

Chemical Formulas Worksheet

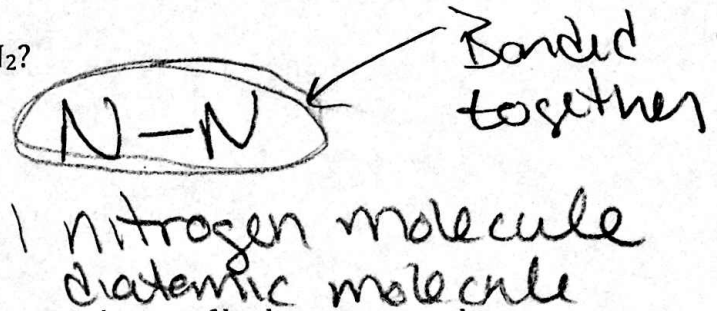
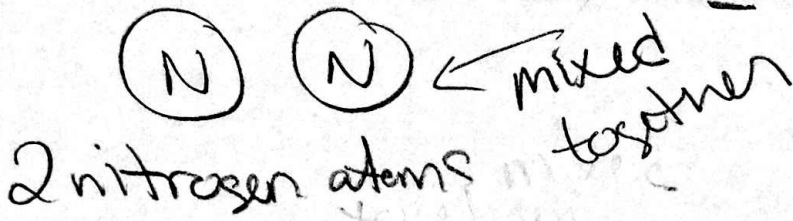
Advanced Chemistry 2014 - 2015

Name: KEY Block: _____

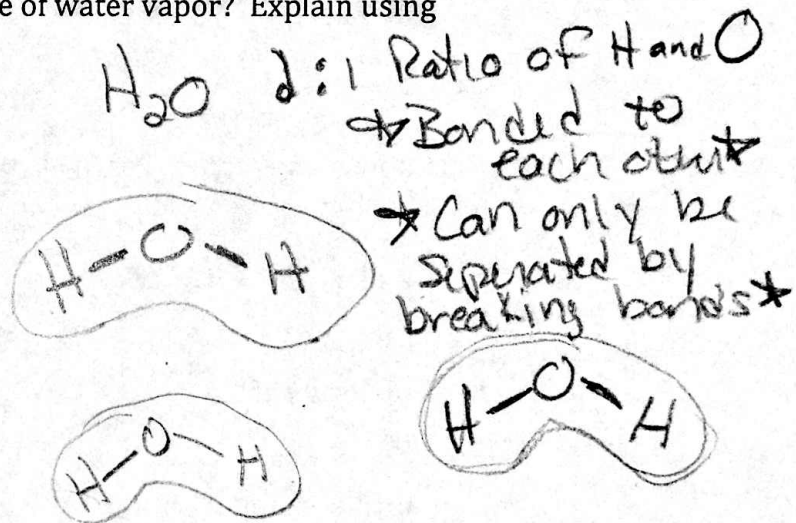
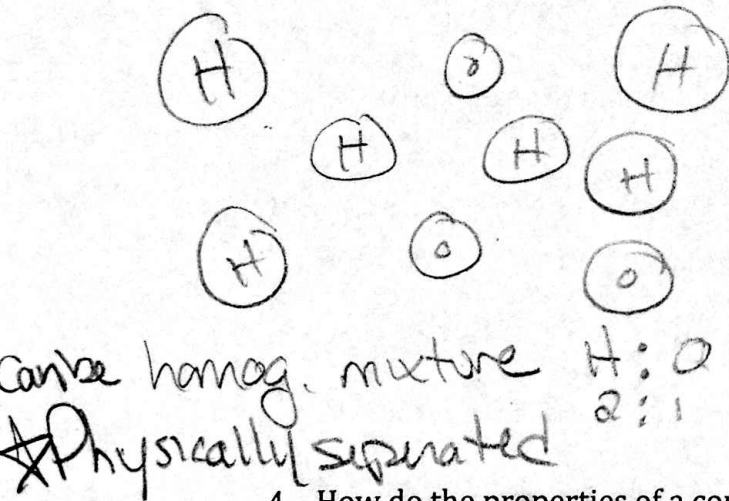
1. Explain what the formula of water, H_2O , tells us in your own words.

2 atoms of hydrogen and 1 atom of oxygen

2. What is the difference between $2N$ and N_2 ?



3. Is there a difference between a homogeneous mixture of hydrogen gas and oxygen gas in a 2:1 ratio and a sample of water vapor? Explain using microscopic level sketches.



4. How do the properties of a compound, in general, compare with the properties of the elements of which it is composed? Give an example of a common compound and the elements of which it is composed to illustrate your answer.

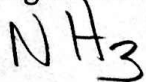
(EX) H_2O vs. hydrogen + oxygen

Properties of compounds are very different than the properties of the elements it is composed of.

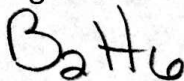
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5. Write the formula for each of the following substances, listing the elements in the order given:

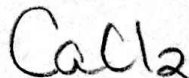
- a. A molecule containing one nitrogen atom and three hydrogen atoms.



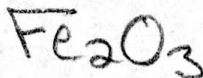
- b. A molecule containing two boron atoms and six hydrogen atoms.



- c. A compound containing one calcium atom for every two chlorine atoms.



- d. A compound containing two iron atoms for every three oxygen atoms.



- e. A molecule containing three hydrogen atoms, one phosphorous atom and four oxygen atoms.



6. Indicate how many atoms of each element are present in the samples indicated below.

- a. 1 molecule of CH_4

1 atom of carbon 4 atoms of hydrogen

- b. 1 molecule of O_2

2 atoms of oxygen

- c. 1 formula unit of Li_2S

2 atoms of lithium 1 atom of sulfur

- d. 3 molecules of PCl_3

3 atoms of phosphorous 9 atoms of chlorine

- e. 2 molecules of Fe_3N_2

6 atoms of iron 4 atoms of nitrogen

- f. 3 HCl

3 atoms of hydrogen 3 atoms of chlorine

- g. 4 K_2O

8 atoms of potassium 4 atoms of oxygen