OXYACID EXAMPLES

acetic acid

$\llcorner$ "-ate" ion

$H^+ \quad C_2H_3O_2^-$

———————————

$HC_2H_3O_2$
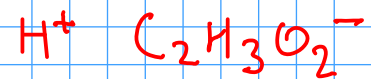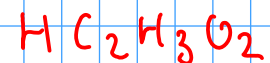
nitrous acid

$\llcorner$ "-ite" ions

$H^+ \quad NO_2^-$

———————————

HNO_2
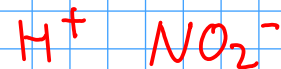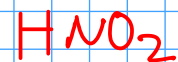
carbonic acid

$\llcorner$ "-ate" ion

$H^+ \quad CO_3^{2-}$

H^+

———————————

H_2CO_3
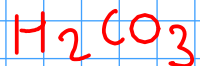
* The number of hydrogen ions to add to the polyatomic to make the acid equals the charge of the polyatomic.

SUMMING UP CHEMICAL NOMENCLATURE

- You need to be able to tell, by looking at a name OR a formula, what kind of compound you are working with!

DON'T GET THE NAMING SYSTEMS MIXED UP! EACH KIND OF COMPOUND IS NAMED WITH ITS OWN SYSTEM!

FROM A CHEMICAL NAME

- If the name has a Roman numeral, the name of a metal, or "ammonium", the compound is likely IONIC

- If the name has a Greek prefix, the compound is BINARY MOLECULAR

- If the name contains the word "acid":

... and starts with "hydro-", then the compound is a BINARY ACID

... and does not start with "hydro-", the compound is an OXYACID

FROM A CHEMICAL FORMULA

- if the formula contains a metal or the NH_4^+ ion, it is likely IONIC

H_2O H_2O_2

- If the formula starts with H and is not either water or hydrogen peroxide, the compound is likely an ACID. Which kind?
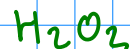
      - BINARY ACIDS contain only two elements

      - OXYACIDS contains oxygen

- If the formula contains only nonmetals (and is not an ammonium compound or an acid), the compound is likely MOLECULAR

Examples:

PCl_3 : BINARY MOLECULAR
     Name: phosphorus trichloride

NH_4Cl : IONIC (ammonium ion)
     Name: ammonium chloride

H_3PO_4 : OXYACID (hydrogen, phosphate)
     Name: phosphoric acid

$Fe_2(SO_4)_3$: IONIC (iron - metal!)
     Name: iron(III) sulfate

Fe^{3+} SO_4^{2-}
Fe^{3+} SO_4^{2-}
     SO_4^{2-}