

Section 9-1

Electric Charge and Static Electricity



Electric Charge

Tear a piece of tissue paper into small pieces. Scatter the pieces on your desk.

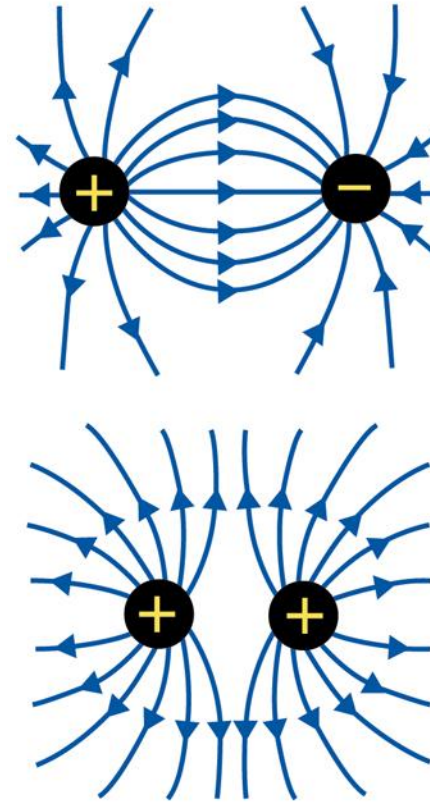
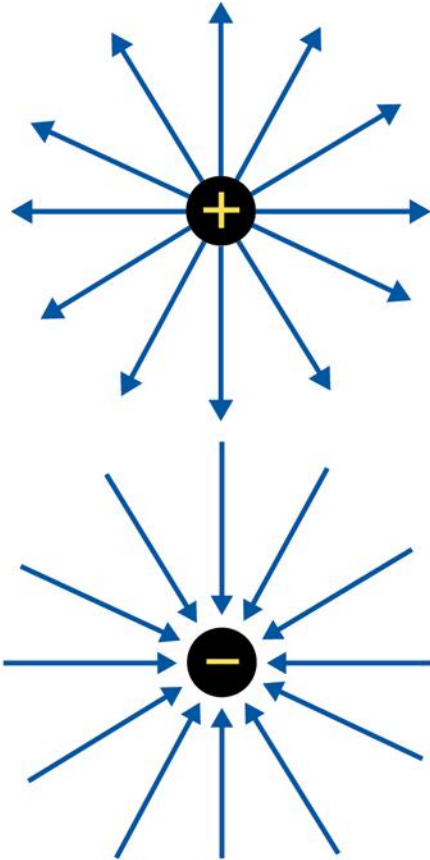
Place a plastic comb close to the tissue pieces. What do you observe?

Run the comb through your hair several times.

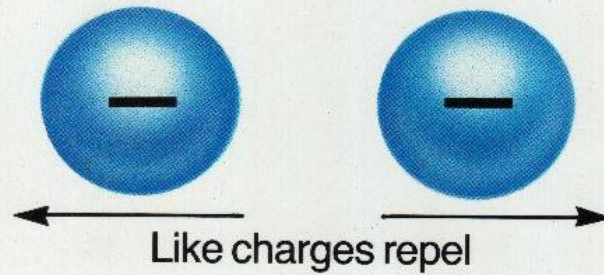
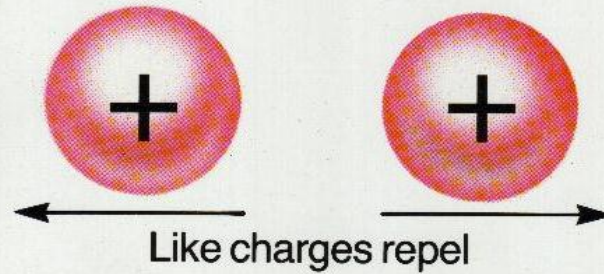
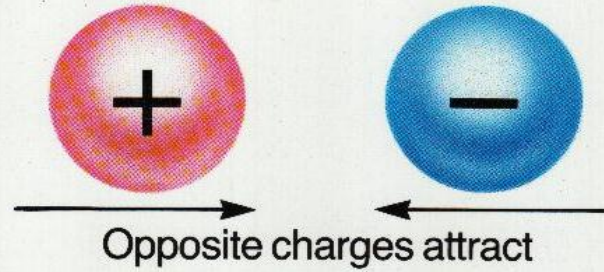
Place the comb close to the tissue pieces. What do you observe?



Electric Charge



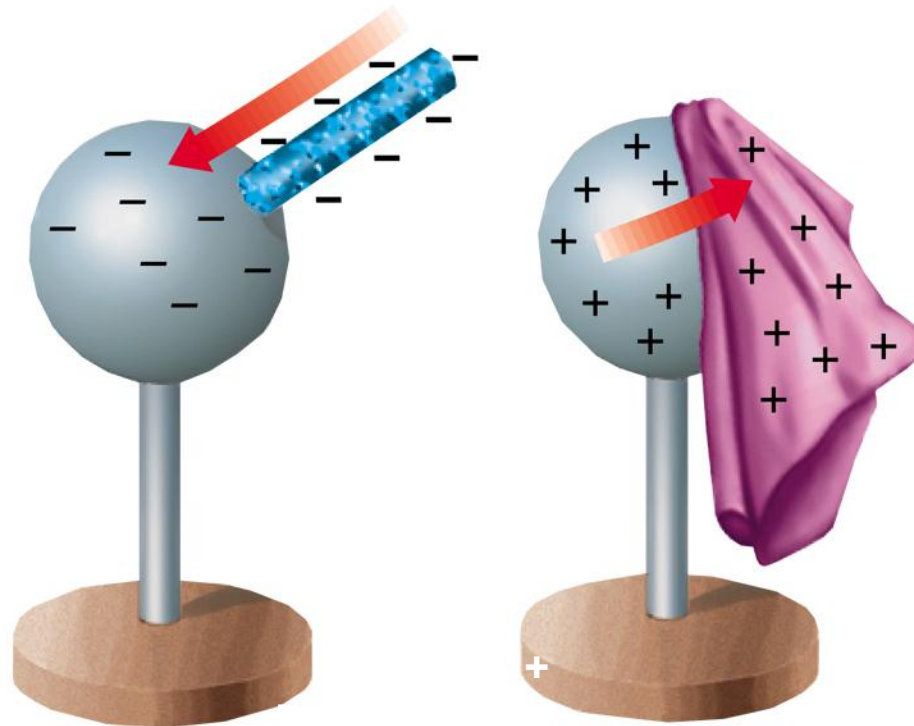
1. LIKE AND UNLIKE CHARGES



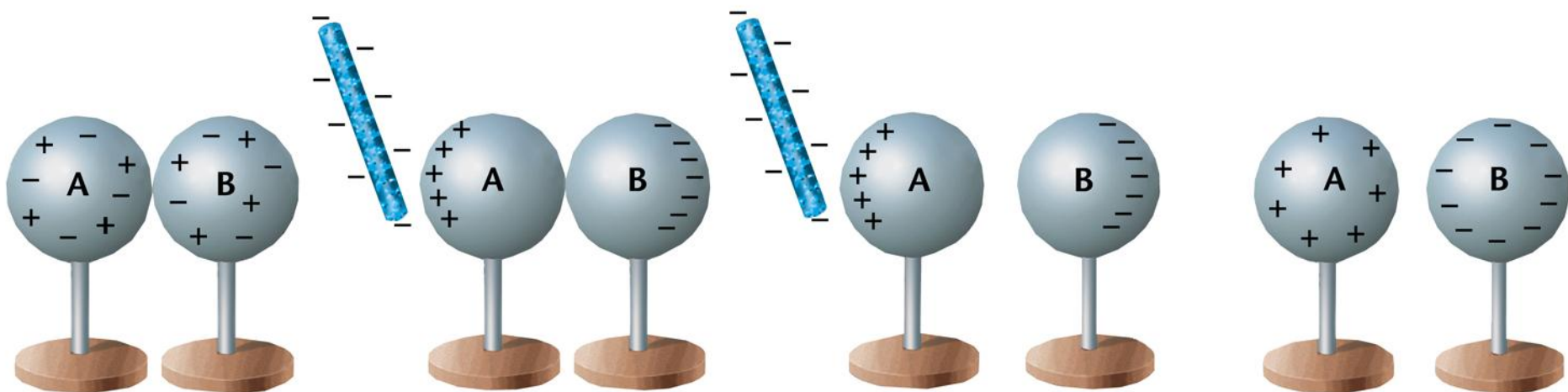
Charging By Friction



Charging By Conduction



Charging By Induction



Methods of Electron Transfer

Method	Charges Transferred By
Friction	Rubbing
Conduction	Direct contact
Induction	Electric field without direct contact

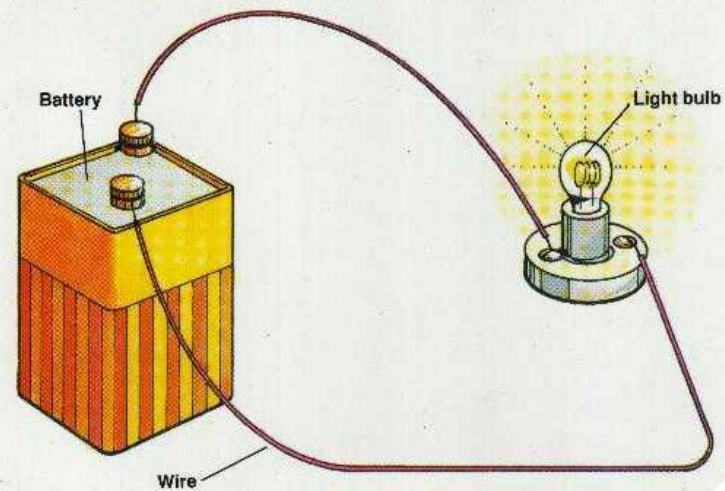
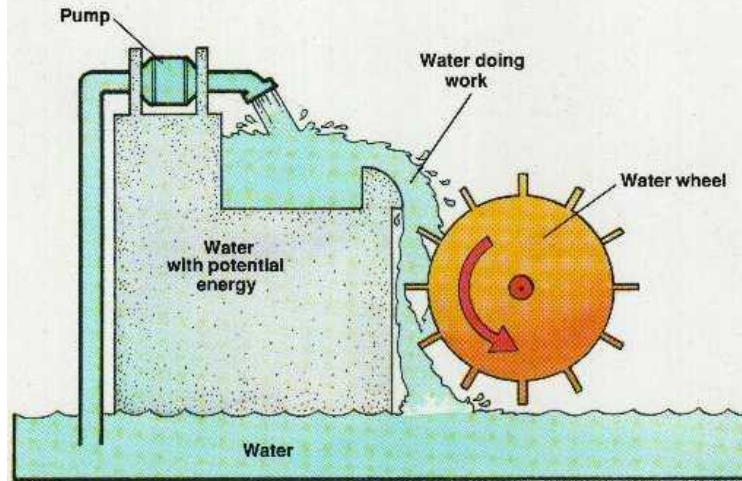


Section 9-2

Circuit Measurements



2. ELECTRIC CIRCUIT



Potential difference:

The difference in electrical potential between two places. It is also called ***voltage***.

Resistance:

The opposition to the flow of electrons. The greater the resistance, the less current there is for a given voltage.



Electric Current

Factors that affect resistance:

thickness of the wire

length of the wire

how well the material conducts current

temperature

Path of Least Resistance

If electric current can travel through either of two paths, more of the current will travel through the path with lower resistance.



Ohm's Law (Georg Ohm):

Resistance is equal to the voltage divided by the current.

$$\text{Resistance} = \frac{\text{Voltage}}{\text{Current}} \quad \text{or} \quad \text{Ohms} = \frac{\text{Volts}}{\text{Amps}}$$

Potential difference or voltage is measured with a **voltmeter**.

Current is measured with an **ammeter**.

P 292 “Sharpen Your Skills”

