Counting Atoms

Worksheet

Count the atoms present in the different compounds by using the coefficients and subscripts.

K_2CO_3

Type of Atom	# of Atoms
_____	_____
_____	_____
_____	_____
Total	_____

$Ba_3(PO_4)_2$

Type of Atom	# of Atoms
_____	_____
_____	_____
_____	_____
Total	_____

Na_2CrO_4

Type of Atom	# of Atoms
_____	_____
_____	_____
_____	_____
Total	_____

3 $CaCl_2$

Type of Atom	# of Atoms
_____	_____
_____	_____
Total	_____

$NH_4C_2H_3O_2$

Type of Atom	# of Atoms
_____	_____
_____	_____
_____	_____
_____	_____
Total	_____

4 $Al_2(CO_3)_3$

Type of Atom	# of Atoms
_____	_____
_____	_____
_____	_____
Total	_____

$Pb(NO_3)_2$

Type of Atoms	# of Atoms
_____	_____
_____	_____
_____	_____
Total	_____

2 $(NH_4)_2Cr_2O_7$

Type of Atom	# of Atoms
_____	_____
_____	_____
_____	_____
_____	_____
Total	_____

How to Count Atoms

Worksheet

1. The **symbol** of an element represents one atom of that element.
   e.g., Ba = 1

2. A **subscript** is a number written at the **lower right** corner **behind the symbol** of an element. If there is more than one atom of the element, then a subscript is used to indicate the number of atoms.
   e.g., Cl_2 =

3. A **subscript outside a bracket** multiples all the elements inside the brackets.
   e.g., $Ca_3(PO_4)_2$ =

   Ca = _____
   P = _____
   O = _____

3. A **coefficient** is a number written **in front of a chemical symbol** and indicates the number of atoms of that element or number of molecules
   e.g., 3C = _____
   $2NaSO_4$ = _____ _____ _____
   A **subscript** is a number written **after an atom in a formula** and indicates the number of atoms of the kind in the molecule.
   e.g H_2SO_4 The subscript of H = 2 and the subscript of O = _____

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

e.g.,
2 H_2O
_____ molecules of H_2O
_____ H (hydrogen)
_____ O (oxygen)

3 Na_2SO_4
_____ molecules of Na_2SO4
_____ Na (copper)
_____ S (sulphur)
_____ O (oxygen)

4 $Pb(NO_3)_2$
_____ molecules of $Pb(NO_3)_2$
_____ Pb (Lead)
_____ N (nitrogen)
_____ O (oxygen)