AP Chemistry
Summer Review Assignment
Dr. Julie Baker

Hello and welcome to AP Chemistry! This assignment is to help you review some of the material you learned in your first year of chemistry, and to allow us to begin right away with new material when the school year begins. Because there is so much material to review and discuss for AP Chemistry, we need to start early. **Please read the following information carefully. Email me during the summer at home at jbaker@johncarroll.org if you have questions.**

1. Read chapters 1, 2, and 3 in the AP Chemistry textbook. It would be a good idea to take notes while you read.

2. The following problems are to help you study. ***They will be collected and graded***, but I will be glad to go over any problems with you.

   Ch. 1: (starting on p.33a) # 34, 35, 37, 40, 41, 42, 45, 71, 82, 86, 87, 93, 101, 112, 131
   Ch. 2: (starting on p.66) # 67, 68, 71, 73, 81, 93, 94, 97, 98, 102
   Ch. 3: (starting on p.114) # 40, 46, 48, 56, 58, 62, 64, 77, 79, 89, 98, 108, 111, 115, 124, 136, 142

   - Don't wait to do these problems the night before class begins! This will take you a while to do!!
   - **If the problem requires you to do some work to get the answer (examples: unit conversions, percent composition problems, empirical formula problems, stoichiometry problems), you need to show work for that problem. Just writing down an answer for these type of problems will *NOT* earn you credit.**

3. Study for a test on these three chapters. **The test will be the second week of class.** This will give us time to go over introductory material and to review some of the first three chapters in class.

Topics on the Test

- **Units of measurement/SI/temperature:** the prefixes pico-, nano-, micro-, milli-, centi-, deci-, kilo- (their meaning, symbols, and how to convert between them); meter, liter, gram; converting between cubic units (ex. cm^3) and liters; converting between Celsius and Kelvin (NOT Fahrenheit, even though the book discusses it)
- **Significant figures:** knowing how many are in a measurement and the rules for determining the number of sig figs in a calculation answer (both multiplication/division rule and addition/subtraction rule)
- **Density**
- **Percent error**
- **Protons, electrons, neutrons:** determining how many of each are in an atom or an ion

- **Isotopes and designating an isotope:** (ex. $^{14}_{6}C$ or carbon-14)
- **Basic information on the periodic table:** family, group, period, numbering of groups, numbering of periods, alkali metals, alkaline earth metals, transition metals, inner transition metals, representative elements, halogens, noble gases, metals, nonmetals, lanthanide series, actinide series
- **Names and formulas:** ionic compounds, molecular compounds, acids
- **Molar mass and mole calculations:** grams, moles, liters of a gas at STP, atoms, molecules, formula units, ions
- **Percent composition calculations**
- **Empirical and molecular formula calculations**
- **Writing and balancing equations:** including the appropriate symbols
- **Stoichiometry:** stoichiometric calculations where you know the limiting reagent and excess reagent; stoichiometric calculations where you must determine the limiting reagent and excess reagent; percent yield calculations

<u>Additional Information</u>

- You will be given a periodic table to use during the test.
- The first week of class, you will be able to ask any questions you need to about the information in chapters 1, 2, and 3.

Doing this work ahead of time will give us more time at the end of the year to review everything before the AP exam (and hopefully help you to make a 5 on the exam!).

If you have any questions or concerns after you have read this assignment or as you are doing the work, please email me at jbaker@johncarroll.org.

Enjoy your summer!

Dr. Julie Baker