**<u>Remember</u>**: "**Like Dissolves Like**" (which is about attractive. forces, AF)

**Polar** solvents **dissolve polar** & **ionic** solutes

**Non**polar solvents dissolve **non**polar solutes

The more similar the solute and solvent AF the more soluble the solute will be.

For temp. effects on solubility you need to consider whether heat is a reactant (endothermic) or product (exothermic) and use Le Chatelier's Principle

**<u>exo</u>**thermic, $\Delta H_{soln} < 0$ (**heat released**, a **<u>product</u>**)

Solute + Solvent ⇌ Solution + **heat**

**<u>Inc</u>**. **T** (add heat), shifts **left** (**<u>away</u>** from **<u>added</u>** heat), **less** solution ==> **Solubility <u>Dec</u>**

- rxn shifts to use up added heat and proceeds in the **<u>reverse</u>** direction
  - shifts to left to use up added product, the heat - away from what was added (heat). As this happens you get less solution and more solute and solvent (solubility dec).

**<u>endo</u>**thermic, $\Delta H_{soln} > 0$ (**heat required,** a **<u>reactant</u>**)

Solute + Solvent + **heat** ⇌ Solution

**<u>Inc</u>**. **T** (add heat), shifts **right** (**<u>away</u>** from **<u>added</u>** heat), **more** solution ==> **Solubility <u>Inc</u>**

- rxn shifts to use up added heat and proceeds in the **<u>forward</u>** direction
  - shifts to right to use up added reactant, the heat - away from what was added (heat). As this happens you get more solution (solubility inc).