Dear 2020-21 AP Chemistry Student,

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

**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 OR scanned and emailed to me ***no later than 4:00 pm on Monday, August 3.*** *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. I am happy to answer questions about the packet either by email or feel free to give me a call.
2. Every AP Chemistry student should be prepared to take a quiz on naming compounds and acids ***the first day of classes.*** You will need to brush up on/learn the rules for naming acids. This also means that the given list of polyatomic ions needs to be memorized. You will need to know this information all year long, so I would HIGHLY suggest making flashcards.
3. I am not requiring 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 I want you to read about, then I 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 I am expecting you to KNOW by the first day of school.*** You will also need this information in order to do the summer packet. All of these topics should be review from your first year chemistry class. If you would like a textbook to use over the summer, I would be happy to lend you one. There are also A LOT of great websites and videos on youtube that can help – please let me know if you find one that you really like.
4. Feel free to get in touch with me if you have any questions. My email is mvanliew@stab.org and my cell number is (434) 466-2934.

**Good luck – and work hard! Ms. Van Liew**

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

**A.** General atomic structure and knowledge of the periodic table including knowing ***the names and symbols*** of elements 1-54
**B.** History of atomic structure including knowledge/understanding of the following people/experiments: John Dalton and his Atomic Theory, Thomson's cathode ray tube experiments, Millikan's Oil Drop experiment, Rutherford's gold foil experiment
**C.** 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.
**D.** Significant figures – all the rules and how to apply them
**E.** Conversions – **students should have all metric conversions memorized**
**F.** Dimensional analysis/Factor Label method (***this is crucial***)
**G.** The differences between chemical and physical properties and changes
**H.** Nomenclature of both types of compounds (molecular/covalent and ionic) and acids
**I.** MOLES – what they are and how to do calculations with them
**J.** Writing and balancing chemical reactions
**K.** Stoichiometry and limiting reactants(***this is ALSO crucial***)
**L.** Determining empirical and molecular formulas