

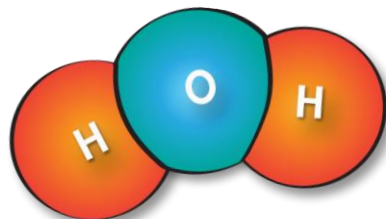
Counting Atoms in Molecules

Everything around you is made of matter, and all matter is made of **elements**.

Each element is built from **one kind of atom** – for example, oxygen (O), hydrogen (H), or carbon (C).

When atoms join together, they form **molecules**, and if those atoms are from different elements, the molecule is called a **compound**.

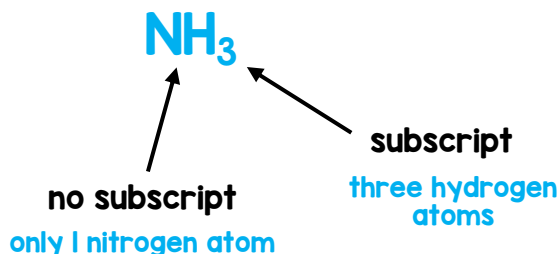
To understand what a molecule is made of, scientists use chemical formulas to show how many and what types of atoms are present.



This is the chemical formula for water!

written as
 H_2O

How to Read a Chemical Formula



A chemical formula uses symbols and small numbers (called *subscripts*) to show:

- What elements are in the molecule
- How many atoms of each element there are

If no number is written after a symbol, it means **one atom**.

If there's a small number after a symbol, it tells how many atoms of that element are present.

Steps for Counting Atoms in a Simple Formula

1. Identify each element symbol in the formula.
2. Read the subscript number that follows each symbol.
3. If there's no subscript, it means one atom.
4. Add all the atoms together to find the total number of atoms in the molecule.

Example: CO_2

$\text{C} = 1, \text{O}_2 = 2 \rightarrow 3$ total atoms

bright in the **middle**

Let's Connect!

