What does a chemical formula tell us?

Setting the scene

A compound is a substance made up of two or more elements. The atoms in compounds are strongly joined together. Compound names and formulae tell us about the elements they are made from.

Aims

In this activity you will:

- use names and formulae to answer questions about compounds
- use formulae to decide a compound's name.

You will be using **enquiry processes** to:

- **Analyse:** interpret observations and data to draw conclusions.

Questions

1 Write the elements that each of the following compounds is made from:

a iron sulfide

b hydrogen chloride

c hydrogen bromide

d lithium fluoride

e nitrogen dioxide

f HF

g CO_2

h SO_2

i CH_4

2 Write how many atoms of each element are in each of the following compounds. The first one has been done for you.

a H_2O

2 hydrogen atoms, 1 oxygen atom

b CaO

c $MgCl_2$

d $CaCO_3$

e Al_2O_3

f AgI

g KOH

h H_2SO_4

i HNO_3

3 24 g of magnesium is burned in oxygen. The compound formed has a mass of 40 g. Explain why the mass has gone up.

4 State the name of the compound formed in Question 3.

Extension

1 64 g of sulfur dioxide (SO_2) contains 32 g of oxygen. Calculate how much sulfur it contains.

2 Describe what the answer to Extension Question 1 tells you about the mass of sulfur atoms compared to oxygen atoms.

3 Megan wanted to make some calcium chloride ($CaCl_2$) for an experiment. She knew that for every 40 g of calcium there would be 71 g of chlorine. Megan only used 20 g of calcium. Calculate how much chlorine would be in the compound.

4 23 g of sodium reacted with 35.5 g of chlorine. Calculate the mass of the sodium chloride compound formed.