Elements combine to form compounds. (pp. 41 – 45, Chemical Interactions)

Name _____ Date _____ Hour _____

Answer the questions using complete sentences!

1. How do the properties of a compound compare with the properties of the elements that make it?

2. What is a **chemical formula**?

3. What is a **subscript**?

4. Why is the ratio of atoms in a chemical formula so important?

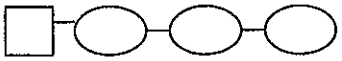
5. How many atoms are in a compound represented by the formula $C_{12}H_{22}O_{11}$?

6. What are the chemical formulas for water and hydrogen peroxide?

7. How might you distinguish between hydrogen peroxide and water?

8. A chemist analyzes two compounds and finds that they both contain only carbon and oxygen. The two compounds, however, have different properties. How can two compounds made from the same elements be different?

List the type and number of atoms for each chemical formula. Then, draw a model for each chemical formula and tell whether the substance is an element or a compound. Use a periodic table to help. The first one has been done for you.

	List of Atoms	Diagram	Element, Compound?
Ammonia NH_3	**1 – Nitrogen** **3 - Hydrogen**		**compound**
Aspirin $C_9H_8O_4$			
Sand SiO_2			
Rust Fe_2O_3			
Au			
Glucose $C_6H_{12}O_6$			
Water H_2O			
Pb			
Baking Soda $NaHCO_3$			
Oxygen O_2			

Name _____ Period _____ Date _____

SECTION 2.1 ELEMENTS COMBINE TO FORM COMPOUNDS.

Reading Study Guide B

BIG IDEA The properties of compounds depend on their atoms and chemical bonds.

KEY CONCEPT Elements combine to form compounds.

Review

Atoms react with different atoms to form compounds.

Take Notes

I. Compounds have different properties from the elements that make them. (p. 41)

1. Complete the following sentences.

a. A compound is a substance made of atoms of _____.

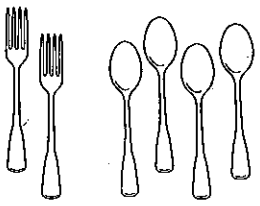
b. In a compound, atoms are held together by _____.

c. A compound's properties are often very _____ from those of the elements that make it up.

d. A compound's properties depend on the _____ it contains and how they are _____.

II. Atoms combine in predictable numbers. (p. 42)

2. Below each pair of objects, write the ratio of the objects on the left to the objects on the right.



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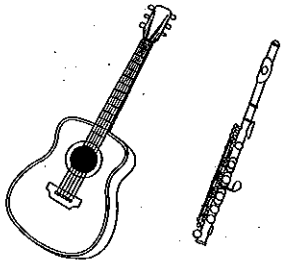

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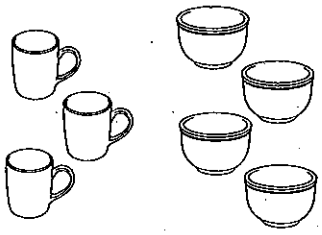

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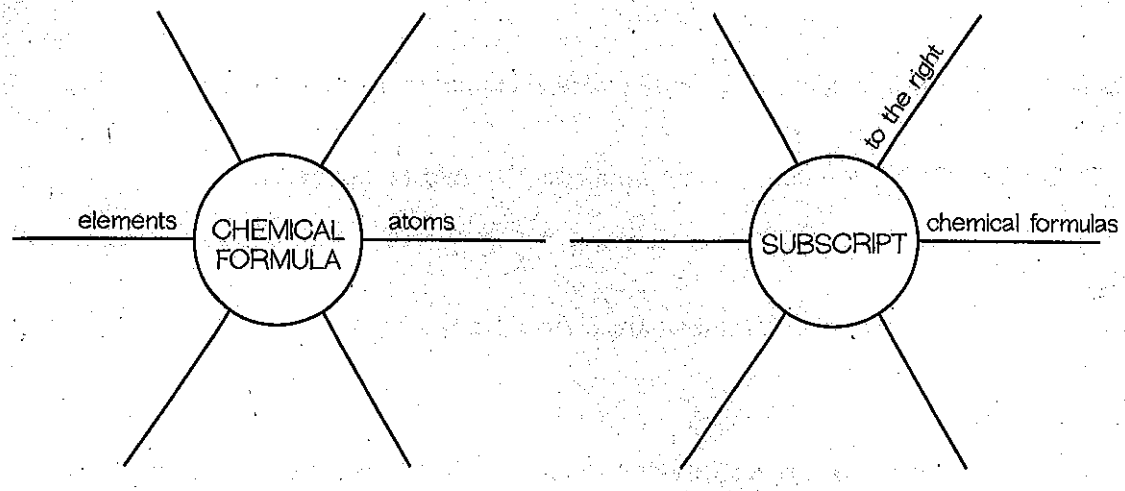
Name _____ Period _____ Date _____

A. Chemical Formulas (p. 43)

3. Fill in the description wheels for *chemical formula* and *subscript*.



4. Ammonia is a compound formed from three hydrogen atoms and one nitrogen atom. Follow the steps for writing its chemical formula.

1. Find the symbols _____.
2. Use a subscript _____.
3. Use no subscript _____.
4. The formula is _____.

B. Same Elements, Different Compounds (p. 44)

5. Write the chemical formulas for two compounds that have the same elements in different ratios.

_____