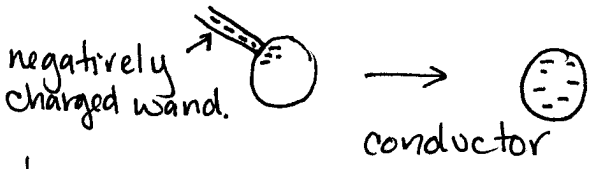
Charge

- excess e^- = (-)
- deficient e^- = (+)

metals = (+) cations in a "sea of (-) electrons"
↳ electrons can easily move

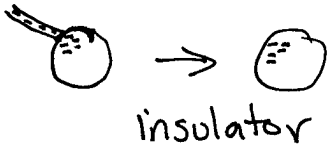
Conductors

-allow charge to easily and instantaneously distribute accross a surface.



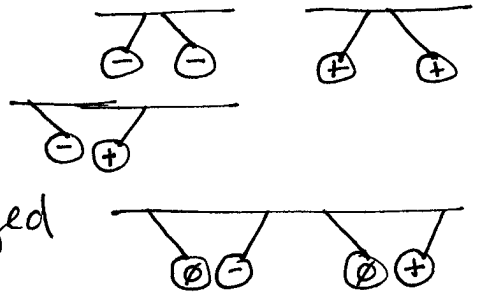
Insulators

- electrons are held tightly by the nucleus and cannot move to distribute charge



Charge Interactions

- like charges repel
- opposites attract
- neutral and charged particles attract.



Coulomb's Law

- one electron has a charge of -1.6×10^{-19} Coulombs
- to find total charge, multiply # of electrons x charge on each electron.

ex: object deficient in 1.2×10^3 electrons

q = Charge = $1.2 \times 10^3 \times 1.6 \times 10^{-19}$ C = $+1.9 \times 10^{-16}$

- $\boxed{F = \frac{k q_1 q_2}{d^2}}$: force of attraction or repulsion between 2 charged particles is directly related to their charge and inversely related to the square of the distance between them.