

Stoichiometry on One Sheet

1. Write and balance the chemical reaction from the information provided.
2. Identify your given (known) and your wanted (unknown)
3. Change your given (known) into **moles** if it isn't already - remember all the ways:

If you are given your known value in	Use this equation to convert to moles
g or kg or mg - these are masses	$n = \frac{m}{M}$
L or mL or kL of a gas at STP	$n = \frac{v}{V}$
Atoms, formula units, molecules, any particles	$n = \frac{P}{A}$

4. Apply the mole ratio formula:

$$\text{number of moles of your wanted} = \text{number of moles of your given} \times \frac{\text{Coefficient of wanted}}{\text{Coefficient of given}}$$

5. Convert your number of moles of your wanted to whichever units you were asked in the question.

If you are asked for	Use
mass (grams, kilograms, milligrams)	$m = nM$ (gives answer in grams)
volume of a gas at STP (in L or mL)	$v = nV$ (gives answer in L)
Particles like atoms, ions, molecules, formula units etc.	$P = nA$