May 13, 2024

Hello,

You are receiving this because you are enrolled in AP Chemistry for the 2024-2025 school year. A good foundation of first year chemistry concepts is crucial to success in AP Chemistry. Please pick up the summer homework packet and check out a textbook from the media center before you leave school for the summer.

You are expected to have mastered the following BEFORE taking the course.

- Classification of matter
- Certain scientific laws like the Laws of Conservation, Multiple Proportions, and Definite Proportions
- SI units and their prefixes
- Significant digit rules for measurements and calculations
- Dimensional Analysis (solving problems with conversion factors)
- Atomic structure
- Periodic table organization
- Basic Chemical nomenclature
- Calculation of empirical and molecular formulas
- Stoichiometry, including limiting reagent, excess yield, and percent yield
- Names, formulas, and charges for common polyatomic ions (list is included in the notes packet)
- Patterns of reactivity for chemical reactions(synthesis, decomposition, combustion, single replacement, double replacement)
- Calculation of molarity of a solution

The textbook for the course is Chemistry: The Central Science, 15th edition, by Brown and LeMay. You will need to check out a textbook before leaving for the summer. A link to a pdf of the previous edition is listed below.

Chemistry_The_Central_Science-_13th_Edition_ebook3000.pdf

The AP Chemistry course is designed to be the equivalent of the general chemistry course usually taken during the first college year. The course content is organized into nine units. Your assignment for the summer is to work through Unit 4: Chemical Reactions. While some of this will be a review of material covered in honors chemistry, there will be new content as well. To cover the material in unit 4, **you will be reading specified pages from the textbook, completing a notes packet, and watching videos to check the work in your notes packet**. I recommend that you work through the packet answering as much as you can on your own first. Then watch the video lessons to check your work and learn about those topics that are new to you. The notes packet videos are divided into 3 parts. I have listed the relevant textbook pages and links for the topics in each part. Some pages cover more than one topic section. Primarily, this unit covers chapter 3 and 4 in the textbook.

Part one: Topics 4.1-4.4 https://www.youtube.com/watch?v=DSdSRVLq3_c

4.1 and 4.4: Introduction for Reactions, pages 10-12
4.2: Net ionic equations, pages 120-127
4.3: Representations of Reactions, pages 90-92, picture diagrams throughout all of chapters 3 and 4

Part two: Topics 4.5-4.6 https://www.youtube.com/watch?v=J1VGcO86EwA

4.5: Stoichiometry, pages 95-97, 103-107
4.6: Introduction to titration, pages 142-152

Part three: Topics 4.7-4.9 https://www.youtube.com/watch?v=Hjrpf4fSwxE

4.7: Types of Chemical Reactions, pages 90-92
4.8: Introduction to Acid-Base Reactions, 128-133
4.9 Oxidation-Reduction Reactions (you may know these as single replacement), 135-142

We will discuss and practice with the Unit 4 Concepts beginning on the first day of class. If you have any questions, please feel free to email me at ewatson@caschools.us