Name:

Calculations 2

You need to be able to convert between a mass in grams and a number of moles for a given substance.

$$\text{number of moles} = \frac{\text{mass (g)}}{\text{mass of 1 mole (g)}}$$

A few examples:

1. How many moles are there in 24g of magnesium?

2. How many moles of calcium carbonate ($CaCO_3$) are there in 20g?

3. How many moles are there in 72g of water?

4. How many moles of copper (II) sulphate crystals, $CuSO_4.5H_2O$, are there in 25g?

You can use moles to work out the formulae of compounds.

6.4g of copper burned completely in air to form a black solid with a mass of 8.0g. What is the formula of the compound produced?

	Cu	O
Reacting masses		
No of moles of each atom		
Ratio of moles		
Formula		

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The simple formulae you get from these calculations are called 'empirical formulae'.

A compound forms between carbon and hydrogen. It is analysed and found to contain 80% carbon and 20% hydrogen. What is the empirical formula of the compound?

	C	H
Percentages		
Combining masses in g		
No of moles of each atom		
Ratio of moles		
Empirical formula		