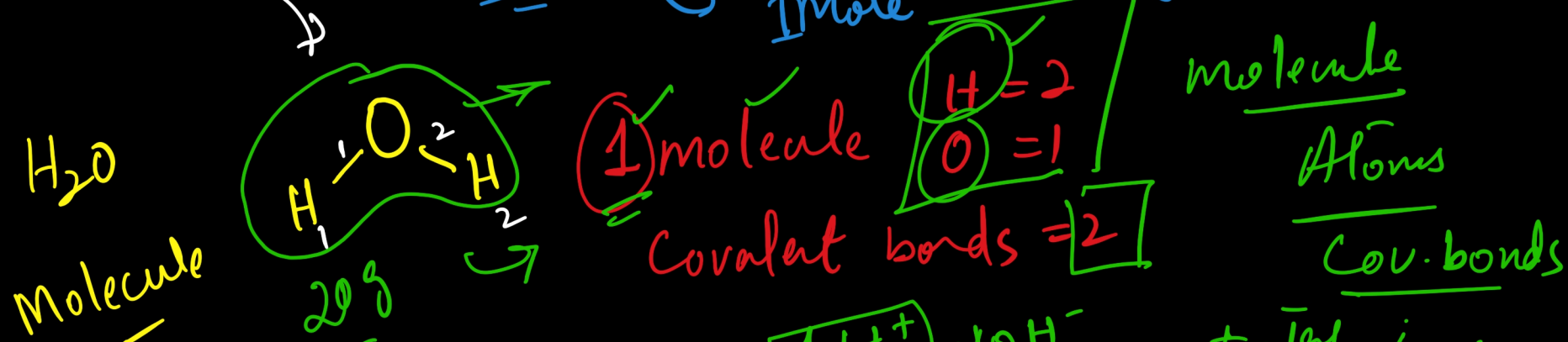
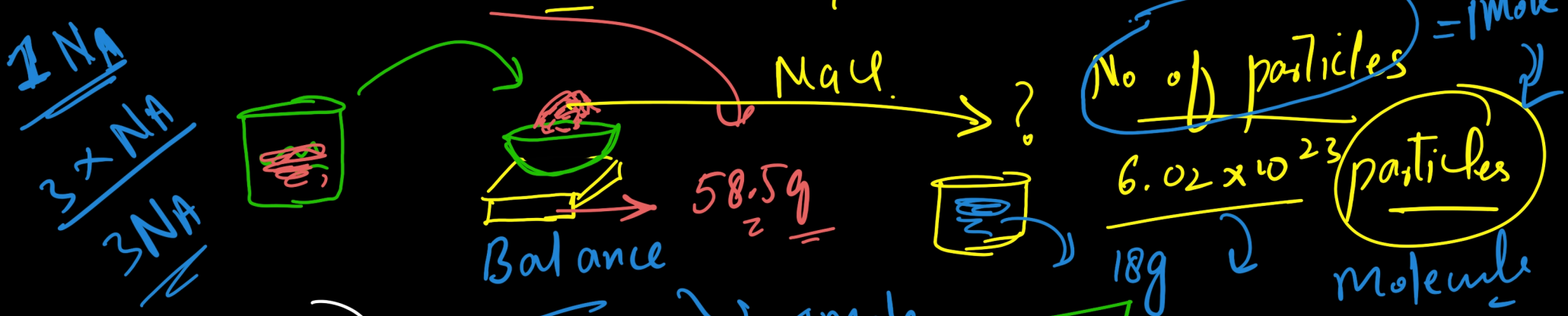


Mole (Quantity or Amount)

$Mole = \frac{mass}{Molar\ Mass}$
Atomic/Molecular mass

Substance	Element	Compound	Ionic Specie	Ionic Comp.
Particles	Atoms	Molecules	Ions	Formula Units
Examples	H, Na, K, Ca	H ₂ , O ₂ , H ₂ O	H ⁺ , Na ⁺ , Cl ⁻	NaCl, KBr
Mass (amu)	1, 23	44, 18	1, 23	58.5, 23+35.5
Molar Mass	Atomic Mass	Molecular Mass	Ionic Mass	Formula Unit mass
Mole	Gram atom	Gram molecule	Gram Ion	Gram form. unit
Avogadro's No	22.414 dm ³	6.02 x 10 ²³		
NaCl = 58.5	(23 + 35.5)	CaCO ₃	12 + 12 + 48 + 40 = 100	



① Molecules = $\frac{mass}{m.mass} \Rightarrow \frac{m}{M}$
 $\frac{36g}{18} = 2$
 ② Molecules (H₂O) = $\frac{2 \times 6.02 \times 10^{23}}{2NA}$
 ③ No of atoms = $\frac{Molecules}{bonds}$
 ④ No of bonds = $\frac{Molecules}{bonds}$

CaCO ₃	→ moles →	①	②
10g	→ Ca	2NA	2(2NA)
	→ C		
	→ O ₃		

→ Total No of atoms in 10g CaCO₃

K₂Cr₂O₇ → 100g
 mass/moles (K₂)
 Molar mass = $\frac{mass}{m.mass}$
 Molecules?

Gram Mole
 Gram atom
 $\frac{1 \text{ mole}}{2} = \frac{1NA}{2} = \frac{Volume}{2 \times V_m} = \frac{22.414 \text{ dm}^3}{2 \times 22.414} = \frac{22.414}{44.828} = 0.5 \text{ dm}^3$