

## Molecules

**Molecule** – 2 or more atoms of the same or different elements that are chemically joined together.

ie: oxygen gas is a molecule – it is 2 atoms of oxygen joined together

Water is a molecule – is 2 atoms of hydrogen joined to 1 atom of oxygen.

**Chemical formula** – notation that indicates the type and number of atoms in a pure substance.

ie: oxygen's chemical formula is  $O_2$

water's chemical formula is  $H_2O$

\*\*notice how the numbers are lower down.

This is called 'subscript'.

### Why are formulas helpful?

Formulas tell us 2 things: 1) What elements are in a certain compound and  
2) how many atoms of each elements are in the compound.

It doesn't matter what language you speak. If you understand basic chemistry, you can understand a formula!

Molecules: There are 2 types of molecules

1) Molecular element – these molecule has only 1 type of element

ie:  $H_2$  (hydrogen gas) or  $O_2$  (oxygen gas)

HOFBrINCl - these are elements that exist as diatomic molecules

That is...they have 2 of their atoms.

So...  $H_2$ ,  $O_2$ ,  $F_2$ ,  $Br_2$ ,  $I_2$ ,  $N_2$ ,  $Cl_2$ ,

2) Molecular compounds – these molecules have 2+ types of elements.

ie:  $H_2O$  (water),  $CH_4$  (methane) and  $C_6H_{12}O_6$  (glucose)