

Fairfield Public Schools AP Chemistry

Summer assignment for 2017-2018 school year

Instructors:

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Welcome to AP chemistry! AP chemistry is a fast-paced college level course. In order for us to complete our curriculum in time for the AP test in early May; we will need to get off to a running start on the very first day of school. It is essential that you complete and spend time on this summer work so that you are not behind.

DO NOT WAIT UNTIL THE LAST MINUTE! You will benefit much more from doing a little bit throughout the summer and letting the concepts have time to sink in.

There are 3 parts to your summer assignment: reading and doing practice problems for Chapters 1-3 in your textbook, completing 3 practice quizzes that I will send you as you complete each chapter, and memorizing the polyatomic ions.

Reading and practice problems: All solutions to textbook problems will be on Google Classroom

Chapter 1: Suggested timeline: Finish by July 14

- Read the whole chapter (pages 1-28). Look at the pictures and diagrams. You should find this whole chapter to be review of Chem 31.
- Work on the “sample exercises” within the chapter
- Complete the End of Chapter problems (pgs. 31-35) #11, 13, 18, 19, 23, 27, 35, 40, 45, 49, 61, 64, 74
- **When you have completed this chapter and the problems, email me and I will send you a Chapter 1 practice test (to be submitted for a summative grade).**

Chapter 2: Suggested timeline: Finish by August 4

- Read pages 37-65 (you can skip section 2.9 on organic compounds). Look at the pictures and diagrams. Again, this should be review from chemistry 31,
- Work on the “sample exercises” within the chapter
- Complete the End of Chapter problems (pgs. 70-77) #10a, 19, 21, 22, 25, 31, 38, 45, 49, 51, 55, 58, 59, 66, 67, 91, 93, 95
- **When you have completed this chapter and the problems, email me and I will send you a Chapter 2 practice test (to be submitted for a summative grade).**

Chapter 3: Suggested timeline: Finish by August 25

- Read the whole chapter (pages 79-107). Most of this chapter is review of chem 31, with a few new things. Look at the pictures and diagrams.
- Work on the “Sample exercises” within the chapter
- Complete the End of Chapter problems (pgs. 108-117) #12, 13, 19, 21, 25, 33, 35, 45, 47, 50, 51, 53, 58, 63, 73, 78, 81, 91, 93
- **When you have completed this chapter and the problems, email me and I will send you a Chapter 3 practice test (to be submitted for a summative grade).**

Memorize the polyatomic ions: You are expected to know all the polyatomic ions for AP chemistry, and will be tested on them within the first few days of school. You need to memorize the symbols, names, and charges.

Memorize the shaded ions: learn the rules for hypo-, -ite, -ate, and per- to determine the rest.

hypo- (2 less O)	-ite (1 less O)	-ate	per- (1 more O)
	nitrite NO_2^-	nitrate NO_3^-	
	sulfite SO_3^{2-}	sulfate SO_4^{2-}	
	phosphite PO_3^{3-}	phosphate PO_4^{3-}	
hypochlorite ClO^-	chlorite ClO_2^-	chlorate ClO_3^-	perchlorate ClO_4^-
hypobromite BrO^-	bromite BrO_2^-	bromate BrO_3^-	perbromate BrO_4^-
hypoiodite IO^-	iodite IO_2^-	iodate IO_3^-	periodate IO_4^-

Odd Companions or No Companion	
hydroxide OH^-	
cyanide CN^-	
acetate $\text{C}_2\text{H}_3\text{O}_2^-$	
carbonate CO_3^{2-}	bicarbonate HCO_3^-
chromate CrO_4^{2-} yellow	dichromate $\text{Cr}_2\text{O}_7^{2-}$ orange
permanganate MnO_4^- purple	

and don't forget about
ammonium NH_4^+

Other Common Polyatomic Ions to Memorize

Cations (1+)

hydronium (H_3O^{1+})

Anions (1-)

dihydrogen phosphate ($\text{H}_2\text{PO}_4^{1-}$)

hydrogen sulfite or bisulfate
(HSO_3^{1-})

thiocyanate (SCN^{1-})

Anions (2-)

hydrogen phosphate (HPO_4^{2-})

peroxide (O_2^{2-})

oxalate ($\text{C}_2\text{O}_4^{2-}$)

thiosulfate ($\text{S}_2\text{O}_3^{2-}$)