Welcome to Advanced Placement Chemistry!

Summer Assignment

Please read through this entire sheet before starting the assignment.

AP Chemistry is a fast-paced course. In order to have time to cover all the topics and to spend time reviewing problems in class, it is important that you start the year with a good understanding of Chemistry 1 topics. We do not have time to completely review everything you learned before. You are therefore responsible for reviewing and creating 4 study guides as follows:

General Study Guide Instructions

- Each study guide should fit on **one** 8.5 x 11 sheet of paper (you can use both sides if necessary)
- You may type or hand write, but it must be neat and concise.
- You may use your notes from Chemistry 1 and/or other resources such as those found online. However, you must put the information in your own words. **Copying, or cutting and pasting information from other sources (including other students) will result in a zero.**
- **All assignments are due the first day of class and will be for a class grade.**
- It is strongly recommended that you set aside time to work through these assignments gradually over the Summer and do NOT leave them until a few days before school starts.

Study Guide 1: Math, Measurement, and Moles.

Your study guide should include all of the following:

- Units of metric measurement, their abbreviations and what they measure (ex: mass – grams (g))
- Metric prefixes and examples of conversions (Ex: converting cm to km)
- Definitions and examples of precision and accuracy.
- Rules for determining significant figures with examples.
- Density formula and example.
- Mole problems and examples– how to calculate molar mass, percent composition, empirical formula and molecular formula, and how to perform mole conversions (mole-mass and mole-particle).

Study Guide 2: Classification and Properties of Matter.

Your study guide should include all of the following:

- States of matter with a description of particle arrangement, particle movement, and energy of the particles in each state. A particle diagram depicting a substance in each state should also be included.
- Definitions and examples for the following:
  Matter
  Pure substance
  Element
  Compound
  Mixture
    Heterogeneous mixture
    Homogeneous mixture/ solution
    Methods to separate mixtures (such as filtration)
  Physical change
  Chemical change
    Evidence for chemical reactions
    How to write a balanced chemical equation.

Study Guide 3: Development of Atomic Theory.

Your study guide should include the following:

- The Law of Conservation of Mass
- The Law of Definite Proportions
- The Law of Multiple Proportions
- The following scientists with a brief description of their main contribution to our understanding of atomic theory and their experiments (if appropriate).

Dalton	Bohr	Heisenberg
J.J. Thomson	Planck	Pauli.
Rutherford	DeBroglie	
Millikan	Schroedinger	

Study Guide 4: Naming and Formulas.

Your study guide should include the following:

- How to name the following types of compounds, with at least one example of each.

  Ionic

  Make sure you include

  Naming of polyatomic ions

  Roman numerals for transition metals

  Hydrates

  Acids

  Covalent