

# Announcements

To join clicker to class today  
(Clickers with LCD display  
join automatically):

- Turn on the Clicker (the red LED comes on).
- Push “Join” button followed by “20” followed by the “Send” button (switches to flashing green LED if successful).
- D2L is still not accepting grade updates from me.

- Exam 2 next Monday. Hope to have sample exam and review sheet updates on web by tomorrow.
- Quiz on Wednesday will be on material from shapes of orbitals (very end of class last Monday) through today's material.

# Review

- Shielding leads to different energies of s, p, d, etc. orbitals within a single shell.
- Specifying excited states and ground states.
- Periodic trends in first ionization energy, radius, ion formation and ionic radius.
- Vocabulary: metal, metalloid (semiconductor or semimetal), nonmetals, alkali metals, alkali earth metals, halogens, noble gases.
- Earth composed of mostly heavier elements, with denser substances more towards center.
- Least dense substances formed early atmosphere.

# Some binary compounds

# Ionic compounds

NaCl, Chang fig. 2.12

# Greek Prefixes

## Chang Table 2.4

# Common Ions Formed

Chang Fig. 2.10

**Common Polyatomic Ions**  
*UWO Chemistry 105 S07-Dr. J. Gutow*

Name	Formula	Name	Formula
Ammonium	$\text{NH}_4^+$ (only common + polyatomic ion)	nitrate	$\text{NO}_3^-$
Acetate	$\text{C}_2\text{H}_3\text{O}_2^-$	nitride	$\text{N}^{3-}$
Azide	$\text{N}_3^-$	oxide	$\text{O}^{2-}$
bicarbonate	$\text{HCO}_3^-$	peroxide	$\text{O}_2^{2-}$
carbonate	$\text{CO}_3^{2-}$	dihydrogen phosphate	$\text{H}_2\text{PO}_4^-$
hypochlorite	$\text{ClO}^-$	hydrogen phosphate	$\text{HPO}_4^{2-}$
chlorite	$\text{ClO}_2^-$	phosphate	$\text{PO}_4^{3-}$
chlorate	$\text{ClO}_3^-$	permanganate	$\text{MnO}_4^-$
perchlorate	$\text{ClO}_4^-$	bisulfite	$\text{HSO}_3^-$
chromate	$\text{CrO}_4^{2-}$	sulfite	$\text{SO}_3^{2-}$
dichromate	$\text{Cr}_2\text{O}_7^{2-}$	bisulfate	$\text{HSO}_4^-$ (not commonly seen, just shows naming pattern)
cyanide	$\text{CN}^-$	sulfate	$\text{SO}_4^{2-}$
hydroxide	$\text{OH}^-$	sulfide	$\text{S}^{2-}$
nitrite	$\text{NO}_2^-$	thiocyanate	$\text{SCN}^-$

# Using Avogadro's Number and Molar Mass

- $N_A = 6.022 \times 10^{23}$  particles/mole (also number of amu/g)

