2018 AP Chemistry Resources

Some students may choose to take advantage of the opportunity to work on some of the introductory AP chemistry curriculum. This will help you with the transition into the course in January. All of this is optional and will not be graded, but it will help you immensely during the first month of the semester. I recommend (optional) that you complete and memorize the following sets of flashcards prior to the start of the course. The flashcards will **not** be a grade, as they are only a study aid to help you with rote memorization.

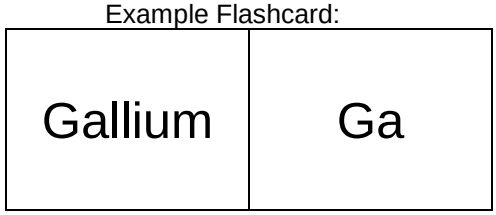
This assignment is designed to facilitate your transition into chemistry and is representative of the most basic prerequisite knowledge that you will need entering the class. This assignment is strongly recommended, but it will not be a grade. Expect bimonthly quizzes over this information.

Flashcards Instructions: You will see a list of what needs to be on the flashcards. For elements and polyatomic ions, put the symbol on one side and the name on the other. If you already know certain elements, then do not make the flashcards for those elements. Feel free to use Quizlet or any other resources. Be sure to study and memorize your cards. You will be expected to know the below information for the entire year on every assessment. The College Board official periodic table is on page 4 of this handout.

Element Names and Symbols Flashcards

Directions: Write the element symbol on one side and the name on the other.

Example Flashcard:



Elements and Symbols List

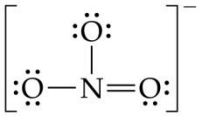
Hydrogen	H	Vanadium	V	Antimony	Sb
Helium	He	Chromium	Cr	Tellurium	Te
Lithium	Li	Manganese	Mn	Iodine	I
Beryllium	Be	Iron	Fe	Xenon	Xe
Boron	B	Cobalt	Co	Cesium	Cs
Carbon	C	Nickel	Ni	Barium	Ba
Nitrogen	N	Copper	Cu	Tungsten	W
Oxygen	O	Zinc	Zn	Platinum	Pt
Fluorine	F	Gallium	Ga	Gold	Au
Neon	Ne	Germanium	Ge	Mercury	Hg
Sodium	Na	Arsenic	As	Thallium	Tl
Magnesium	Mg	Selenium	Se	Lead	Pb
Aluminum	Al	Bromine	Br	Bismuth	Bi
Silicon	Si	Krypton	Kr	Radon	Rn
Phosphorous	P	Rubidium	Rb	Radium	Ra
Sulfur	S	Strontium	Sr	Uranium	U
Chlorine	Cl	Yttrium	Y		
Argon	Ar	Zirconium	Zr		
Potassium	K	Palladium	Pd		
Calcium	Ca	Silver	Ag		
Scandium	Sc	Cadmium	Cd		
Titanium	Ti	Tin	Sn		

Polyatomic Ion Flashcards

Directions: Write the polyatomic ion symbol on one side and the name on the other. Ions with an asterisk, are common and I strongly recommend you memorize them.

Example Flashcard:

CN^-	cyanide



Polyatomic ions are groups of multiple atoms that have a charge (positive or negative). The symbols shown below tell you what elements are in the ion, how many atoms of each, and the charge. For example, NO_3^- contains a nitrogen atom, three oxygen atoms, and the entire group has a charge of -1.

Memorization Hints: Polyatomic Ions

- If you have two ions with similar names and the only difference is the number of oxygen atoms in your ion:
  -ite means smaller number of O
  -ate means larger number of O

- Hypo- (smallest) and Per- (largest) are used if there are four ions with similar names and different numbers of oxygen.

1+
*Ammonium (NH_4^+)
Hydronium (H_3O^+)

Negative Polyatomic Ions

1-
*Acetate ($C_2H_3O_2^-$)
*Chlorate (ClO_3^-)
Chlorite (ClO_2^-)
Cyanide (CN^-)
Dihydrogen phosphate ($H_2PO_4^-$)
*Hydrogen Carbonate or bicarbonate (HCO_3^-)
Hydrogen Sulfite or bisulfite (HSO_3^-)
*Hydroxide (OH^-)
Hypochlorite (ClO^-)
*Nitrate (NO_3^-)
*Nitrite (NO_2^-)
Perchlorate (ClO_4^-)
*Permanganate (MnO_4^-)
Thiocyanate (SCN^-)
Hypobromite (BrO^-)
Bromite (BrO_2^-)
Bromate (BrO_3^-)
Perbromate (BrO_4^-)
Hypoiodite (IO^-)
Iodite (IO_2^-)
*Iodate (IO_3^-)
Periodate (IO_4^-)

2-
*Carbonate (CO_3^{2-})
Chromate (CrO_4^{2-})
Dichromate ($Cr_2O_7^{2-}$)
Hydrogen Phosphate (HPO_4^{2-})
Oxalate ($C_2O_4^{2-}$)
*Peroxide (O_2^{2-})
*Sulfate (SO_4^{2-})
*Sulfite (SO_3^{2-})
Silicate (SiO_3^{2-})

3-
Arsenate (AsO_4^{3-})
*Phosphate (PO_4^{3-})
*Phosphite (PO_3^{3-})
Borate (BO_3^{3-})

All information and content for the course is on www.PedersenScience.com. The password is *tardigrade* to access most of the copyrighted content. All assignments and homework is posted on the website and will also be sent through Remind around 4:00 pm each day. Please join the Remind right now by texting **@f2g2dh** to 81010.

Over break, you may also choose to view some podcasts and practice some problems that will give you an advantage during the first weeks. It is during this time that we will move at an incredibly fast pace through general chemistry content that is needed prior to beginning the AP curriculum.

On the website (see below) the course is divided into two parts. The dropdown menu will show various sections of the course, while clicking on AP Chemistry directly will take you to the AP Chemistry homepage. Below is a list of podcasts and units that will be covered in the first weeks. Most units have hyperlinked problem sets that correspond with the podcasts. In January, you will be required to view and take notes on the podcasts, which will comprise formative grades throughout the course. You will also be asked to attempt problems at home that will later be discussed in class.

If you want to work ahead, click on Part 1: units 1-4 and/or Part 1: units 5-10 to complete the following. Please note that some of the podcast numbers (i.e., 2.1) do not match the video number, but the titles are the same.

Unit 2: Nomenclature (podcasts 2.1-2.4) and attempt some practice problems.

Unit 3: Chemical Reactions (podcasts 3.1-3.6) and attempt some practice problems.

Unit 5: The Mole (part 1: units 5-10; podcasts 5.1-5.7) and attempt some practice problems.

All of this is optional and will be officially assigned in the first weeks of January. You will need a glued graphing composition book (no spiral) on January 4th for lab.