Summer Assignment for AP Chemistry

Successful completion of the summer assignment is essential to having a good year in AP Chemistry. It serves both as a refresher from the first year Chemistry class as well as demonstrates the rigor of a college level questions. Unit 4 was chosen of the 9 units of study from the College Board program because most concepts are review of your first year Chemistry class.

- Unit 4 is broken into 3 main parts: Basic Review, Stoichiometry Review, Ionic Equations & Electrochemistry Review
- Each part will have assigned questions with due dates of July 1st, July 31st, and Aug 28th.
  Alternate due dates may be arranged individually if vacations or issues arise.
- Answers are provided as a means of knowing if the work is correct. The fully worked problems must be shown in order to receive credit. Photos of work can be emailed to Ms. O'Neill by the deadline. If Teams is available, then uploading to Teams will be the preferred method. Please only use your student email and send to koneill@gmahs.org
- Some optional videos are listed to help with background or set up. If further help is needed, students can email the teacher or by appointment have a discussion in a Teams meeting. Recitations may be scheduled periodically as a drop-in help session over Teams as well.

September School Supplies: several colors of pens, markers, highlighters. One Marble Notebook without any pages removed (any size). Any method of notetaking such as OneNote on computer or notebooks. 2-3 folders and possibly a 3 ring binder to store Unit handouts when completed. Any scientific calculator is acceptable.

Set 1 of 3

Chemistry Review Questions **Due July 1st**. Photos of answers must show full work for credit, since answers have been provided. Optional videos available to help as needed, one video required

Concept	**Problem (chap #.problem #)**	**Optional video, unless stated.**
General Intro Chemical Changes v Physical	none	https://screencast-o-matic.com/u/fr7D/APChemSummerIntro1 https://screencast-o-matic.com/u/fr7D/APChemINTRO2
Significant Figures	1.42 -1.44	https://screencast-o-matic.com/u/fr7D/SigFig-INTRO https://screencast-o-matic.com/u/fr7D/SigFigCalcs
Density & Dimensional Analysis	1.29 1.57	https://screencast-o-matic.com/u/fr7D/DensityCalcs
Naming	2.6	https://screencast-o-matic.com/u/fr7D/APChemNAMING
Balancing equations	3.15	https://screencast-o-matic.com/u/fr7D/Chem8-2-balancing-equations
Periodic Table	2.8	https://screencast-o-matic.com/u/fr7D/MarkingIonsPtableHChem
Mole Conversions: Molar Mass, Percent Mass, Avogadro's Number, Formula as a Conversion Factor, Emp.Form, Molarity	3.39, 3.49, 3.57, 13.43	https://screencast-o-matic.com/u/fr7D/example_molar_mass_calculation https://screencast-o-matic.com/u/fr7D/Mole-Conversions https://screencast-o-matic.com/u/fr7D/AP-Empirical-Form https://screencast-o-matic.com/u/fr7D/Molarity-Concentration
Ideal Gas Law	10.37	**Required Video** **https://screencast-o-matic.com/u/fr7D/Chap10-part2-GasLaws**

Set 2 of 3 Stoichiometry Questions **Due July 31st.** Photos of answers must show full work for credit, since answers have been provided. . Emphasis is on proper set up of more complex problems.
Choose any one video and watch it for correct set up of problems in AP Chemistry

Concept	**Problem (chap #.problem #)**	**choose any one video below as required video**
Stoichiometry Solids	3.77 & 3.85	https://screencast-o-matic.com/u/fr7D/9-3-Limiting-Reactants https://screencast-o-matic.com/u/fr7D/PercentYield
Stoichiometry Aqueous Solutions	4.87	https://screencast-o-matic.com/u/fr7D/12-6-ChemRxn-Solutions
Stoichiometry Gases	10.57	https://screencast-o-matic.com/u/fr7D/Gas_Laws_Reactions
Combo Stoichiometry	4.89	

Set 3 of 3 Net Ionic Equations and Electrochemistry **Due Aug 28th.** Photos of answers must show full work for credit, since answers have been provided. Emphasis on higher level problem solving differentiating between first-year and AP level questions. Three videos are required to watch due to the deviation in problem set up from first-year chemistry class

Concept	**Problem (chap #.problem #)**	**All required video**
Ionic Equations	4.26 4.37, 4.39	**https://screencast-o-matic.com/u/fr7D/Ionic_Equations**
Oxidation Number determination	20.19	**https://screencast-o-matic.com/u/fr7D/assigning_oxidation_numbers**
Balancing half reactions and full reactions Acidic Conditions	20.25 A, B, C (only)	**https://screencast-o-matic.com/u/fr7D/BalancingAcidicReactions**