

AP Chemistry Summer Assignment

Welcome to college chemistry!

The required assignments are found below.

Things to buy:

- ✓ Classroom Materials: 3" 3-ring binder, paper, scientific calculator, carbonless laboratory notebook (pending COVID guidelines), writing utensils. (The lab notebook is one that makes duplicate pages for submission available from Amazon. Here is one version to consider priced at 12.49 at time of writing:

https://www.amazon.com/BookFactory-Carbonless-Chemistry-Notebook-Wire/dp/B00AET0LX8/ref=sr_1_7?dchild=1&keywords=laboratory+notebook+duplicate+pages&qid=1620827779&sr=8-7

If we are able to do labs again, I will be asking for students to purchase nitrile gloves (I donated any supply I had to the medical community at the beginning of the pandemic when there was a short supply.) Stay tuned.

Assignments:

You have two different items that must be completed for your summer assignment.

First, you will go to ck12.org and use the class code given below to enroll in (JOIN) my summer class. Here you will learn about significant figures in scientific calculations. It turns out that it DOES matter how many digits you report on an answer. Though this concept is no longer a part of the Honors Chemistry curriculum, it remains important in the AP curriculum.

CLASS CODE: y0fmx

There you will see three assignments to complete involving significant figures in chemistry: Significant Figures, Significant Figures in Addition and Subtraction, and Significant Figures in Multiplication and Division. Each assignment has reading, videos, and practice problems. You will receive a grade for these assignments so please try your best. They must be complete by August 17th. Additionally, within the first few days in the fall, you will have an assessment over significant figures.

In addition to learning something new (Significant Figures), the second part of the assignment is to make sure that you remember how to write names and formulas for both covalent and ionic compounds. To make sure that you are prepared:

- ✓ Take the three naming/formula writing practice quizzes and compare to the provided answer keys sometime near the start of school. Score

yourself with the supplied answers. If you scored highly, then you will be ready to take the naming quiz we will have on the second day of school. Use the provided periodic table as a reference. I know that naming acids wasn't stressed in Honors Chemistry so I will teach/review those prior to the quiz. Please take notes on the provided videos on Acid Naming/Formulas prior to the first day of school.

- ✓ If you want to improve your score, refer to your notes from Honors Chemistry.
- ✓ There is nothing to submit to me for the summer assignment on naming and formulas. Just be ready for the quiz on day 1 (or 2).
- ✓ Here are some links to videos that can help you review if necessary. You can google Khan Academy or Crash Course Chemistry and find helpful videos.

Naming ions and ionic compounds	https://www.khanacademy.org/science/chemistry/atomic-structure-and-properties/introduction-to-compounds/v/naming-ions-and-ionic-compounds
Ionic compounds with variable charge metals	https://www.khanacademy.org/science/chemistry/atomic-structure-and-properties/names-and-formulas-of-ionic-compounds/v/naming-ionic-compound-with-polyvalent-ion
Ionic formulas from names	https://www.khanacademy.org/science/chemistry/atomic-structure-and-properties/names-and-formulas-of-ionic-compounds/v/formula-for-ionic-compounds
Ion charges practice	https://www.khanacademy.org/science/chemistry/atomic-structure-and-properties/names-and-formulas-of-ionic-compounds/e/predict-charges-on-monatomic-ions
Naming Ionic compounds practice	https://www.khanacademy.org/science/chemistry/atomic-structure-and-properties/names-and-formulas-of-ionic-compounds/e/naming-ionic-compounds
Finding formulas for ionic compounds practice	https://www.khanacademy.org/science/chemistry/atomic-structure-and-properties/names-and-formulas-of-ionic-compounds/e/find-the-formula-for-ionic-compounds
Naming covalent compounds	https://www.youtube.com/watch?v=DejkvR4pvRw

Naming acids	https://www.youtube.com/watch?v=5Jb2u9ihfm4
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Again, welcome to our class. Please contact me at susan.campbell@boone.kyschools.us if you have any questions. During the school year, I will check this e-mail address regularly. During the summer, I plan on not checking e-mail often.

Dr. Campbell

PERIODIC TABLE OF THE ELEMENTS

1 H 1.008																	2 He 4.00
3 Li 6.94	4 Be 9.01															9 F 19.00	10 Ne 20.18
11 Na 22.99	12 Mg 24.30															17 Cl 35.45	18 Ar 39.95
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.90	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.39	31 Ga 69.72	32 Ge 72.59	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc (98)	44 Ru 101.1	45 Rh 102.91	46 Pd 107.87	47 Ag 107.87	48 Cd 112.41	49 In 114.82	50 Sn 118.71	51 Sb 121.75	52 Te 127.60	53 I 126.91	54 Xe 131.29
55 Cs 132.91	56 Ba 137.33	57 *La 138.91	72 Hf 178.49	73 Ta 180.95	74 W 183.85	75 Re 186.21	76 Os 190.2	77 Ir 192.2	78 Pt 195.08	79 Au 196.97	80 Hg 200.59	81 Tl 204.38	82 Pb 207.2	83 Bi 208.98	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra 226.02	89 †Ac 227.03	104 Rf (261)	105 Db (262)	106 Sg (266)	107 Bh (264)	108 Hs (277)	109 Mt (268)	110 Ds (271)	111 Rg (272)							
*Lanthanide Series																	
58 Ce 140.12	59 Pr 140.91	60 Nd 144.24	61 Pm (145)	62 Sm 150.4	63 Eu 151.97	64 Gd 157.25	65 Tb 158.93	66 Dy 162.50	67 Ho 164.93	68 Er 167.26	69 Tm 168.93	70 Yb 173.04	71 Lu 174.97				
†Actinide Series																	
90 Th 232.04	91 Pa 231.04	92 U 238.03	93 Np (237)	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (262)				

Practice Quiz 1

Name each compound.

- 1) Na_2CO_3 _____
- 2) NH_4OH _____
- 3) NH_3 _____
- 4) FeSO_4 _____
- 5) SiO_2 _____
- 6) $\text{Ga}(\text{NO}_3)_3$ _____
- 7) H_2SO_4 _____
- 8) B_2H_4 _____
- 9) CO _____
- 10) HClO_4 _____

Write the formulas of the following chemical compounds:

- 11) dinitrogen trioxide _____
- 12) nitrogen _____
- 13) methane _____
- 14) lithium acetate _____
- 15) phosphorus trifluoride _____
- 16) vanadium (V) oxide _____
- 17) aluminum hydroxide _____
- 18) zinc sulfide _____
- 19) carbonic acid _____
- 20) silver phosphate _____

Answers: Practice Quiz 1

Name each compound.

- 1) Na_2CO_3 sodium carbonate
- 2) NH_4OH ammonium hydroxide
- 3) NH_3 ammonia
- 4) FeSO_4 iron (II) sulfate
- 5) SiO_2 silicon dioxide
- 6) $\text{Ga}(\text{NO}_3)_3$ gallium nitrate
- 7) H_2SO_4 sulfuric acid
- 8) B_2H_4 diboron tetrahydride
- 9) CO carbon monoxide
- 10) HClO_4 perchloric acid

Write the formulas of the following chemical compounds:

- 11) dinitrogen trioxide N_2O_3
- 12) nitrogen N_2
- 13) methane CH_4
- 14) lithium acetate LiCH_3COO
- 15) phosphorus trifluoride PF_3
- 16) vanadium (V) oxide V_2O_5
- 17) aluminum hydroxide $\text{Al}(\text{OH})_3$
- 18) zinc sulfide ZnS
- 19) carbonic acid H_2CO_3
- 20) silver phosphate Ag_3PO_4

Practice Quiz 2

Name each compound.

- 1) HI _____
- 2) CaSO_4 _____
- 3) C_2Br_6 _____
- 4) $\text{Cr}(\text{CO}_3)_3$ _____
- 5) Ag_3P _____
- 6) IO_2 _____
- 7) HCl _____
- 8) PbS _____
- 9) CH_4 _____
- 10) N_2O_3 _____

Write the formulas of the following chemical compounds:

- 11) tetraphosphorus triselenide _____
- 12) potassium acetate _____
- 13) iron (II) phosphide _____
- 14) disilicon hexabromide _____
- 15) titanium (IV) nitrate _____
- 16) diselenium diiodide _____
- 17) copper (I) phosphate _____
- 18) ammonium oxide _____
- 19) nitric acid _____

20) phosphorus

Answers: Practice Quiz 2

Name each compound.

- 1) HI hydroiodic acid
- 2) CaSO₄ calcium sulfate
- 3) C₂Br₆ dicarbon hexabromide
- 4) Cr(CO₃)₃ chromium (VI) carbonate
- 5) Ag₃P silver phosphide
- 6) IO₂ iodine dioxide
- 7) HCl hydrochloric acid
- 8) PbS lead (II) sulfide
- 9) CH₄ methane
- 10) N₂O₃ dinitrogen trioxide

Write the formulas of the following chemical compounds:

- 11) tetraphosphorus triselenide P₄Se₃
- 12) potassium acetate KCH₃COO
- 13) iron (II) phosphide Fe₃P₂
- 14) disilicon hexabromide Si₂Br₆
- 15) titanium (IV) nitrate Ti(NO₃)₄
- 16) diselenium diiodide Se₂I₂
- 17) copper (I) phosphate Cu₃PO₄
- 18) ammonium oxide (NH₄)₂O
- 19) nitric acid HNO₃

20) phosphorus

P_4

Practice Quiz 3

Name each compound.

1) NaBr _____

2) $Ca(C_2H_3O_2)_2$ _____

3) P_2O_5 _____

4) HBr _____

5) $FePO_4$ _____

6) K_3N _____

7) SO_2 _____

8) CuOH _____

9) $Zn(NO_2)_2$ _____

10) V_2S_3 _____

Write the formulas for the following chemical compounds:

11) silicon dioxide _____

12) nickel (III) sulfide _____

13) manganese (II) phosphate _____

14) silver acetate _____

15) diboron tetrabromide _____

16) magnesium sulfate heptahydrate _____

17) potassium carbonate _____

18) ammonium oxide _____

19) acetic acid

20) ammonia

Answers: Practice Quiz 3

Name the following chemical compounds:

- 1) NaBr sodium bromide
- 2) $\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2$ calcium acetate
- 3) P_2O_5 diphosphorus pentoxide
- 4) HBr hydrobromic acid
- 5) FePO_4 iron(III) phosphate
- 6) K_3N potassium nitride
- 7) SO_2 sulfur dioxide
- 8) CuOH copper(I) hydroxide
- 9) $\text{Zn}(\text{NO}_2)_2$ zinc nitrite
- 10) V_2S_3 vanadium(III) sulfide

Write the formulas for the following chemical compounds:

- 11) silicon dioxide SiO_2
- 12) nickel (III) sulfide Ni_2S_3
- 13) manganese (II) phosphate $\text{Mn}_3(\text{PO}_4)_2$
- 14) silver acetate $\text{AgC}_2\text{H}_3\text{O}_2$
- 15) diboron tetrabromide B_2Br_4
- 16) magnesium sulfate heptahydrate $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
- 17) potassium carbonate K_2CO_3
- 18) ammonium oxide $(\text{NH}_4)_2\text{O}$
- 19) acetic acid CH_3COOH

20) ammonia

NH_3