AP Chemistry

Summer Reading and Assignment

PLEASE PICK UP PACKET IN FRONT OFFICE.

2024-25

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Welcome to AP Chemistry! AP Chemistry builds on prior knowledge from Honors Chemistry. You will need to spend the summer reviewing skills learned in Honors Chemistry. There will be some things you will need to memorize to be successful in this course. Those items are attached.

College Board organizes our material into 9 units. You will cover Unit 1 this summer at home. When we meet in August, we will briefly discuss the unit, and you will be able to ask questions in class. A test over Unit 1 will be given the second week of school. We will be moving quickly through this unit to we make sure we have time to cover all of the material and leave time for review before the AP exam next Spring.

You will watch the videos assigned and fill out the study guides as you watch. They will be turned in for a daily grade the first day of class. Feel free to email me if you have any questions. Expect to spend a total of about 2 hours on this part of the summer assignment. Each video is about 15 minutes on average, and there are 9. So, you can easily do one a day and knock this out in just a little over a week with a small time commitment each day. I recommend doing it in July instead of June so it is fresh on your mind. The material in unit 1 is largely review, but a few things are new material.

Links to the Unit 1 videos: Note:

You can search on You Tube: "Shanna Barkume AP Chemistry CED Unit 1" and view full playlist and find the videos in order. They have a red/orange background.

1.1

https://www.youtube.com/watch?v=YBXHe3FKn3A&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAu MAk4&index=1

1.2

https://www.youtube.com/watch?v=jjlkBCJ58lw&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAuMAk 4&index=2 1.3

https://www.youtube.com/watch?v=1wlztEkLsY8&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAuMA k4&index=3

1.4

https://www.youtube.com/watch?v=hifgg0489nc&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAuMA k4&index=4

1.5 (2 videos)

https://www.youtube.com/watch?v=S6iNAvmnyG8&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAu MAk4&index=5

https://www.youtube.com/watch?v=ntu3hwPo3ZE&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAuM Ak4&index=6

1.6

https://www.youtube.com/watch?v=acRPplg3l9k&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAuMA k4&index=7

1.7

https://www.youtube.com/watch?v=Q6IWuI4txdw&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAuM Ak4&index=8

1.8

https://www.youtube.com/watch?v=8al5h7ggpCQ&list=PLzFCBCoiEwAdzTtiGRh9_EU67okAuM Ak4&index=9

Please work hard memorizing the monoatomic and polyatomic ions in this packet that need to be committed to memory. Flash cards are a good suggestion. You will be allowed a periodic table but it only has the symbols not element names. A great website to use for practice quizzes is: <u>https://www.sciencegeek.net/APchemistry/Quizzes/lons/</u>

You also need to memorize the six strong acids. A list of those is in this packet.

Recommended Optional AP Chemistry Review books:

Cracking the AP Chemistry Exam, (any year after 2014), by Paul Foglino, The Princeton Review

AP Chemistry Crash Course, 2nd Edition, by Adrian Dingle, Research & Education Association

Useful Websites:

https://www.khanacademy.org/science/ap-chemistrybeta?msclkid=d0e4a375b2e511ec91a3d7dc303e3058

http://www.bozemanscience.com/apchemistry/?msclkid=e5c5cdafb2e511ec85606598440ca907

https://www.sciencegeek.net/APchemistry/index.shtml?msclkid=fb152a71b2e511eca1c800d40 f9bcad5

I am excited to partner with you in this journey this year! I might be a pharmacist, but I started as an education major. The Lord has always placed a love of teaching in my heart, and I am grateful I get to share my passion for learning with you!

AP Chemistry Summer Assignment Packet

1. Memorize the following monoatomic and polyatomic ions. Be prepared for a quiz the first few weeks of school.

Flash cards are a good suggestion. You will be allowed a periodic table (symbols only.) A great website to use for practice quizzes is: <u>https://www.sciencegeek.net/APchemistry/Quizzes/lons/</u>

acetate CH₃COO⁻

carbonate CO₃²⁻

bicarbonate HCO31-

nitrate NO31-

sulfate SO₄²⁻

hydroxide OH¹⁻

hydronium H_3O^+

phosphate PO₄³⁻

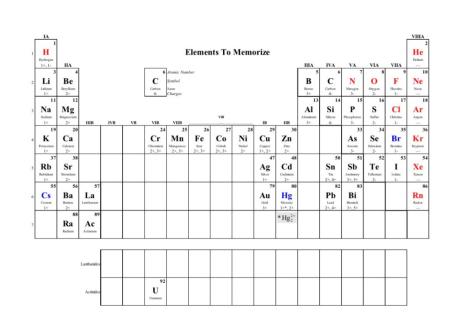
2. Memorize the following diatomic elements:

Hydrogen, oxygen, nitrogen, fluorine, chlorine, bromine, and iodine all form molecules of two atoms of the same element.

H₂, N₂, O₂, F₂, Cl₂, Br₂, I₂

I'll Have Neil Over For Clam Brains

3. Try to memorize the following element names and symbols. This may take some time over the first quarter.



	†Actinide Series	de Series		*Lanthanide Series		(226) (227)	Ra †Ac	68 88	137.33 138.91	Ba *La	56 57	87.62 88.91	Sr Y	38 39	40.08 44.96	Ca Sc	20 21	24.30	Mg	12	9.01	Be	4			
232.0	Th	00	140.12	Ce	85	7) (267)	c Rf		91 178.49	a Hf	72	1 91.22	Zr	40	6 47.87	Ti	_									
4 231 04	Pa	91	2 140.91	Pr	59	(270)	Db	-	9 180.95	Ta	73	92.91	Nb	41	50.94	V	23									PE
232.04 231.04 238.03	C	92	144.24	Nd	60	(271)	Sg	106	183.84	W	74	95.95	Mo	42	52.00	Cr	24									PERIODIC TABLE OF THE ELEMENTS
(237)	Np	93	(145)	Pm	61	(270)	Bh	107	186.21	Re	75	(97)	Tc	43	54.94	Mn	25									DIC
(244)	Pu	94	150.4	Sm	62	(277)	Hs	108	190.2	0s	76	101.1	Ru	4	55.85	Fe	26									TAB
(243)	Am	56	151.97	Eu	63	(276)	Mt	109	192.2	Ir	77	102.91	Rh	45	58.93	Co	27									LE
(247)	Cm	96	157.25	Gd	64	(281)	Ds	110	195.08	Pt	78	106.42	Pd	46	58.69	N	28									OFT
(247)	Bk	97	158.93	Tb	65	(282)	Rg	111	196.97	Au	79	107.87	Ag	47	63.55	Cu	29									HE
(251)	Cf	86	162.50	Dy	66	(285)	Cn	112	200.59	Hg	80	112.41	Cd	48	65.38	Zn	30									ELE
(252)	Es	99	164.93	Ho	67	(285)	Nh	113	204.38	T	81	114.82	In	49	69.72	Ga	31	26.98	AI	13	10.81	в	S			MEN
(257)	Fm	100	167.26	Er	89	(289)	F	114	207.2	РЬ	82	118.71	Sn	50	72.63	Ge	32	28.09	Si	14	12.01	0	6			SLI
(258)	Md	101	168.93	Tm	69	(288)	Mc	115	208.98	Bi	83	121.76	Sp	51	74.92	As	33	30.97	P	15	14.01	N	7			
(259)	No	102	173.05	Yb	70	(293)	Lv	116	(209)	Po	84	127.60	Te	52	78.97	Se	34	32.06	S	16	16.00	0	00			
(262)	Lr	103	174.97	Lu	71	(294)	Ts	117	(210)	At	85	126.90	Ι	53	79.90	Br	35	35.45	2	17	19.00	F	9			
_						(294)	Og	118	(222)	Rn	98	131.29	Xe	54	83.80	Kr	36	39.95	Ar	18	20.18	Ne	10	4.00	He	2

Strong Acids	Strong Bases
HCl	LiOH
HBr	NaOH
н	кон
HNO ₃	Ca(OH) ₂
H ₂ SO ₄	Sr(OH) ₂
HClO₄	Ba(OH)2

SOLUBLE IONIC COMPOUNDS	INSOLUBLE IONIC COMPOUNDS
 Group 1A ions (Li*, Na*, K*, etc.) and ammonium ion (NH4*) are soluble. 	 (Hydroxides) OH⁻ and (Sulfides) S¹, are insoluble except when with Group 1A ions (L¹, Na⁺, K⁺, etc.), ammonium ion (NH₄⁺) and Ca²⁺, Sr²⁺, Ba²⁺.
 (Nitrates) NO₃⁻, (acetates) CH₃COO⁻ or C₂H₃O₂⁻, and most perchlorates (CIO₄⁻) are soluble. 	 (Carbonates) CO₃² and (Phosphates) PO₄³ are insoluble except when with Group 1A ions (Li[*], Na[*], K[*], etc.), ammonium ion (NH₄[*]).
3. CI:, Br, and I: are soluble, except when paired with Ag*, Pb2*, Cu* and Hg22*.	
 (Sulfates) SOt²· are soluble, except those of Ca²⁺, Sr²⁺, Ba²⁺, Ag⁺, and Pb²⁺. 	

H ls	1					Elec	tron	Conf	iauro	ation	Tabl	e								He 1s
u	Be 2s	-													₿	C	-N	310 2p	4	SNe .
Na	Mg 3s	2														1 Si	2 p	30	-ICI	SAr .
ĸ	ICa 4s	25	c	T	2	V	Cr	4 Mn	SIFe 3d	6 Co	7 Ni	*Cu	⁹ Zn	10	Ga	Ge	As	Se	4 B r	sKr
Rb	ISr 5s	24	+	ıZr	2	Nb	3 Mo	4 Tc	SRu 4d	6 Rh	7 Pd	*Ag	9 Co		In +	Sn	2 Sb	ITe 5p	41	×Xe
Cs	Ba	21	.a*	Hf	2	Та	3 W	4 Re	slos 5d -	6 ir	7 Pt	8 Au	9 Hç	10	1	1 Pb	281	6p	4 At	SRn
Fr	I Ra 7s	2+	Ac	Rf	2	Db	3 Sg	4Bh	sHs 6d	6 Mt	7 Ds	⁸ Rg	9	10	+	1	+	The	4	-
						Ce	Pr	2 Nd	3Pm	4Sm	5Eu	6 Gd	лть 47 -		Dy	9Ho	10 Er	11 Tn	1.12Yb	BLu I
						Th	1 Pa	20	3Np	4Pu	5 Am	6Cm	Bk		CI	9Es	10 Fm	DMc	12 No	13Lr 1
						+	-			-	-	-	51-	-			-	-	-	-