

AP Chemistry Summer Assignment

Summer 2023

Dear Future AP Student and Parents/Guardians:

May 22, 2023

By selecting Advanced Placement Chemistry in the upcoming school year, you have shown your commitment to academic achievement. AP Chemistry is a full year course, designed for highly motivated students who have shown both an interest and an aptitude in chemistry. Because AP Chemistry is comparable to a college undergraduate course in chemistry, much is expected from you in terms of time, energy and independent work.

You should be prepared to spend an average of five hours per week outside of class in preparation for class exams and the AP Chemistry Exam. You are expected to complete individual lab reports, keep a lab notebook, take notes on course content, read recommended textbook passages, and study individually to prepare for exams. Individual homework practice problems, lab reports, and course assessments will be used to determine each marking period grade. To assist your learning in this class, my class website(bit.ly/chemistrybyjohnson) contains recorded lessons for every topic that is covered throughout the year, organized by unit. This can be crucially important if you are falling behind or are frequently absent from class.

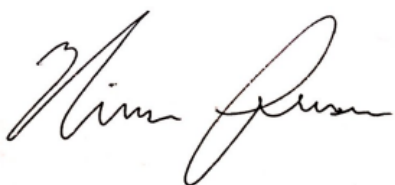
As established by the College Board, the AP Chemistry curriculum is rigorous and demanding. This curriculum includes many mandatory lab experiments which I will make every effort to include. To achieve this, we meet every day out of the 4-day cycle, including one day which is a double lab period. The textbook used is Chemistry by Zumdahl, 10th edition, a book used extensively nationwide. Because the entire text is covered and it is so comprehensive, it is strongly recommended that you purchase a study guide, such as the Princeton Review AP Chemistry book. This will give you summaries for each of the topics, along with additional practice questions.

A summer assignment is given as a review of some of the material in Chemistry or Honors Chemistry. Students are responsible for this work, which is due on the first day of school in September. Failure to turn it in on time results in a 0 for the assignment.

In May of each year, the AP exams are administered. Since college credit may be earned by successful completion of the exam, I would encourage you to participate. College credit is honored by most colleges and universities with a score of a 4 or 5 on the AP Chemistry Exam, but requirements vary from school to school. To comply with the high school's policies, there will also be a final exam in late May, immediately before or following the AP Chemistry Exam.

If you have any questions or concerns, please contact me.

Thank you,



Nicholas Johnson



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General Guidelines:

The various components of the summer assignment are due on the first day back to school. If the entire assignment is not handed in on that day, you will receive a zero. [Click here](#) for a verbal explanation of the project.

For verification that your content was written by a human, **you must use Google Docs and your "Version History" must show development over time.** In other words, the version history can't show all the text copy-pasted in at once. An AI checker may or may not be used to verify that written content is human generated.

Part 1 (Textbook) Format:

Each section of problems should be labeled with the chapter number as a heading. For each problem you are assigned, be sure to include the problem number followed by the hand written answer. All work, formulas, substitutions, conversions, significant figures, units and calculations must be clearly shown. This work must be handwritten and will be collected on paper on the first day of school.

Parts 2 and 3 (Experimental Design / Modeling/Data Analysis) Format:

These responses should be typed on the provided doc and submitted via OnCourse. [Click here](#) or use bit.ly/apcsummeranswers to get a copy of the doc used to submit your answers.

Additional Tips:

- ☐ Read each chapter before you complete the assigned questions. We will skim over these topics very quickly and you will be expected to have a solid background knowledge in them.
- ☐ Email with any serious questions or concerns. I am happy to help wherever possible.
- ☐ Take notes on the chapters you are responsible for working on. Writing things down is a great way to help information sink in and start off the AP Chemistry process.

Have a great summer!!!



Mr. Johnson



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Part 1: Textbook

Read the following chapters and complete each problem as described on the front side of this handout. The textbook used for the summer assignment is a free, online text from Rice University. This WILL NOT be the text we will use for class during the year. Directions for accessing this online text are found below.

Go to <https://openstax.org/details/books/chemistry-2e> and click "View Online". You may be asked to donate money. You can still use the book without donating.

Chapter	Exercises
Chapter 1	#16, 23, 39, 40, 44a-d, 45a-d, 54a-d, 76a-d
Chapter 2	#11, 16, 22, 30, 37a-f, 45, 49, 52, 56
Chapter 3	#10, 12, 16a-d, 22, 24, 26, 33a, 35, 38
Chapter 4	#4c-f, 5a-b, 6a-b, 12, 14

IMPORTANT

The content within these units will not be taught at any point during the AP Chemistry Course. These topics are considered prior knowledge from your Chemistry or Honors Chemistry course. The content within these chapters will be tested in our Unit 1 Assessment given at the end of September.

Part 2: Experimental Design

Design an experiment to collect data that supports the claim that a 1.0 M NaCl solution is a homogeneous mixture. Laboratory equipment for your experiment should be taken from the list below (*You may not need all of the equipment*).

50-mL beakers	100 mL of 1.0 M NaCl(aq)
Volumetric pipets (5 mL, 10 mL and 25 mL)	Stirring rod
Balance	Drying oven
Hot plate	Fume hood

To complete this section you need:

1. A list of detailed procedural steps that could be followed to gather evidence related to the claim
2. A data table that could be used to record the data you would collect
3. A written paragraph explaining how the data would support or refute the claim

Part 3: Modeling and Data Analysis

Read any green highlighted text, examine the provided models, and answer the guided questions in blue text.

