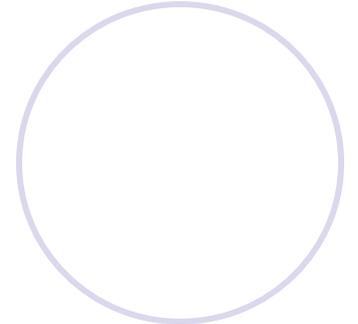
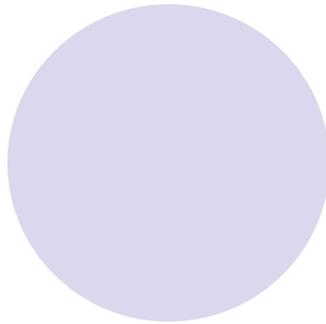
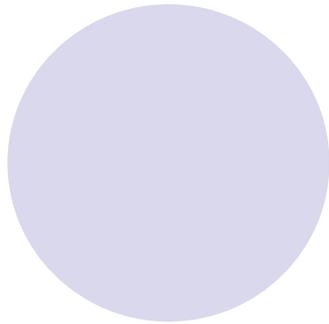


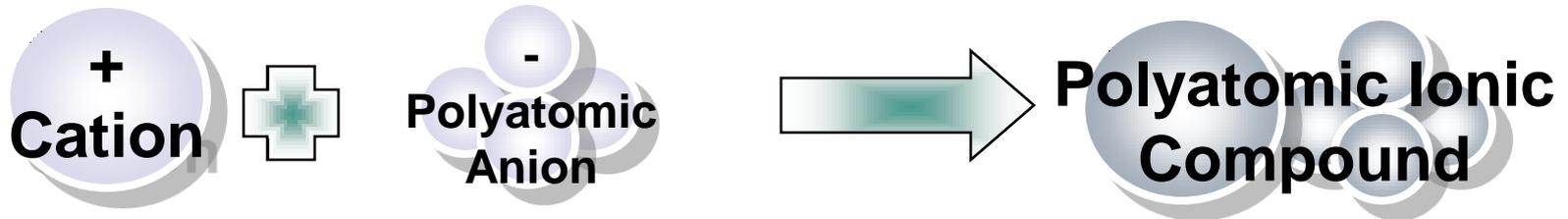
4.4B Naming compounds using Polyatomic Ions



Definition

Polyatomic Ion- more than one atom that together have a charge

Polyatomic Ionic Compound- compound containing at least one polyatomic ion



Common Polyatomic Ions

COMMON POLYATOMIC IONS

Acetate, $\text{CH}_3\text{COO}^{-1}$ or $\text{C}_2\text{H}_3\text{O}_2^{-1}$

Ammonium NH_4^{+1}

Bromate, BrO_3^{-1}

Bromite, BrO_2^{-1}

Carbonate, CO_3^{-2}

Carbonite, CO_2^{-2}

Chlorate, ClO_3^{-1}

Chlorite, ClO_2^{-1}

Chromate, CrO_4^{-2}

Cyanide, CN^{-1}

Dichromate, $\text{Cr}_2\text{O}_7^{-2}$

Dihydrogen phosphate, $\text{H}_2\text{PO}_4^{-1}$

Hydrogen carbonate or bicarbonate, HCO_3^{-1}

Hydrogen phosphate or biphosphate, HPO_4^{-2}

Hydrogen sulfate or bisulfate, HSO_4^{-1}

Hydroxide, OH^{-1}

Hypochlorite, ClO^{-1}

Iodate, IO_3^{-1}

Iodite, IO_2^{-1}

Nitrate, NO_3^{-1}

Nitrite, NO_2^{-1}

Oxalate, $\text{C}_2\text{O}_4^{-2}$

Perchlorate, ClO_4^{-1}

Permanganate, MnO_4^{-1}

Peroxide, O_2^{-2}

Phosphate, PO_4^{-3}

Phosphite, PO_3^{-3}

Silicate, SiO_3^{-1}

Sulfate, SO_4^{-2}

Sulfite, SO_3^{-2}

Help Identifying Polyatomic Ions

- The only cation (front-half) polyatomic ion is “NH₄”
- All other polyatomic ions are anions (back-half)
- The subscripts within the polyatomic ion is important (it must match exactly with the one on your ion list)
- If there are parenthesis, the polyatomic ion is inside (ignore the number outside)

Practice Identifying Polyatomic Ions

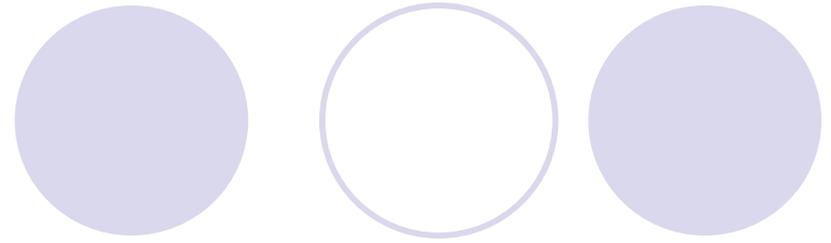
Example:
Identify and
name the
polyatomic ion
in each
compound



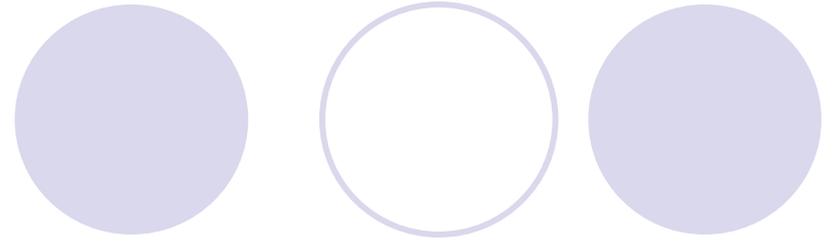
Identifying & Naming Polyatomic Ionic

- These compounds have:
 - More than 2 capital letters (non starting with H)
 - Contain at least 1 metal & 1 non-metal
- To name these compounds:
 - Write the name of the cation (the metal element name or “Ammonium” for “ NH_4 ”)
 - If the anion is a polyatomic ion, write the polyatomic ion’s name just as it is
 - If the anion is a single non-metal element, write its name with the suffix “-ide”

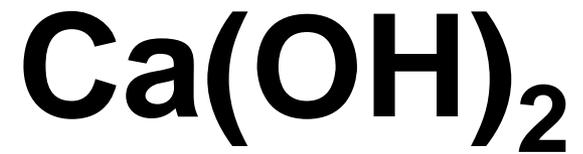
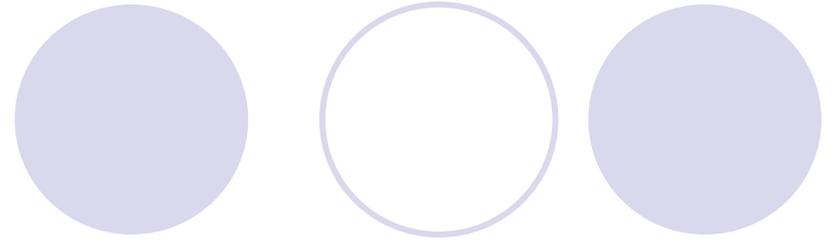
Example #4



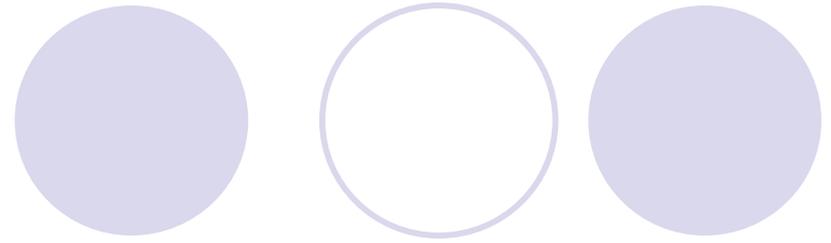
Example #5



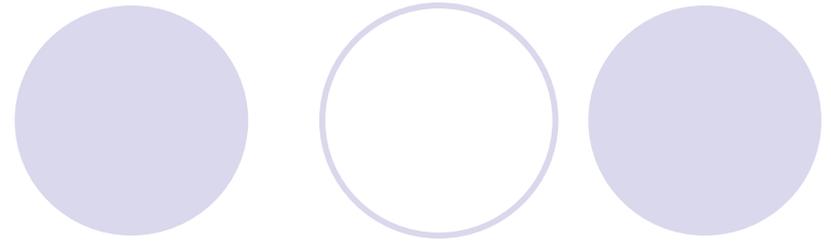
Example #6



Example #7



Let's Practice



Example:

Write the name
for the following
compounds

