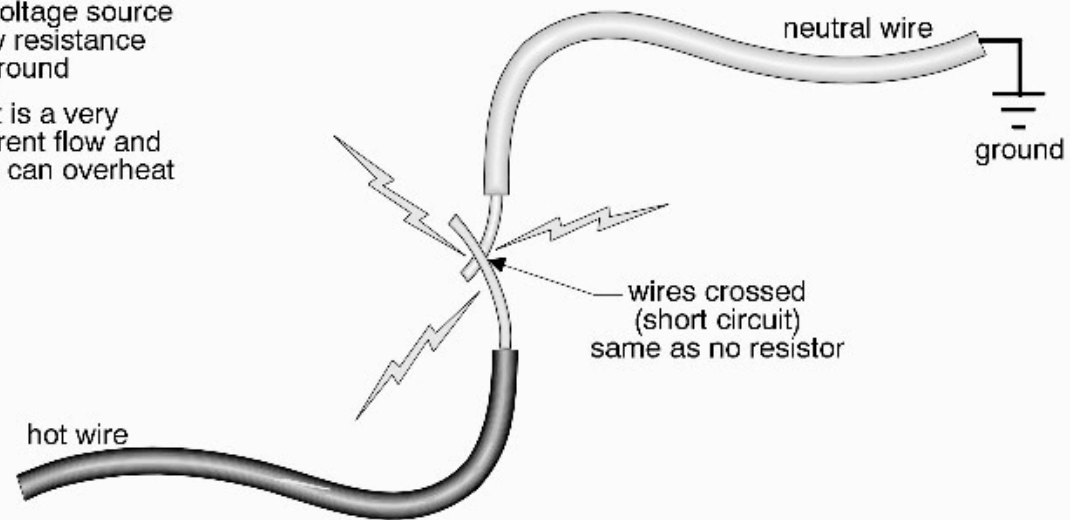
- WHEN ELECTRICITY TRAVELS A PATH IT IS NOT SUPPOSED TO TAKE
- DANGEROUS: CURRENT GETS TOO HIGH AND CIRCUIT TOO HOT



Short circuit

a short circuit occurs when a voltage source has a low resistance path to ground

the result is a very large current flow and the wires can overheat



(C) 2008 CarsonDunlop.com

FUSE

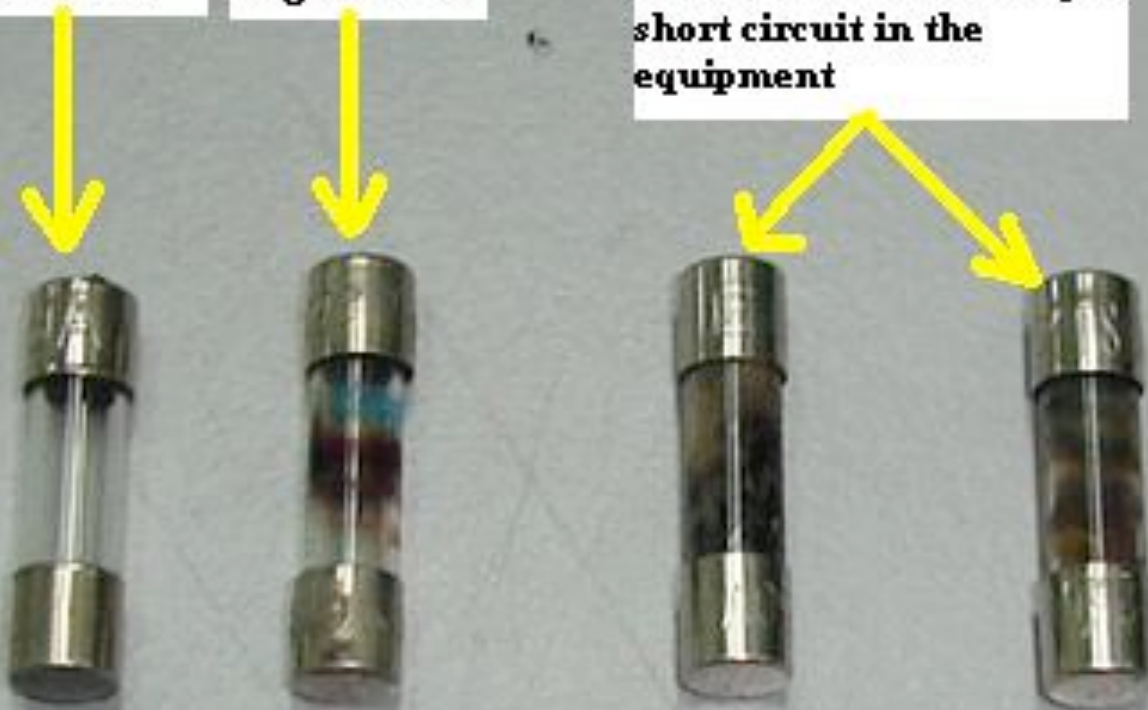
- SACRIFICIAL SAFETY DEVICE IN A CIRCUIT THAT MELTS IF TOO MUCH CURRENT FLOWS



A Good Fuse

Slight Burnt

Discolored means a major short circuit in the equipment



CIRCUIT BREAKER

SAFETY DEVICE
WHICH
AUTOMATICALLY
TURNS OFF A
CIRCUIT IF THERE
IS TOO MUCH
CURRENT
FLOWING

