

How to Count Atoms

Worksheet

1. The **symbol** of an element represents one atom of that element.
e.g., Ba =
2. A **subscript** is a number written at the **lower right** corner **behind** the s
there is more than one atom of the element, then a subscript is used t
atoms.
e.g., Cl₂ =

3. A **subscript outside a bracket** multiples all the elements inside the bra
e.g., Ca₃(PO₄)₂ =

Repeat Bracket twice

Ca	=	3	_____	Total = 13
P	=	2	_____	
O	=	8	_____	

3. A **coefficient** is a number written **in front of** a chemical symbol an
atoms of that element or number of molecules

e.g., 3C = 3 carbon atoms

2NaSO₄ = _____

A **subscript** is a number written **after** an atom in a formula and in
the kind in the molecule.
e.g H₂SO₄ The subscript of H = 2 and the subscript of O = _____

2 NaSO₄ Means

Na	SO ₄	← 4 oxygen
Na	SO ₄	← 4 oxygen
<div style="display: flex; justify-content: space-around; margin: 0;"> 2Na 2S 8 "O" </div>		

3. A coefficient is a number written in front of a chemical symbol and indicates atoms of that element or number of molecules

e.g., 3C =

2NaSO₄ = →

A subscript is a number written after an atom in a formula and indicates the kind in the molecule.

e.g. H₂SO₄ The subscript of H = 2 and the subscript of O =

Note: a coefficient multiplies the number of atoms of each element in the formula

e.g.,

2 H₂O

- molecules of H₂O
- H (hydrogen)
- O (oxygen)

Total = 6

2 H₂O
 means
 2 Hydrogen
 H₂O ← 1 oxygen
 H₂O ← 1 oxygen
 2 Hydrogen
 4 Hydrogen
 2 oxygen

3 Na₂SO₄

molecules of Na₂SO₄

- 6 Na (copper)
- 3 S (sulphur)
- 12 O (oxygen)

Total = 21

Na₂SO₄
 Na₂SO₄
 Na₂SO₄

4 Pb(NO₃)₂

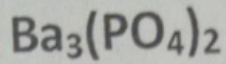
molecules of Pb(NO₃)₂

- 4 Pb (Lead)
- 8 N (nitrogen)
- 24 O (oxygen)

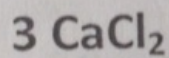
Total = 36
 Pb N₂ O₆

Pb(NO₃)₂
 Pb(NO₃)₂
 Pb(NO₃)₂
 Pb(NO₃)₂

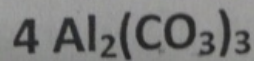
Compounds by using the coefficients and subscripts.



Type of Atom	# of Atoms
# Ba = 3	
# P = 2	
# O = 8	
Total	<u>13</u>

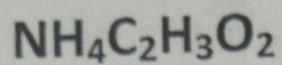


Type of Atom	# of Atoms
[Redacted]	
Total	[Redacted]



Type of Atom	# of Atoms
<u>Al (aluminium)</u>	<u>8</u>
<u>C (carbon)</u>	<u>12</u>
	20

Total

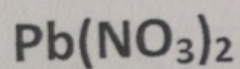
6

Type of Atom

of Atoms

$$\begin{aligned} \# \text{N} &= 1 \\ \# \text{H} &= 4+3=7 \\ \# \text{C} &= 2 \\ \# \text{O} &= 2 \end{aligned}$$

Total

12

Type of Atoms

of Atoms

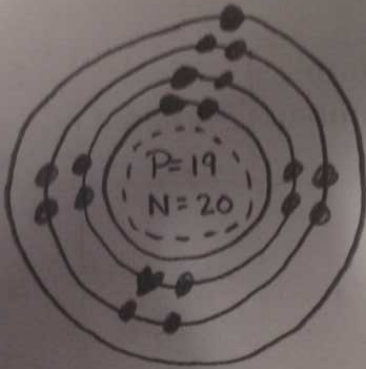
Total

Standard Notation

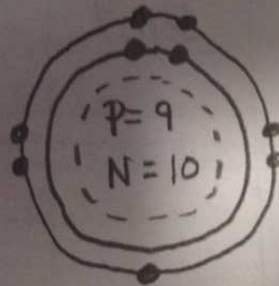
Mass
Atomic Element Symbol



otons and neutrons in the nucleus.

Element	Standard Notation	Bohr-Rutherford Diagram
potassium-39 ↑ mass	${}_{19}^{39}\text{K}$	 <p>#p = 19 #e = 19 #N = 20</p>

fluorine-19



aluminum-27

$^{27}_{13}\text{Al}$

