

AP Chemistry Summer Project -2009:

The goal of the summer project is to ensure that you start the year ready to build on what you learned this past year in chemistry, rather than spending time relearning it. My expectation is that you will begin the school year comfortable with the concepts of units, dimensional analysis, significant figures, chemical nomenclature (naming ionic and nonionic compounds) and stoichiometry (including limiting reagents). Most of you are already there – I just don't want you to forget any of this over the summer !

Our textbook will be Chemistry: The Central Science - Brown and LeMay (Prentice Hall). You will be issued a textbook when you pick up your summer project.

Your summer project will consist of the following:

1. **Stoichiometry Review Problems:** The answers are given on the last page. I want to see all of the work you did to obtain the answers! Work out each of the problems clearly and make sure you have the proper units in your answers. These problems will serve as your first test grade!

2. **Memorizing...** Unfortunately as you get more advanced in chemistry there are some things you just have to know!

- Memorize the common ions on the chart on the attached page. These are also on the inside back cover of your textbook.
- Memorize the solubility rules- you can find these on page 127 of your textbook.
- Memorize the rules for naming oxyanions and oxyacids (on pages 61 and 64-65 of your textbook), which you may not have covered this last year.

You will be tested on these the first week of school. Making a set of flashcards to help you memorize these might be helpful.

3. **Read Chapters 1-3 of your textbook.** This material should be review for all of you! We will move through this very quickly – I will be assuming you know all this. A test on dimensional analysis, significant figures, chemical nomenclature, and stoichiometry) will likely be held the second week of school.

If you have any questions – feel free to e-mail me at huebnerchem-0809@yahoo.com

Have a great Summer!!

COMMON IONS

Positive Ions (Cations)

1+

Ammonium (NH_4^+)
 Cesium (Cs^+)
 Copper(I) or cuprous (Cu^+)
 Hydrogen (H^+)
 Lithium (Li^+)
 Potassium (K^+)
 Silver (Ag^+)
 Sodium (Na^+)

2+

Barium (Ba^{2+})
 Cadmium (Cd^{2+})
 Calcium (Ca^{2+})
 Chromium(II) or chromous (Cr^{2+})
 Cobalt(II) or cobaltous (Co^{2+})
 Copper(II) or cupric (Cu^{2+})
 Iron(II) or ferrous (Fe^{2+})
 Lead(II) or plumbous (Pb^{2+})
 Magnesium (Mg^{2+})
 Manganese(II) or manganous (Mn^{2+})
 Mercury(I) or mercurous (Hg_2^{2+})

Mercury(II) or mercuric (Hg^{2+})
 Strontium (Sr^{2+})
 Nickel(II) (Ni^{2+})
 Tin(II) or stannous (Sn^{2+})
 Zinc (Zn^{2+})

3+

Aluminum (Al^{3+})
 Chromium(III) or chromic (Cr^{3+})
 Iron(III) or ferric (Fe^{3+})

Negative Ions (Anions)

1-

Acetate ($\text{C}_2\text{H}_3\text{O}_2^-$)
 Bromide (Br^-)
 Chlorate (ClO_3^-)
 Chloride (Cl^-)
 Cyanide (CN^-)
 Dihydrogen phosphate (H_2PO_4^-)
 Fluoride (F^-)
 Hydride (H^-)
 Hydrogen carbonate or bicarbonate (HCO_3^-)

Hydrogen sulfite or bisulfite (HSO_3^-)
 Hydroxide (OH^-)
 Iodide (I^-)
 Nitrate (NO_3^-)
 Nitrite (NO_2^-)
 Perchlorate (ClO_4^-)
 Permanganate (MnO_4^-)
 Thiocyanate (SCN^-)

2-

Carbonate (CO_3^{2-})
 Chromate (CrO_4^{2-})
 Dichromate ($\text{Cr}_2\text{O}_7^{2-}$)
 Hydrogen phosphate (HPO_4^{2-})
 Oxide (O^{2-})
 Peroxide (O_2^{2-})
 Sulfate (SO_4^{2-})
 Sulfide (S^{2-})
 Sulfite (SO_3^{2-})

3-

Arsenate (AsO_4^{3-})
 Phosphate (PO_4^{3-})