

To: Students Enrolled in Advanced Placement Chemistry

Summer Assignment for AP Chemistry 2019-2020

Introduction

Welcome to AP chemistry! As students in this course, you are among a small select group of students, who have elected to make a commitment to learning chemistry at a first year college level. Students who have completed this course to the best of their abilities have overwhelmingly expressed satisfaction with the depth of chemistry principles learned and have provided feedback from their college chemistry experience that they were very well prepared from this high school experience.

All students in this course will be expected to learn the application principles of thermochemistry, stoichiometry, reaction kinetics, thermodynamics, gas equilibrium, acid/base equilibrium, electrochemistry, atomic theory, intermolecular forces, bonding theory, and gas laws. AP chemistry students will be required to also to apply these principles to integrated problems (with more than one concept being applied simultaneously).

Homework

Homework will be assigned often and one unit at a time. Some homework will be collected and some will be self-graded. A lack of continuous effort on homework will result in you being behind in this course. It will be very difficult to catch up if you fall behind. You need to plan out your week accordingly and study groups are encouraged, but copying will only inhibit learning.

AP Chemistry is equivalent to a college course, which is fast-paced and in-depth. You will be treated as college students and will be expected to take responsibility for your own independent learning. As in college, there will be reading required for every unit and this reading is necessary for full understanding of complex concepts.

Fortunately, the textbook is very well written and reading this text will only increase your understanding beyond classroom lectures and discussions. Video tutorials will also be assigned to watch on your own time.

AP Chemistry Exam and College Credit

This course is modeled after the AP Chemistry curriculum written by the College Board as well as the Chemistry I curriculum from Southern New Hampshire University. We will be taking the AP Chemistry Exam in the first week of May, 2020. To receive college credit, students must research respective colleges and universities to learn about their policies. Three out of five is considered “passing”, but many colleges require a 4+ to receive college credits. Timberlane also offers an opportunity for AP chemistry students to earn college credit as part of a dual enrollment with SNHU. A representative from SNHU will visit us in September to explain all the details. (\$250 will cover Chemistry I, Chem I Lab, Chemistry II, and Chem II Lab)

Summer Assignment

A summer assignment will be given for foundational units of chemistry as well as one at-home lab. The units covered for the summer assignment will be chapters 1-4 in the AP chemistry textbook and problem sets in the back of each chapter.

Resources and Materials

1. Scientific calculator
2. Textbook (Brown, LeMay. 2015) (Go to library to pick up your book before summer)
3. Lab notebook
4. 3-inch binder (Min 2.0")
 - a. Sections/Dividers can be helpful
5. (optional) personal safety goggles

Communication

I will send email to school assigned google email accounts. We will also be using Google Classroom for all scheduling of homework assignments and announcements.

AP Chemistry Summer Assignments (Due at second class meeting September, 2019) From AP Chemistry Textbook-

1. Read Chapter 1 and do #(11, 18, 38, 40, 42, 44, 54)
2. Read Chapter 2 and do #(22, 24, 26, 30, 46, 58, 60, 62, 66, 70, 74)
3. Read Chapter 3 and do #(12, 16, 24, 26, 36, 38, 40, 46, 48, 50, 64, 78)
4. Read Chapter 4 and do #(6, 16, 18, 26, 32, 38, 40, 52, 60, 62, 68, 70, 80, 86)
5. Lab Percent NaHCO_3 in an Alka Seltzer tablet (Description is attached)

I may hold extra help sessions in late August for anyone having difficulty with the summer assignment(s) and for anyone who needs somewhere to complete there summer lab. I will email the group more details in the first week of August.

Please feel free to email me at any time for any questions that you may have.

Mrs. Rogers

monica.rogers@[timberlane.net](mailto:monica.rogers@timberlane.net)

Percent Composition Lab

Alka Seltzer tablets are an antacid medication used to settle our stomachs. The reaction proceeds independently when placed in water.

Goal: Experimentally determine the mass percent of sodium bicarbonate in an over-the-counter Alka Seltzer tablet. You are to use any materials that you have in your household to obtain the data that you think will help you determine the percent composition.

Safety: You are to use no chemicals for this lab other than an Alka Seltzer tablet and water. Please do not use any source of heat or react your tablet in a rigid container that can burst when the pressure increases.

Required Components of the Lab Report

1. Background – A detailed explanation of the chemical reactions that occur. Be careful, there are two reactions. (10%)
2. Hypothesis – The theoretical mass percent can be researched and used as the hypothesis. (5%)
3. Materials – List all equipment used during the experiment (5%)
4. Procedure – Step-by-step listing of all actions performed during the experiments. List some observations that you made/seen during the experiments. (15%)
5. Data – Create a data table that can show what data was collected during the experiments. All measured values must have appropriate units. **(Must be done in ink)** (10%)
6. Calculations – all calculations are listed with appropriate work and units (15%)
7. Data Analysis – Three trials must be completed. Calculate average and percent error of that average compared to the theoretical mass percent. (10%)
8. Error Analysis – Propose explanation(s) for any deviation from the accepted value (10%)
9. Conclusion – Summarize the results of the experiment. (10%)
10. Neatness – Lab report is easily readable and shows pride and care. Lab report done in a composition book to be used throughout the year. (10%)

Students may work together, but a separate lab report must be handed in by each student and all writing must be individual work with original thoughts and conclusions.