Name _____

Date _____ Per. _____

COMPOUND MOLECULES

Compound: a substance made up of atoms of different elements joined together (involves a chemical change)

Example: *There is no atom of water.

*Two atoms of hydrogen join with one atom of oxygen. (chemical bond)

*The smallest unit of water is called a molecule.

Chemical Formula: the arrangement of symbols and numbers that describe a compound

Example: H_2O

H = Hydrogen

2 = how many atoms of hydrogen (2)

O = Oxygen

If there is no number behind the element symbol, there is just one atom of that element.

Therefore, there is only 1 atom of oxygen in H_2O.

NaCl How many elements?

Name of elements

Atoms of each element

Total # of atoms

Name of compound

Your Turn:

H_2O_2 How many elements?

Name of elements

Atoms of each element

Total # of atoms

Name of compound

CO_2 How many elements?

Name of elements

Atoms of each element

Total # of atoms

Name of compound

$C_{12}H_{22}O_{11}$

How many elements?

Name of elements

Atoms of each element

Total # of atoms

Name of compound

<u>Other Chemical Formulas – write the chemical formulas for the following:</u>

nitrogen dioxide _____

aluminum oxide _____

acetylene _____

sodium carbonate _____

glucose _____

ammonia _____

benzene _____

Recipes for Compound Molecules: Write the following as chemical formulas.

1. hydrogen peroxide = two atoms of hydrogen, two atoms of oxygen
2. salt = one atom of sodium, one atom of chlorine
3. carbon monoxide = one atom of carbon, one atom of oxygen
4. nitric acid = one atom of hydrogen, one atom of nitrogen, three atoms of oxygen
5. sugar (sucrose) = twelve atoms of carbon, twenty-two atoms of hydrogen, eleven atoms of oxygen
6. carbon tetrachloride = one atom of carbon, four atoms of chlorine
7. ammonia = one atom of nitrogen, three atoms of hydrogen
8. carbon dioxide = one atom of carbon, two atoms of oxygen
9. methane gas = one atom of carbon, four atoms of hydrogen
10. water = two atoms of hydrogen, one atom of oxygen
11. baking soda = one atom of sodium, one atom of hydrogen, one atom of carbon, three atoms of oxygen
12. copper sulfate = one atom of copper, one atom of sulfur, four atoms of oxygen

FORMULAS FOR RECIPES

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Formulas of Compound Molecules (Answers to Choose From)

CO_2
H_2O
CO
NH_3
NaCl
CCl_4
$NaHCO_3$
$CuSO_4$
$C_{12}H_{22}O_{11}$
CH_4
H_2O_2
HNO_3

Here are some formulas. **You write out the recipe.**

1. (aluminum phosphate) $AlPO_4$ = _____

2. (radium sulfate) $RaSO_4$ = _____

3. (potassium carbonate) K_2CO_3 = _____

4. (magnesium bromide) $MgBr_2$ = _____

5. (ethyl alcohol) C_2H_6O = _____

Do you know how to read formulas? Read through the following formulas for molecules of different compounds. Then tell how many different elements and atoms are in each molecule.

		# of elements	# of atoms
1.	H_2O_2	_____	_____
2.	CO	_____	_____
3.	CO_2	_____	_____
4.	Fe_2O_3	_____	_____
5.	$NaCl$	_____	_____
6.	$C_{12}H_{22}O_{11}$	_____	_____
7.	H_2O	_____	_____
8.	NH_3	_____	_____

What are the common names for the eight compounds above?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Rust is the chemical produced when iron (Fe) compounds corrode in the presence of oxygen (O) and water (H_2O).