When and how to dissociate compounds into ions:

Dissociation- an ionic compound breaking into its ions in solution with water

2 types of dissociation occur:

1.) Complete $\longrightarrow$

2.) Incomplete (equilibrium) $\rightleftharpoons$

Who dissociates completely?

Who dissociates as an equilibrium (incompletely)?

Determining strength of an acid:

	Strong (SA)	Weak (WA)
Binary:	HCl, HBr, HI	Rest = weak (H_2S, HF, HCN...)
Oxyacids:	#O - #H $\geq$ 2 = SA	#O - #H = 1 or 0 = Weak Acid (WA)
Organic acids: (Contain only C, H, O)	None are strong	All are weak

Base Strength

Strong bases: any OH- ion that is soluble by the solubility rules

Weak Bases: OH- bonded to any other cation that is IN SOLUBLE by the solubility rules

Note: NH_3 is a base (which needs added to water to dissociate) and is WEAK

Ilon

Ionic compounds:

Read/Know solubility rules!

If it is soluble by the rules = complete dissociation

If it is insoluble by the rules = incomplete (equilibrium) dissociation

How to do a dissociation:

1.) Categorize the compound (SA, WA, SB, WB, SS, IS)
2.) SA, SB, SS = $\longrightarrow$
WA, WB, IS = $\rightleftharpoons$

3.) Dissociate the compound into ions, putting charges on the ions
a.) If it is an acid, add H_2O to show formation of the H_3O^+ ion
4.) Provide the correct arrow
5.) Balance the equation by using coefficients

Ex:

HCl

$Ca(NO_3)_2$

$Ca_3(PO_4)_2$

$HC_2H_3O_2$

$Ca(OH)_2$