Electric Charge

Terms	
Induction	process of heating electrically conductive materials
Conductors	materials that allow electrons to move separately from their atomic orbits
Coulomb	SI unit of electric chagre
Dipole	2 equal and opposite charges
Electric Charge	electrically charged particles
Electrons	carries the smallest type of negative charge
Field Lines	
Benjamin Franklin	named the positive and negative charges
Fundam-ental Charge	1.6×10^{-19}
Conductor	allows electricity to flow through it
Insulator	electric current does not flow freely

Electric Charge (cont)

Coulomb's Law	$F = k (q1q2)/r^2$
(electric force increases as charge increases)	k = coulomb's constant (8.99×10^9)
(electric force decreases as distance increases)	q1 = charge of object 1
	q2 = charge of object 2
	r = distance of object 1 and 2 from each other
Vector Analysis - used when 3 or more objects are involved	

Particle	Proton	Electron	Neutron
Mass	$9.1093897 \times 10^{-31}$ kg	$1.6726231 \times 10^{-27}$ kg	$1.6749286 \times 10^{-27}$ kg
Charge	+ $1.69217733 \times 10^{-19}$ C	- $1.69217733 \times 10^{-19}$ C	none
Location in Nucleus	nucleus	outside nucleus	nucleus

Electric Charge 2

Electrostatic Interaction	
1. Any charged objects can attract a neutral object	
2. Unlike charges attract	
3. Like charges repel	
charges of a particle depends on the sum of its electrical charges	$1 C = 6.242 \times 10^{18}$

Ion	atom or group of atoms that bears one or more positive or negative charges
Cation	more proton, positive ion
Anion	more electron, negative ion

Charging Objects

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