Temp. & Kinetic Theory Chapt 13
Investigation of atoms & their random motion

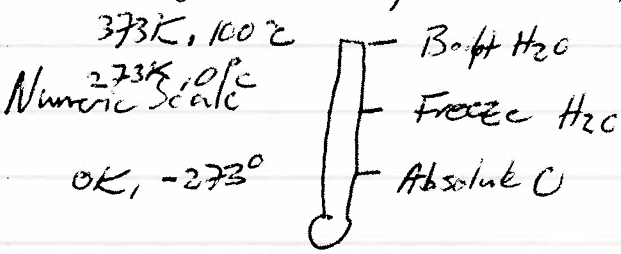
<u>Atomic Mass</u> - Based on C^{12} atom

$C^{12} = 12$ atomic mass units (u)

$1u = 1.66 \times 10^{-27} Kg$

<u>Temperature</u> - How hot/cold an object is ↑Temp - Materials Expand
(concrete expands,

<u>Thermometer</u> - Measures Temp by an expansion of material
(Change in density - Mercury), (Metal/Metal Band)
2 metals expand at different rates, causes metal to bend ~~all this~~ ~~switch~~



$T(K) = T(°C) + 273.15$

<u>13.3 Thermal Equilibrium</u>

- 2 objects placed in contact at different temp. will eventually reach the same temp.
  (Ice Cube in Water, Hand in Cold lake)
- If in Contact & there is no energy flow, there will be no Change in Temp
  Ex. (Ice Cube in Freezer, Sneakers outside)

<u>Thermal Expansion</u>

Change in length is directly proportional to change in temp
Ex. For all the same temp change 4m piece of steel will inc. by 2x compared to a 2m piece of steel

Change in volume is directly proportional to change in temp

$\Delta L = \alpha L_0 \Delta T$ (α Const) $\Delta V = \alpha V_0 \Delta T$