

AP CHEMISTRY – SUMMER ASSIGNMENT 2021

Welcome to AP Chemistry! I look forward to a year filled with growth and fun in chemistry.

This summer assignment is designed to cover skills and background information you should have, to be prepared to start the class next fall. Additionally, your ability to teach yourself and be resourceful will come into play. I have included online sites at the end of this document to help you, but you can find your own resources too. Please feel free to email me for guidance as well. We will also review the material the first two days of class. There will be a quiz over this material by the second week of class. sbritain@stanwood.wednet.edu

You have been given a packet of 19 chemistry worksheets. You are required to **complete only the problems listed** below. However, I recommend that you complete additional problems for extra practice. There are additional resources listed in each section, and the AP Chem Student Study Guide may also be helpful to you.

Section 1. Dimensional Analysis/Unit Conversions

Assignment: Worksheets (pg. 1, 2, 2a-b) Complete problems listed:

Unit Conversions (#1,3,5),

SI Units and Unit Conversion (#1, 3 6),

Significant Figures Worksheet (1a, 1f, 2c, 2d, 3d, 4b, 5e, 6f, 7c).

Web Resources for extra help:

Unit Conversions: <https://chemfiesta.org/2016/03/30/unit-conversions/>

Fun with Dimensional Analysis: <http://www.alysion.org/dimensional/fun.htm>

Significant Figures Tutorial:

http://chemcollective.org/activities/tutorials/stoich/significant_figures

Section 2. Calculations - Chemical Formulas/Molar Mass/Molecular Weight

Assignment: Worksheets (pgs. 3-7) Complete problems listed::

Molar Mass Practice (#1, 3, 5),

Mole Calculation Practice (#1, 3, 5),

Moles, Molecules, and Grams (#1, 3, 5, 6),

Percent Composition (#1, 3)

Web Resources for extra help:

How to Calculate Molar Mass: <https://chemfiesta.org/2014/10/31/calculations-worksheets/>

All About Mole Calculations: <https://chemfiesta.org/2015/02/06/mole-calculations-3/>

Section 3. Chemical Equations

Assignment: Worksheets pg. 8-10. Complete problems listed: *Balancing Chemical Equations* (#1, 3, 5), *Balancing Equations* (#1, 3, 5), *Types of Reactions* (#1, 3, 5, 7)

Web Resources for extra help:

How Can I Balance An Equation: <https://chemfiesta.org/2015/09/04/balancing-equations/>

Six Types of Chemical Reactions: <https://chemfiesta.org/2015/09/08/the-six-types-of-reaction/>

Section 4. Solubility Rules and Precipitation Reactions

Assignment: Worksheets (pgs. 11-12) Complete problems listed: *Using the Solubility Rules* (#1-2), *Precipitation Reactions* (#3, 5). (Solubility Rules Chart on last page of this document)

Web Resources for extra help:

Solubility Rules: <http://eppe.tripod.com/soluble.htm>

Precipitation Reactions: http://preparatorychemistry.com/Bishop_Precipitation_Equations.htm

http://www.occc.edu/kmbailey/Chem1115Tutorials/Metathesis_Reactions.htm

Section 5. Naming Molecules and Ions

Assignment: Worksheets (pgs. 13-17) Complete problems listed: *Naming Ionic Compounds* (#1, 3, 5, 11, 13,15), *Lots of Ionic Naming* (1, 3), *Compound Names and Formulas* (1, 6, 13, 18), *Naming Covalent Compounds*(2, 4, 9,12), *Naming Compounds and Molar Masses* (8, 9)

Web Resources for extra help:

Naming Covalent Compounds

<https://chemfiesta.org/2014/12/19/naming-ionic-compounds/>

Introduction to Ionic Compounds:

<http://www.elmhurst.edu/~chm/vchembook/143Aioniccpds.html>

Naming Ions, Cations, Anions, & Polyatomic ions:

https://chem.libretexts.org/Courses/Woodland_Community_College/WCC%3A_Chem_10_-_Concepts_of_Chemistry/Chapter/05%3A_Molecules_and_Compounds/5.07%3A_Naming_Ionic_Compounds

Common Polyatomic Ions			
$C_2H_3O_2^-$	acetate	OH^-	hydroxide
NH_4^+	ammonium	ClO^-	hypochlorite
CO_3^{2-}	carbonate	NO_3^-	nitrate
ClO_3^-	chlorate	NO_2^-	nitrite
ClO_2^-	chlorite	$C_2O_4^{2-}$	oxalate
CrO_4^{2-}	chromate	ClO_4^-	perchlorate
CN^-	cyanide	MnO_4^-	permanganate
$Cr_2O_7^{2-}$	dichromate	PO_4^{3-}	phosphate
HCO_3^-	bicarbonate	SO_4^{2-}	sulfate
HSO_4^-	bisulfate	SO_3^{2-}	sulfite
HSO_3^-	bisulfite		

General Chemistry Sites:

<http://chemteam.info/ChemTeamIndex.html>

<https://chemfiesta.org/>

<https://apstudent.collegeboard.org/apcourse/ap-chemistry>

<http://chemmybear.com/>

Online Chemistry Book:

<https://openstax.org/details/chemistry>

Study Cards:

<http://www.chemmybear.com/stdycrds.html#APChem>

The Solubility Rules

1. All common salts of the Group 1A elements and ammonium are soluble.
2. All common acetates and nitrates are soluble.
3. All binary compounds of Group VIIA elements (other than F) with metals are soluble except those of silver, mercury (I), and lead.
4. All sulfates are soluble except those of barium, strontium, lead, calcium, silver, and mercury(I).
5. Except for those in Rule 1, carbonates, hydroxides, oxides, and phosphates are insoluble.