	SHS LEARNING ACTIVITY	CHEM1-02-08

Name: _____ **Score/Mark:** _____

Grade and Section: _____ **Date:** _____

Strand: ☐ **STEM** ☐ **ABM** ☐ **HUMSS** ☐ **ICT (*TVL Track*)**

Type of Activity : ☐ Concept Notes ☐ Skills: Exercise/Drill ☐ Illustration ☐ Laboratory Report ☐ Essay/Task Report ☐ Other: _____

Activity Title: 02-08.Elements can combine into compounds v02

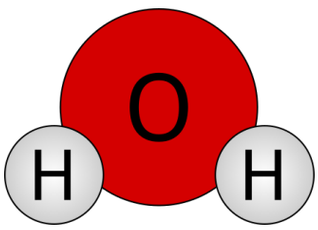
Learning Target: To identify that compounds such as water are made of two or more elements

Authors/References: Victor Sojo

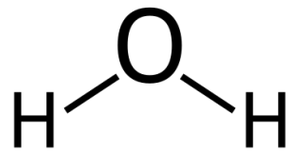
Elements can combine into compounds. One of the most familiar compounds is **water**, which is made of **hydrogen** and **oxygen**. Through experimentation, we can show that there is **twice as much hydrogen as there is oxygen**. For this reason, we write the chemical **formula** of water:

$$H_2O$$

The little number in the middle belongs to the hydrogen, not to the oxygen. It means that there are **two atoms of hydrogen for each atom of oxygen** in a water molecule (oxygen has a 1, but we don't write this). If we could see it, a water molecule would actually look something like this:



… or drawn another way:



So sometimes chemists write HOH, although H_2O is more common.

But not all compounds form molecules such as HOH. Some compounds, like table salt (NaCl), make a crystal that spreads in all six directions: up, down, left, right, back and forth, without any clear beginning or end. Every sodium ion (Na^+) is followed by a chloride ion (Cl^-), which is followed by another sodium, then another chloride, and so on, in every direction. We write NaCl simply because for every atom of sodium there is one of chlorine.

Exercise: Calculate the numbers of atoms of each element in aluminium sulphate $Al_2(SO_4)_3$ (note: the 3 multiplies the group in the parentheses).

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