

Objectives: To review basic chemistry concepts and provide a foundation for AP Chemistry.

Background Information:

Chemistry has certain concepts and terminology that are basic to understanding information in the course. AP Chemistry is a course that includes information on a variety of topics and expands upon many of the concepts that are covered in general chemistry. In doing this work over the course of the summer, students will be able to determine if AP Chemistry is a course in which they would like to be enrolled in the upcoming school year.

Due Date: *This entire packet of information is due the first day of school- NO EXCEPTIONS!!*

- Obviously students can work at their own pace over the summer in order to complete the work, but all of the work will need to be completed and turned in on time. The first couple of days of school, students will take a practice AP Chemistry exam to determine where they are starting from at the beginning of the school year. After that, the teacher will discuss the topics of the summer work briefly with the students and answer questions about the problems that were done over the summer. Within the first week to two weeks of school, students will have a test on the information from the summer assignment.

Directions: Complete all of the tasks below. For any math problems, show all work, put a box around the final answer for the problems, and make sure the answer has the correct number of significant figures.

Tasks:

- *Write a paper that is at least 4-5 pages (MLA format, 12 pt. Times New Roman Font, double spaced, etc.)*
 - Several elements from the Periodic Table of Elements are specifically mentioned in the Bible: sulfur, iron, copper, silver, tin, gold, lead, and antimony. As you read through chapters 1-4 in the AP Chemistry textbook make note of the mention and characteristics of these elements and their characteristics.
 - Your paper should include the following:
 - Characteristics and a description of each of the elements (including where they can be found) as they are found in nature
 - What is the context in which the elements are mentioned in the Bible?
 - What characteristics of the elements make them especially suited for the task they are used for in the Bible?
 - Relate information in chapters 1-4 in the textbook to what can be seen in the Bible in relation to these elements.

- *Chapter 1: Chemical Foundations*
 - Read and take detailed notes on the chapter.
 - On a separate sheet of paper, write all of the pertinent equations from this chapter. (You will continue this list for the rest of the chapters as well.)
 - Create a list of the rules for using significant figures. Make sure you have at least two examples for each rule.
 - Define all of the “*key terms*” of the chapter (a complete list of the terms can be found on pages 31-32).
 - Answer the review questions on page 32.
 - Answer the following questions from the end of Chapter 1 on a separate sheet of paper:
 - #1, 3, 12, 18, 26, 27, 29, 35, 43, 47, 59, 64, 71, 83, 90, 109 & 112
 - Answer all of the “*AP Multiple Choice Review Questions*” from the end of chapter 1.
 - Design (and write out) a procedure for an experiment that would show your knowledge of the scientific method and the concepts from chapter 1.
 - Keep in mind that this experiment should be one that you could conduct in the lab at school.

- *Chapter 2: Atoms, Molecules, and Ions*
 - Read and take detailed notes on the chapter.
 - On your list from chapter 1, write all of the pertinent equations from chapter 2.
 - Define all of the “*key terms*” of the chapter (a complete list of the terms can be found on page 71).
 - Answer the review questions on page 72.
 - Answer the following questions from the end of Chapter 2 on a separate sheet of paper (or as a continuation of the questions from chapter 1):
 - # 1, 5, 8, 17, 29, 32, 39, 47, 55, 57, 68, 69, 75, 79, 83, 84, 86, 92, 106, 120, 121, & 122
 - Answer all of the “*AP Multiple Choice Review Questions*” from the end of chapter 2.

- *Chapter 3: Stoichiometry*
 - Read and take detailed notes on the chapter.
 - On your list from the previous chapters, write all of the pertinent equations from chapter 3.
 - Define all of the “*key terms*” of the chapter (a complete list of the terms can be found on page 124).
 - Answer the review questions on page 125.
 - Answer the following questions from the end of Chapter 3 on a separate sheet of paper (or as a continuation of the questions from chapter 2):
 - # 1, 4, 8, 20, 25, 27, 33, 38, 39, 43, 45, 51, 52, 59, 62, 65, 73, 78, 79, 84, 87, 95, 99, 105, 109, 115, 120, 133, 183
 - Answer all of the “*AP Multiple Choice Review Questions*” from the end of chapter 3.

- *Chapter 4: Types of Chemical Reactions and Solution Stoichiometry*
 - Read and take detailed notes on the chapter.
 - On your list from the previous chapters, write all of the pertinent equations from chapter 4.
 - Define all of the “*key terms*” of the chapter (a complete list of the terms can be found on page 177-178).
 - Answer the review questions on page 179.
 - Answer the following questions from the end of Chapter 4 on a separate sheet of paper (or as a continuation of the questions from chapter 1):
 - # 4, 7, 23, 24, 27, 31, 35, 36, 43, 49, 50, 51, 57, 62, 65, 75, 79, 82, 83, 90, 91, 101, 112, 121, &141
 - Answer all of the “*AP Multiple Choice Review Questions*” from the end of chapter 4.