

## CHEMICAL FORMULA NOTES

	Element	Compound	Mixture
What kind of particles make it up?	one kind of atom	Molecule- more than one kind of atom	more than one kind of compound
How can it be broken down?	Can't be	By chemical reaction	By physical means
Is it the same throughout?	yes	yes	No

## Chemical Formula

- a shorthand notation that uses chemical symbols and numbers to represent a substance.

Each time you see a new capital letter, it means that is a DIFFERENT element.

Examples of chemical formulas:



2 elements

Answer

2 elements

Answer

3 elements

Answer

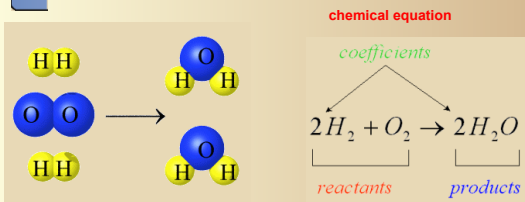
2 elements

Answer

How many elements do you see in each formula?

## Chemical Equation

- A symbolic representation of what happens when chemicals come in contact with one another.



**Coefficient** - the number placed in front of a chemical formula to represent the number of molecules of a certain substance.

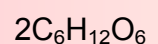
Example:



4 molecules of carbon dioxide



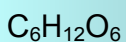
7 molecules of water



2 molecules of glucose

**Subscripts** - are used to show more than one atom of an element.

Example



6 carbon atoms

12 hydrogen atoms

6 oxygen atoms



2 hydrogen atoms

1 oxygen atom



1 carbon atom

2 oxygen atoms

Tap Here

Tap Here

Tap Here

Combining coefficients and subscripts to count atoms:



18 carbon atoms

36 hydrogen atoms

18 oxygen atoms

72 total atoms



12 hydrogen atoms

6 oxygen atoms

18 total atoms



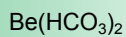
5 carbon atoms

10 oxygen atoms

15 total atoms

Erase to reveal answers

Parenthesis - subscripts after a parenthesis are applied to all elements inside the parenthesis.



Example:

1 atom of magnesium  
2 atoms of oxygen  
2 atoms of hydrogen

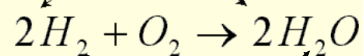
1 atom of beryllium  
2 atoms of hydrogen  
2 atoms of carbon  
6 atoms of oxygen

Pull compound up.

Pull

coefficients

Chemical formula



reactants

products

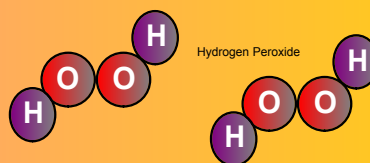
subscript

chemical equation



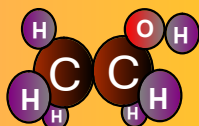
Hydroxide

Write the chemical formula for Hydroxide. OH



Hydrogen Peroxide

Write the formula for 2 molecules of Hydrogen Peroxide.



Ethanol  $[\text{C}_2\text{H}_6\text{O}]$

$3\text{C}_2\text{H}_6\text{O}$

How many atoms of each element are there in 3 molecules of Ethanol?

Carbon =         6        

Hydrogen =       18      

Oxygen =         3