Name _____

Counting Atoms Practice

Read and highlight the passage below.

A **chemical formula** is a shorthand notation that uses element symbols and numbers to represent molecules of chemical compounds. For example, the chemical formula for water is H_2O.

A **subscript** is the little number written below and after a symbol that tells you how many atoms are present in the molecule. If there is no subscript, it is understood that only one atom of that element is present. When a subscript appears outside parentheses, it indicates that all the elements inside the parentheses should be multiplied by that subscript. For example, the formula $Fe(OH)_3$ indicates the combination of one atom of iron (Fe), three atoms of oxygen (O), and three atoms of hydrogen (H).

A **coefficient** is the big number in front of a chemical formula that tells you how many molecules are present. Use the distributive property of multiplication to determine the total number of atoms. For example, the chemical formula $4CO_2$ has four atoms of carbon (C) and eight atoms of oxygen (O).

Fill out the data table. Follow the method given in the example.

Chemical Formula and use	Names of Elements	Atom Count (Symbol and #)	Total Number of Atoms
$6H_2O$ water	Hydrogen Oxygen	H = 12 O = 6	18
$3CaCO_3$ limestone			
$2C_9H_8O_4$ (Aspirin			
$Mg(OH)_2$ stomach antacid			
$C_6H_4C_{l2}$ moth crystals			

$5C_2H_4O_2$ vinegar			
$C_7H_5(NO_2)_3$ dynamite			
$Ca(H_2PO_4)_2$ fertilizer			
$3FeS_2$ pyrite (fool's gold)			
$C_{14}H_9Cl_5$ DDT (in bug spray)			
$2C_6H_8O_6$ Ascorbic Acid (Vitamin C)			
$C_2H_5N_3O_9$ nitroglycerin (heart medicine)			
$4C_3H_8O$ rubbing alcohol			
$3H_2O_2$ hydrogen peroxide			
$C_{10}H_{14}N_2$ nicotine			

$6C_6H_{12}O_6$ glucose			
$3CH_4$ methane			
$2NaHCO_3$ sodium bicarbonate (baking soda)			
NaClO sodium hypochlorite (bleach)			
$5N_2O$ laughing gas			
$3SiO_2$ silicon dioxide (sand)			
$C_{12}H_{22}O_{11}$ sucrose (table sugar)			
HCl hydrochloric acid			
$6Al_2O_3$ aluminum oxide			

7NaOH sodium hydroxide			
H_2SO_4 sulfuric acid			
$4KNO_3$ potassium nitrate			
CaO calcium oxide			
$CaCl_2$ calcium chloride			
H_3BO_3 boric acid			
NH_4OH ammonium hydroxide			
CH_3COCH_3 Acetone (nail polish remover)			
$CaSO_4$ calcium sulfate			
$6MnO_2$ Manganese dioxide			