Name_____Date_____Hour_____

Guided Reading Chapter 18-1 Stability in Bonding

1. Define the following key terms
    a. Compound
    b. Chemical formula
    c. Chemical bond
2. Why do atoms form compounds?

3. Examine figure 1, what color is pure copper? What color is pure sulfur? What color is created when the two elements combine to form copper sulfate?

4. Examine figure 2, what color is potassium? What color is iodine? What color is created when the two elements combine to form potassium iodide?

5. Think about your answers for questions 3 and 4. Complete the following statement.

    The properties of a compound are _____ than the properties of the elements that were used to create the compound.

6. Describe what a chemical formula shows you.

7. Examine Table 1, pg 553, using the periodic table to help, identify which elements are involved in each of the following compounds

    a. Sucrose:

    b. Sulfuric Acid:

    c. Acetic Acid:

8. Why are the noble gases unusually stable?

9. Examine figure 3, How many valence (outer) electrons do the elements of group 13 have? How about group 16, group 18?

10. What do the 'dots' in electron dot diagrams represent?

11. When is an atom considered stable? Which two elements are stable with just two outer electrons? How many outer electrons does everyone else want to have?

12. How do atoms with unstable outer energy levels achieve stability?

13. Examine figure 5 and figure 6, why does sodium transfer 1 electron to chlorine? Why does oxygen need 2 hydrogen atoms to share with?

14. What connection is formed when atoms gain, lose, and/or share electrons?

15. Examine the section review, determine if the following statements are true or false.

    a. A chemical formula tells us only the elements that are involved. _____

    b. A chemical bond forms between two atoms in a compound. _____

    c. Electron dot diagrams show us all the electrons in an element. _____

    d. Most atoms only need two more outer electrons to be stable. _____

    e. To gain stability atoms can gain, share or lose valence electrons. _____