Name: _____

Date: _____

COUNTING ATOMS

WORKSHEET

1. Chemical formulas can have three components.

   a) The _____ which are represented by a single uppercase letter, or represented by an uppercase letter followed by a lowercase letter. This tells you the types of elements in the compound.

   b) The _____ which are numbers that are found on the lower _____- hand side of each element symbol. This tells you the number of _____ of this element in the molecule. If an element symbol has no subscript next to it, then this indicates that there is only _____ atom of this element in the molecule.

   c) The _____ which surround some groups of atoms indicate that the numbers of all of the atoms inside the bracket need to be _____ by the _____ on the outside of the bracket found on the lower _____ - hand side of that bracket.

2. Record the number of each atom in each molecule, then record the total number of atoms in the molecule:

1) NaOH	
Element	# of Atoms
Total	

2) HNO_3	
Element	# of Atoms
Total	

3) Li_2O	
Element	# of Atoms
Total	

4) Li_2SO_4	
Element	# of Atoms
Total	

5) NH_4Cl	
Element	# of Atoms
Total	

6) $CaClO_3$	
Element	# of Atoms
Total	

7) H_2COCH_2	
Element	# of Atoms
Total	

8) $Mg(OH)_2$	
Element	# of Atoms
Total	

9) $Al(OH)_3$	
Element	# of Atoms
Total	

10) $NH_4C_2H_3O_2$	
Element	# of Atoms
Total	

11) $NaC_2H_3O_2$	
Element	# of Atoms
Total	

12) $(NH_4)_3PO_4$	
Element	# of Atoms
Total	

13) $Ca_3(PO_4)_2$	
Element	# of Atoms
Total	

14) $Fe_2(CO_3)_3$	
Element	# of Atoms
Total	

15) $Al_2(SO_3)_3$	
Element	# of Atoms
Total	

Name: ANSWER KEY

Date: _____

COUNTING ATOMS

WORKSHEET

1. Chemical formulas can have three components.

   a) The **element symbols** which are represented by a single uppercase letter, or represented by an uppercase letter followed by a lowercase letter. This tells you the types of elements in the compound.

   b) The **subscripts** which are numbers that are found on the lower **right**- hand side of each element symbol. This tells you the number of **atoms** of this element in the molecule. If an element symbol has no subscript next to it, then this indicates that there is only **one** atom of this element in the molecule.

   c) The **brackets** which surround some groups of atoms indicate that the numbers of all of the atoms inside the bracket need to be **multiplied** by the **subscript** on the outside of the bracket found on the lower **right** - hand side of that bracket.

2. Record the number of each atom in each molecule, then record the total number of atoms in the molecule:

1) NaOH	
Element	# of Atoms
Na	1
O	1
H	1
Total	3

2) HNO_3	
Element	# of Atoms
H	1
N	1
O	3
Total	5

3) Li_2O	
Element	# of Atoms
Li	2
O	1
Total	3

4) Li_2SO_4	
Element	# of Atoms
Li	2
S	1
O	4
Total	7

5) NH_4Cl	
Element	# of Atoms
N	1
H	4
Cl	1
Total	6

6) $CaClO_3$	
Element	# of Atoms
Ca	1
Cl	1
O	3
Total	5

7) H_2COCH_2	
Element	# of Atoms
H	4
C	2
O	1
Total	7

8) $Mg(OH)_2$	
Element	# of Atoms
Mg	1
O	2
H	2
Total	5

9) $Al(OH)_3$	
Element	# of Atoms
Al	1
O	3
H	3
Total	7

10) $NH_4C_2H_3O_2$	
Element	# of Atoms
N	1
H	7
C	2
O	2
Total	12

11) $NaC_2H_3O_2$	
Element	# of Atoms
Na	1
C	2
H	3
O	2
Total	8

12) $(NH_4)_3PO_4$	
Element	# of Atoms
N	3
H	12
P	1
O	4
Total	20

13) $Ca_3(PO_4)_2$	
Element	# of Atoms
Ca	3
P	2
O	8
Total	13

14) $Fe_2(CO_3)_3$	
Element	# of Atoms
Fe	2
C	3
O	9
Total	14

15) $Al_2(SO_3)_3$	
Element	# of Atoms
Al	2
S	3
O	9
Total	14