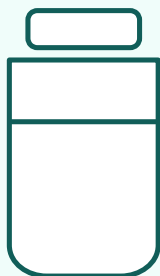


The Mole

10th Grade

A counting unit for atoms — and the three formulas that use it.



A mole is 6.022×10^{23} particles. It is the bridge between masses you can weigh and atoms you cannot count.

AVOGADRO

$$6.022 \times 10^{23}$$

MOLAR VOLUME

$$24 \text{ dm}^3 \text{ at RTP}$$

- moles = mass $\div$ molar mass.
- particles = moles $\times 6.022 \times 10^{23}$.
- For gases at RTP, volume = moles $\times 24 \text{ dm}^3$.
- Molar mass in grams equals the relative atomic mass.
- Coefficients in a balanced equation are mole ratios.

LOOK FOR IT

12 g of carbon is 1 mole, which is 6.022×10^{23} carbon atoms.

Grams to moles, mole ratio, moles back to grams. Nearly every stoichiometry question is that sequence.