

Name: _____

Sci # _____

COVALENT BOND WEBQUEST

DIRECTIONS: Answer the following by going to the notes website. You can go to Mrs. Slowiak's website and use the links or type in the addresses for each section if needed.

Activity #1- Introduction to Covalent Bonding

Open [Chemical Bonding](http://www.visionlearning.com/library/module_viewer.php?mid=55). Scroll down to the heading "Covalent Bonding." OR (http://www.visionlearning.com/library/module_viewer.php?mid=55)

1. As opposed to _____ bonding in which a complete transfer of electrons occur, _____ bonding occurs when two or more elements _____ electrons. Covalent bonding occurs because the atoms in the compound have a similar tendency for electrons (generally to _____ electrons). This most commonly occurs when two _____ bond together. Because both of the nonmetals will want to _____ electrons, the elements involved will share electrons in an effort to _____ their valence shells.

2. How many valence electrons are in one atom of hydrogen?

3. How many valence electrons does hydrogen need to have a full first shell?

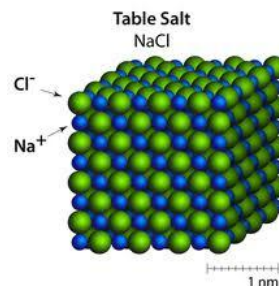
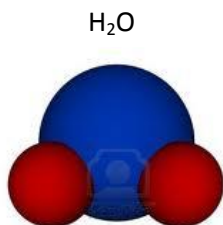
4. How does the hydrogen atom "pick up" another electron?

5. What compound does hydrogen form?

6. How do hydrogen atoms make a covalent bond?

7. Visit the simulation, [Covalent bonding between hydrogen atoms](http://www.visionlearning.com/library/flash_viewer.php?oid=1348&mid=55). OR http://www.visionlearning.com/library/flash_viewer.php?oid=1348&mid=55
Describe or draw what you see.

8. Label the substances below as "ionic" or "covalent".



Activity #2- Introduction to Lewis Structures

1. Go to [Lewis Structures \(electron dot diagrams\)](http://www.usetute.com.au/lewisstr.html) OR <http://www.usetute.com.au/lewisstr.html> Fill in the chart.

Number of valence Electrons	1	2	3	4	5	6	7	8
Example	Family 1 Hydrogen	Family 2 Beryllium	Family 13 Boron	Family 14 Carbon	Family 15 Nitrogen	Family 16 Oxygen	Family 17 (Halogens) Fluorine	Family 18 Noble gases (not He)
Lewis dot diagram	H [•]							

2. Write the Lewis structure for an atom of each of the following elements. NOTE: You must look up the group # on the periodic table to do this.

Element	Lewis structure	Element	Lewis structure	Element	Lewis structure	Element	Lewis structure
Barium		Sulfur		Silicon		Arsenic	
Xenon		Rubidium		Indium		Bromine	

Activity #5 - Naming Covalent Compounds

Open [Naming Covalent Compounds](http://dl.clackamas.cc.or.us/ch104-09/naming1.htm) OR <http://dl.clackamas.cc.or.us/ch104-09/naming1.htm>

Simple covalent compounds are generally named by using prefixes to indicate how many atoms of each element are shown in the formula. Also, the ending of the last (most negative) element is changed to -ide.

1. When is the **mono-** prefix not used to show one atom of an element?

1	
2	
3	
4	
5	
6	

2. When do you drop the “o” and “a” endings of these prefixes?

3. How do you know which element to put first in the name?

4. Name the following compounds.

a. PH_3 _____

b. CO _____

c. HI _____

d. N_2O_3 _____

e. Si_2Br_6 _____

f. SCl_4 _____

g. NF_3 _____

5. Write the formulas for the following covalent compounds.

a. antimony tribromide _____

b. hexaboron monosilicide _____

c. chlorine dioxide _____

d. hydrogen iodide _____

e. iodine pentafluoride _____

f. dinitrogen trioxide _____

h. phosphorus triiodide _____

7. Open [Nomenclature](http://chemed.chem.purdue.edu/genchem/topicreview/bp/ch2/names.html) or (<http://chemed.chem.purdue.edu/genchem/topicreview/bp/ch2/names.html>).

What are the common names of:

a. H_2O _____

b. NH_3 _____

c. CH_4 _____