

Dear 2021-22 AP Chemistry Student,

We hope you are all having or ready to have a restful summer. In order to hit the ground running when school starts in August, we are requiring that you do a summer assignment. We would imagine that in total it will take about 10 hours but please know that this is just an estimate. Here are the directions – READ VERY CAREFULLY AND THOROUGHLY!

Directions for AP Chem Summer Work

1. Every student must hand in a completed summer work packet. This packet should be handed in to the US Main Office ***no later than 4:00 pm on Monday, August 9.*** *The work will be graded on a right or wrong basis.* Students may work with each other but should not copy another student's work. Be sure to check your email for help sessions that will occur on zoom in late July/early August.
2. There are two main topics you will need to LEARN ON YOUR OWN in order to complete the packet. They are:
 - a. Naming and writing formulas for acids. You should be able to find many websites online to help you with this. ****NOTE ALSO you need to memorize the polyatomic ions that are on the other handout****
 - b. How to find percent composition for a compound along with problems involving empirical and molecular formulas. Again – you can find info online BUT you could also watch this recording of an old class of Ms. Van Liew: <https://drive.google.com/file/d/1xbZntI6AbCA1bmuNiyWf-wNXQPxheY4/view?usp=sharing>
3. We do not require students to have a textbook. We will have a classroom set of books that we will use for reference and homework problems. If there is information we want you to read about, then we will either direct you to a website or ask you to look for it yourself. ***To that end, please look at the ensuing list of topics that we expect you to KNOW/REVIEW by the first day of school.***
4. Feel free to get in touch with us if you have any questions. Our emails are mvanliew@stab.org and aabeardsley@stab.org

Good luck – and work hard! Mrs. Beardsley and Ms. Van Liew

TOPICS TO KNOW (and we mean know WELL!!) FOR START OF SCHOOL

1. General atomic structure and knowledge of the periodic table including knowing ***the names and symbols*** of elements 1-54.
2. History of atomic structure including knowledge/understanding of the following people/experiments: John Dalton and his Atomic Theory and Rutherford's gold foil experiment.
3. Definitions/descriptions of the following terms: atom, molecule, formula unit, cation, anion, atomic number, mass number, isotope, atomic mass, ionic bond, covalent bond, empirical formula, molecular formula, mole, and molar mass.
4. Significant figures – all the rules and how to apply them
5. Conversions – **students should have all metric conversions memorized**
6. Dimensional analysis/Factor Label method (*****this is crucial*****)
7. The differences between chemical and physical properties and changes
8. Nomenclature of compounds (molecular/covalent and ionic) and acids – again – note polyatomic handout
9. MOLES – what they are and how to do calculations with them
10. Writing and balancing chemical reactions
11. Stoichiometry and limiting reactants(*****this is ALSO crucial*****)
12. Determining empirical and molecular formulas