



Hanford High School

May 30, 2018

Dear Future AP Chemistry Student,

Welcome to Advanced Placement Chemistry! I look forward to our journey to deepen your knowledge and understanding of chemistry. AP Chemistry is a college level science class that is challenging, rigorous and intense. Through discipline, hard work and good problem solving skills it will also be very rewarding.

The jump from General Chemistry to AP Chemistry is quite significant. This packet contains materials that will help bridge the gap to AP Chemistry. Doing this work will better prepare you to dive into the course content when the new school year begins. Much of the work is an extension of work already done in General Chemistry, but there is some new content. There will be a quiz over the memorization on the first day of school. We will review the summer work during the first week of class and have a test over this content during the second week of school. There is no need to master everything this summer. The idea is that the reading and notes are done and there is evidence of the questions being attempted.

Packet Contents:

- Periodic Table: A copy of the periodic table that you get to use on the AP exam and on class quizzes and tests. Notice that only the symbol of the element appears. You will need to learn the chemical names and symbols.
- The Common Polyatomic Ions: There is a list of ions as well as some information about the historic names of some of these ions. The formulas, charges and names of these ions need to be memorized before the first day of class. They will be used in class and on the AP exam.
- Solubility Rules: Same as above. Like the polyatomic ions, solubility rules are required knowledge for the AP test. There won't be questions specifically on them, but you will need to know them to answer other questions.
- Chapters 1-3, 21.4, 22 from "Chemistry" 8th edition by Zumdahl, Zumdahl: Read the chapters and take notes. Complete the questions provided. These questions are simply for practice working with the material. Make sure you either know how to answer these problem types or arrive the first day with specific questions you need help with.

IMPORTANT: Please send me an email (samuel.koch@rsd.edu) with your email address ASAP. Use an email that you check regularly. In mid-August I will send out an email with information about a work day prior to the start of school. This will be an opportunity to meet everybody in the class, do any class set-up and maybe go over some questions from the summer packet. YES, attendance at this "work day" will earn extra credit!

I am looking forward to working with you this fall.

Mr. Koch

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<https://sites.google.com/site/apchem2606/>

AP Chemistry Textbook Assignment

“Chemistry” 8th edition by Zumdahl, Zumdahl text Chapters 1 “Chemical Foundations”, Chapter 2 “Atoms, Molecules and Ions”, Chapter 3 “Stoichiometry”, Chapter 21.4 “Isomerism”, 22 “Organic and Biological Molecules”; Read the chapters and take notes. Complete the questions provided.

The class website has some resources (text PowerPoints etc) on the links page.

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Chapters 1 “Chemical Foundations”

1.2 The Scientific Method - Question: #19

1.3 Units of Measure - Questions: #23, 39

1.4 Uncertainty in Measure - Questions: #11, 22

1.5 Significant Figures and Calculations - Questions: #29, 30, 31, 33, 34, 37 (From here on, use significant figures in all calculations.)

1.6 Dimensional Analysis - Questions: #41, 43

1.7 Temperature - Question: #55

1.8 Density - Questions: #61, 88

1.9 Classification of Matter - Questions: #28, 73, 90

Chapter 2 “Atoms, Molecules and Ions”

2.1 Early History of Chemistry - No questions, but know the information.

2.2 Fundamental Chemical Laws - Questions #17, 19, 31

2.3 Dalton’s Atomic Theory - Question #20

2.4 Early Experiments to Characterize the Atom - Questions #21, 41

2.5 The Modern View of Atomic Structure: An Introduction - Question #22

2.6 Molecules and Ions - Questions #28, 29, 59, 61

2.7 An Introduction to the Periodic Table - Questions #47, 49

2.8 Naming Simple Compounds - Questions #63, 65, 71, 75, 77

Chapter 3 “Stoichiometry”

3.1 Counting by Weight - No questions, but know the information.

3.2 Atomic Masses - Questions #33, 34, 39

3.3 The Mole - Questions #41, 42, 43

3.4 Molar Mass - Questions #26, 47

3.5 Learning to Solve Problems - Questions #49, 51, 55, 57, 64 (It is important to learn and use conceptual problem solving and dimensional analysis to solve problems.)

3.6 Percent Composition of Compounds - Questions #27, 67, 70, 73

3.7 Determining the Formula of a Compound - Questions #75, 76

3.8 Chemical Equations - Questions #28

3.9 Balancing Chemical Equations - Questions #89, 91, 94, 95

3.10 Stoichiometric Calculations: Amounts of Reactants and Products - Questions #99, 101

3.11 The Concept of Limiting Reagent - Questions #29, 30, 31, 107, 114, 119

Chapter 21.4 “Isomerism”

21.4 Isomerism – read and take notes

Chapter 22 “Organic and Biological Molecules”

22.1 Alkanes: Saturated Hydrocarbons – read and take notes, Bonus Point Questions #1, 5, 13, 17

22.2 Alkenes and Alkynes – read and take notes, Bonus Point Questions #25, 26, 27, 28

22.3 Aromatic Hydrocarbons – read and take notes, Bonus Point Questions #47