

Welcome to AP Chemistry! I am looking forward to meeting you all this fall. This is the summer assignment for AP Chemistry.

Deadlines: Please make a copy for yourself because I do not have access to Google Classroom yet.

Part I: to be completed by **July 15**. Please add this [page](#) as a bookmark on your computer

Part II: to be completed by **August 25**. Expect a test on the material during the first week or so of school.

I do not have a Canterbury email account yet so, just share anything with my personal email below:

mohmoto.whitfield@gmail.com

Please feel free to email me with any and all questions that you may have (seriously!).

Part I: Tell me about yourself! (Due by July 15)

1. Your name, preferred name to be called, preferred pronouns
2. What grade you will be in this fall.
3. What science courses have you taken so far?
4. Why are you taking AP Chemistry?
5. What are you looking forward to learning in AP Chemistry?
6. What topics/skills are you concerned about in AP Chemistry?
7. What do you think your learning strengths are?
8. What aspects of your learning would you like to strengthen this coming year?

Part II: Chemistry knowledge that you need to keep. You may use any source you like, you may collaborate with friends (note...copying is NOT collaboration, please do not copy, that's just rude), you can work alone. Just let me know what sources/collaborations you used.

Significant figures:

1. When are zeros counted as significant?
2. How do we use significant figures to communicate the precision of the measuring tool that we used?
3. What is the "rule" that we use to determine how many significant figures a calculation should have when.
 - a. Only addition and subtraction have been used.
 - b. Only multiplication and division have been used.
 - c. Compound operations have been used.
 - d. When do you round your answer to the proper number of significant figures?
4. Practice:
 - a. $3.568 + 2.49 - 1.8056 = 4.25$
 - b. $(4.83 * 6.559) / 3.1 = 10$. (or 1.0×10^1)
 - c. $(6.53 - 12.800) / 3.2200 = -1.94$

Dimensional Analysis (with molar mass calculations as well):

Please show all of your work...feel free to hand-write and upload a picture separately or in the doc.

1. Calculate the molar mass of each to three sig figs (significant figures)
 - a. CaO
 - b. Na_3PO_4
 - c. $\text{Cu}(\text{NO}_3)_2$
2. Calculate...
 - a. Moles in 324 g of CaO
 - b. Grams in 4.50×10^{-2} moles of Na_3PO_4
 - c. Grams of needed to make 450 mL of a 3.5×10^{-1} M solution of $\text{Cu}(\text{NO}_3)_2$

Naming:

1. Roman numerals
 - a. When are they needed in a name?
 - b. What do they represent?
 - c. Give three examples of compounds that require roman numerals in the name.
 - d. What are the exceptions to this rule?
2. What does “-ate” usually signify in a polyatomic ion?
3. Prefixes
 - a. When are they needed in a name?
 - b. What do they represent?
 - c. Give three examples of compounds that require prefixes in the name.
 - d. What are the exceptions to this rule?
4. “Ide”
 - a. What kind of compounds always end in “ide”?
 - b. What are the exceptions to this rule?
5. Please memorize the following polyatomic ions (name, formula and charge)
 - a. Ammonium
 - b. Acetate, chlorate, nitrate, hydroxide, peroxide, hydrogen carbonate, cyanide, permanganate
 - c. Carbonate, hydrogen phosphate, chromate, dichromate
 - d. Phosphate

Reactions:

1. Be able to balance equations including (but not limited to) polyatomic ions.
2. Be able to identify reaction types
 - a. Combustion
 - b. composition/synthesis
 - c. Decomposition
 - d. Dissociation
 - e. Single replacement
 - f. Double replacement