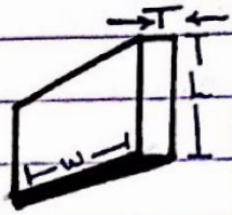
Experiment 1: Density of a Metal and Distance between it's Atoms:

- NOTE: in Metal, The atoms are, spherical and identical



$V = W \times T \times L$

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* To Calculate (Estimate) Number of atoms (N) in piece of Material:

$$N = n(N_A) = \frac{M}{A_W} N_A \quad -[1]$$

M → Mass (الكتلة)
Na → Avogadros Number
Aw → Atomic Mass

الكتلة الذرية

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if we assumed that every Atoms inside a box of edge (a), we can describe The law of N in another way:

$$N = \frac{M}{\rho a^3} \quad -[2]$$

$* \rho a^3 = A_W$ (density, volume, mass)

from equations [1] and [2]:

$$a = \sqrt[3]{\frac{A_W}{\rho N_A}}$$

UNC. ?

- Mass: Estimated by The Balance scale.
- Volume: $\frac{\Delta V}{V} = \frac{\Delta T}{T} + \frac{\Delta L}{L} + \frac{\Delta W}{W}$