IONIC COVALENT BONDING WEBQUEST

IONIC BONDING

WEBSITE 1: http://visionlearning.com/en/library/Chemistry/1/Chemical-Bonding/55

1. Approximately how many elements are represented on the periodic table?
_____

2. What accounts for the fact that there are far more substances than are listed on the periodic table?

3. "Formed when two or more _____ chemically bond together, the resulting _____is unique both _____ and _____ from its parent atoms.

4. What compound forms during the reaction between elemental sodium and elemental chlorine?
   Name: _____
   Formula: _____

5. List four facts related to G.N. Lewis:

6. Explain the behavior of electrons in ionic bonding.

7. In the process of either _____ or _____ negatively charged _____, the reacting atoms form _____.

8. In the reaction between sodium and chlorine, which atom loses an electron? _____ Which atom gains an electron? _____

9. After transferring the electron, which ion is negatively charged? _____ Why is the ion negatively charged? _____ Write the symbol for the negative ion: _____-

10. After transferring the electron, which ion is positively charged? _____
Why is the ion positively charg_____
Write the symbol for the positive ion: _____

11. How does the sodium atom contrast to the sodium ion? (charge, size)

12. How does the chlorine atom contrast to the chlorine ion? (charge, size)

13. List six features that are common to ionic compounds.

14. Summarize the explanation for the reason why ionic compounds are solids.

15. What physical property results from ionic compounds forming crystals?

16. Explain the behavior of electrons in covalent bonding.

17. What causes covalent bonding to occur rather than ionic bonding?

18. Among what type of elements does covalent bonding tend to occur?

19. Explain one difference between ionic compounds and covalent molecules.

20. How many electrons are necessary to form a single bond?

21. How many electrons form a double bond? _____

Triple bond? _____

22. What purpose do Lewis dot structures serve?

23. How are Lewis structures written?

24. Using the periodic table below, write the Lewis dot structures for the first 18 elements. (Complete on a copy paper)

1. "Questions & Quizzes"
    1. Click on http://www.softschools.com/quizzes/chemistry/ionic_bonding/quiz557.html
    2. Take the quiz.
    3. Record your results here: _____

WEBSITE 2: http://www.ewart.org.uk/science/structures/str14.htm

1. Ionic bonding occurs when atoms gain or lose _____. Most atoms want _____ electrons in their outside shells, but a hydrogen atom wants only _____ electrons. Carbon is an atom with a total of _____ electrons. This means that it has _____ electrons in its outside shell.
2. "Answer these questions"
    1. Select the best answer fro numbers 1-10
    2. Record your score here: _____

PROPERTIES OF MOLECULAR BONDS

WEBSITE 3: **http://www.chemguide.co.uk/atoms/structures/molecular.html**

The physical properties of substances vary with the type of intermolecular attractions. The intermolecular attractions are called hydrogen bonding or Van der Waal forces.

1. Physical properties are governed by the _____forces.

2. Molecular substances tend to be _____, _____ or low melting point _____, because the intermolecular forces of attraction are comparatively weak.

3. Most molecular substances are _____(or only very sparingly soluble) in water.

4. Molecular substances are often soluble in _____solvents.
Organic solvents are also molecular – Like substances dissolve like substances.

5. Molecular substances won't conduct_____.

COVALENT BONDS

WEBSITE 4: http://www.teachersdomain.org/asset/lsps07_int_covalentbond/
(You must click on the box and "interact" with the picture)

1. If an atom, such as hydrogen, is able to form a covalent bond, describe what happens when the electron shells of two atoms overlap:

   A. What happens when the two atoms are fairly close?

   B. What happens when the two atoms get even closer?

2. Are the atoms really "sharing" electrons? Explain.

3. What type of atoms form covalent bonds?

4. Draw a graph showing the change in potential energy when atoms form covalent bonds. Make sure you can discuss what is actually happening. (Do this on a separate sheet of paper).

5. What happens to the stability of atoms when they form covalent bonds?

6. A line can be used to represent a covalent bond between two atoms. Diagram pairs of atoms that can form single, double, and triple bonds.

7. Can every atom form each of these kinds of bonds?

8. List the steps in naming covalent compounds.

9. Write the prefix for each of the following numbers:

1= 4=

2= 5=

3= 6=

10. Give the names for the following covalent compounds:

N_2O _____

NO_2 _____

N_2O_4 _____

N_2O_3 _____

NO ----_____

11. Write the formulas for the following covalent compounds:

Disulfur dichloride _____

Sulfur dioxide _____

Disulfur trioxide _____

Disulfur monoxide _____

Sulfur trioxide _____

Write a Summary of the webquest: