Chemistry 11
Stoichiometry Unit

# Mole Relationships

## MOLES
are like "Central Station"

## MASS (g/mole)

MOLAR MASS (periodic table)

units = grams/mole

## # of PARTICLES

$6.02 \times 10^{23}$ particles/mole

- molecules
- atoms
- ions
- electrons

All types of "particles"

## VOLUME OF GAS (L)

22.4L/mole @ STP

- Litres
- Standard
- temperature
- pressure

**Stoichiometry**
Is the calculation of reactants (what you start with) and products (what you end up with) in chemical reactions.
(where substances fundamentally change into other substances)

e.g. $2H_{2(g)} + O_{2(g)} \rightarrow 2H_2O$ twice as much Hydrogen as Oxygen is needed to make water.

Just like in baking, you can use stoichiometry to find out how much of your reactants (ingredients) you need in order to have a specific amount of product (cookies!).

**Mole** = base unit for the amount of substance
(it's a SI unit! Like: Grams, Meters, Litres)

International System of units