Middletown High School South
AP Chemistry 2019-2020 with Dr. Resnick

Contact Info:

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General Classroom Information

AP Chemistry is a **college-level** introductory chemistry course linked to a challenging College Board AP test scheduled for May 7, 2020. During the week or so prior to the AP test, there will be an in-class, comprehensive AP-style exam that will be included in your grade for the course.

The units of study range from atomic structure to complex systems of chemical thermodynamics and solutions equilibria. In order to accomplish all of the labs and material in the AP curriculum, the class will be moving at a fast pace, including frequent quizzes, and a lab and test approximately every other week.

Due to the intense pace and advanced curriculum of this course, it is expected that you will be actively engaged and self-driven in order to master the course content. This class requires a **significant amount** of home-study, on a **daily** basis. Timely completion of assignments is expected and regular study and preparation will allow your class-time and labs to be more meaningful and productive, and will allow *you* to own the material. Extra help to review homework problems or class material is available during block 3 and by appointment.

AP chemistry is a challenging course and it will be a very rewarding experience if you are intent on learning the material and succeeding.
You should seriously reconsider taking this course if you are unable to make the commitment that is required to master the material.

Lab Preparation

- AP Chemistry is a lab-intensive course. Students are expected to prepare for labs and complete them in a timely manner.
- Although labs and activities may be group work, each student is responsible for maintaining their *own* data records and submitting their own lab report.

Summer Assignment:

1. Join Google Classroom (code: tkwyhlc) and follow posted instructions to gain access to the eText (Chemistry: The Central Science, 13e, Brown/LeMay/Bursten/Murphy/Woodward/Stoltzfus)
   If you have any difficulty accessing the online text, please send me an email

2. Read the following eText chapters & complete the following end-of-chapter exercises. The answers to these exercises are provided in Appendix-1 of the eText (except for those that are underlined). The underlined exercises shown below, are provided at the end of this assignment sheet. **This summer assignment will be graded as a 20 point homework (0.5 points per exercise, 40 exercises total)**.

Chapter 1: #1-1, 1-2, 1-21, 1-31, 1-37, 1-39, 1-41, **1-44**, 1-47, 1-61
Chapter 2: #**2-3**, 2-4, **2-5**, 2-17, **2-26**, 2-35, 2-55, 2-61, 2-79, **2-100**
Chapter 3: #3-1, 3-3, 3-5, 3-7, 3-15, 3-19, 3-21, 3-27, 3-39, 3-53, 3-63, 3-67, 3-79
Chapter 4 (except 4.4): #4-1, **4-14**, 4-17, 4-23, 4-69, 4-81, 4-87

Please notice that there are in-text sample exercises shown throughout the chapters with fully worked-through solutions. While these sample exercises are not assigned as part of the summer assignment, they are an excellent opportunity for you to test your skills as you are studying the chapters.

Additionally, please make sure that you have memorized the names & charges of the common ions shown below.

Polyatomics		Monatomic Ions	
1+		1+	
hydronium	H_3O^+	Group 1 ions (H^+, Li^+, Na^+, K^+, Rb^+, Cs^+) and Ag^+	
ammonium	NH_4^+		
1–		2+	
perchlorate	ClO_4^-	Group 2 ions (Be^{+2}, Mg^{+2}, Ca^{+2}, Sr^{+2}, Ba^{+2}) and Zn^{+2}, Cd^{+2}	
chlorate	ClO_3^-		
chlorite	ClO_2^-		
hypochlorite	ClO^-	3+	
		Group 3 ions (Al^{+3}, Ga^{+3}, In^{+3}) and Sc^{+3}	
acetate	$C_2H_3O_2^-$		
cyanide	CN^-	3–	
hydrogen carbonate	HCO_3^-	nitride	N^{3-}
hydroxide	OH^-	phosphide	P^{3-}
permanganate	MnO_4^-		
nitrate	NO_3^-	2–	
nitrite	NO_2^-	oxide	O^{2-}
		sulfide	S^{2-}
2–		selenide	Se^{2-}
carbonate	CO_3^{2-}		
chromate	CrO_4^{2-}	1–	
dichromate	$Cr_2O_7^{2-}$	hydride	H^-
peroxide	O_2^{2-}	fluoride	F^-
sulfate	SO_4^{2-}	chloride	Cl^-
sulfite	SO_3^{2-}	bromide	Br^-
		iodide	I^-
3–			
phosphate	PO_4^{3-}		
phosphite	PO_3^{3-}		

Answers to underlined exercises (not provided in eText appendix):

Chapter 1:

#1-44: 19.5 mL

Chapter 2:

#2-3: metals: red & green; nonmetals: blue & yellow; alkaline earth metals: red; noble gas: yellow

2-5 : (i): ionic (ii): molecular compound

2-26: a) $^{31}_{16}X$ and $^{32}_{16}X$ are isotopes. b) isotopes of S, atomic # 16

2-100: a) alkali metal, K; b) alkaline earth metal, Ca; c) noble gas, Ar; d) halogen, Br; e) metalloid, Ge; f) a nonmetal in 1A, H; g) metal that forms 3+ ion, Al; h) nonmetal that forms 2_ ion, O; i) element that resembles Al, Ga

Chapter 4:

#4-14: a) False. Methanol is molecular & does not ionize, so solution does not conduct electricity. b) True, CH_3COOH is a weak electrolyte. When dissolved in water, a small percent of molecules ionize to form H^+ and CH_3COO^- ions.