**Chemistry**

**Chapters 8 and 9: Bonding ~~and Naming~~**

# H/RChemistry1819

**You should be able to... answer 12-15 MC questions, several matching questions, and draw correct Lewis dot structures of atoms, ions, molecules with their proper shapes using their steric numbers including determining their polarity (polar, nonpolar, ion). In addition answer several questions regarding properties of solid lab for metallic, ionic, covalent and network covalent bonds.**

* Use the periodic table to find the number of valence electrons in an atom
* Use the periodic table to determine the charge on an ion
* Describe the general nature of the chemical bond and its relationship to valence electrons
* Compare/contrast ionic, metallic and covalent **bonding** (including covalent networks) (Use the Properties of Solids Lab to help you)
* Compare and contrast ionic, metallic and covalent **compounds** (Use the Properties of Solids Lab to help you)
* Relate the type of **bonding** to the **properties** of the resulting **compounds**
* ~~Write the chemical formula of a binary (= 2 parts) ionic compound given the ions, and vice versa~~
* ~~Write the chemical formula of an ionic compound when given the name of the compound, vice versa~~
* Draw electron dot diagrams (Lewis structures) of the representative (main-block, s- and p-blocks) elements
* Use dot diagrams (Lewis structures) to represent ionic bonding
* Use dot diagrams (Lewis structures) to represent covalent bonding in molecules and polyatomic ions
* Predict the formation of single, double, and triple bonds
* ~~Compare bond length and bond strength in single, double, and triple bonds~~
* ~~Name a molecular compound when given the formula of the compound, and vice versa~~
* ~~Name acids when given the formula, and vice versa~~
* Use VSEPR theory to describe the shapes of simple covalently bonded molecules (Steric numbers)
* Compare the structure and properties of polar and nonpolar molecules (molecular shapes)
* Honors: Use electronegativity values to determine whether a bond is nonpolar covalent/ polar covalent/ ionic
* Honors: Use the following parameters for nonpolar, polar and ionic compounds:

</= 0.4 = NP, </= 1.7 = polar, > 1.7 = ionic

* Honors: Use VSEPR theory to describe the shapes of COMPLEX covalently bonded molecules (Steric numbers and their resulting shapes, bonding pairs, lone pairs & polarity of all possible shapes with steric numbers 2-6)
* ~~Account for the nature and effects of London (dispersion) forces, dipole forces and hydrogen bonding (intermolecular forces)~~