Lesson Plans for October 5th – October 18th

AP Chemistry 2011-2012

Ms. Diane Paskowski

***007 - Chemical Bond***

**Massachusetts Science Curriculum Frameworks**

5.3 Use the mole concept to determine number of particles and molar mass for elements and compounds.

4.1 Explain how atoms combine to form compounds through both ionic and covalent bonding. Predict chemical formulas based on the number of valence electrons.

4.2 Draw Lewis dot structures for simple molecules and ionic compounds.

4.3 Use electronegativity to explain the difference between polar and nonpolar covalent bonds.

4.4 Use valence-shell electron-pair repulsion theory (VSEPR) to predict the molecular geometry (linear, trigonal planar, and tetrahedral) of simple molecules.

**College Board AP Chemistry Curriculum Standards**

C1 – The course provides instruction in five content areas of which one is the Structure of Matter (Atomic Theory and Atomic Structure, Chemical Bonding).

**Essential Questions**

* How do we use mass (weight) to determine the number of particles in a sample?
* Why do atoms form chemical bonds and how do scientists predict the type of bond formed?
* What is the relationship between bond type and geometry of a molecule to its physical and chemical properties?

Wednesday, October 5th

Lecture/discussion/problems/activity: Defining and calculating average atomic mass and % abundance of isotopes. Activity and practice problems. Determining average M&M mass.

Thursday, October 6th

Lecture/discussion/problems: Start discussion of bonding – PowerPoint presentation on Covalent and ionic bond, animations on the three types of bonds, energy considerations, compare and contrast ionic and covalent, patterns of electronegativity and effective nuclear charge.

Friday, October 7th

Lecture/discussion/demonstration: Ionic - Predicting formulas of ionic compounds, lattice energy considerations, Lewis structures and crystal lattices

\*\*\*Assessment on Stoichiometry of elements

Wednesday, October 12th

Lecture/discussion/ demonstration/lab activity: Covalent compounds, bonding models, properties. Compare and contrast properties of ionic and covalent compounds.

\*\*\*Quick quiz on ionic compounds ( period 6 only )

Thursday, October 13th

Lecture/discussion/PowerPoint: Molecules, polarity, geometric shapes, VSEPR theory. Practice problems, drawing and interpreting, making 3D models

Friday, October 14th

Lecture/Discussion/Activity: More practice on VSEPR and geometry of molecules. Discuss and practice shape and polarity determination using models. Practice AP questions

Tuesday, October 18th \*\*\* Assessment on Chapter 8: Bonding General Concepts \*\*\*