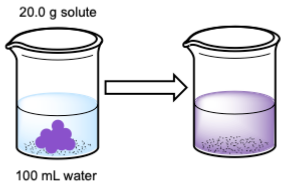
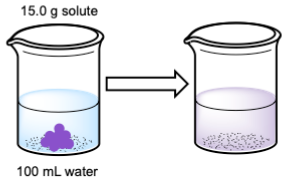
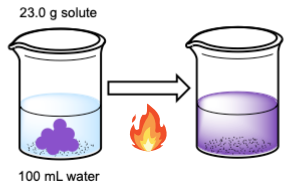
CONCEPT: TYPES OF AQUEOUS SOLUTIONS

- When _____ solutes dissolve in a solvent (water), an *equilibrium* process takes place.
  - □ **Solution Equilibrium:** rate of dissolution and *recrystallization* of solute are _____.
    - **Recrystallization**: process of dissolved solute reforming back into a _____.
  - □ Three possible aqueous solutions are created: *saturated*, *unsaturated*, or *supersaturated*.
    - *Equilibrium Concentration:* _____ amount of dissolved solute present in solution at given temp.

Types of Aqueous Solutions

Type of Solution	Amount of Dissolved Solute	Equilibrium Concentration	Example
Saturated _____	_____ solute dissolved	_____ Concentration	
Unsaturated _____	_____ solute can be dissolved	_____ than Equilibrium Concentration	
Supersaturated _____	_____ _____ solute dissolved	_____ than Equilibrium Concentration	

EXAMPLE: The solubility of a substance is 56 g per 100 mL of water at 20° C. A solution of this substance is prepared by dissolving 80 g in 100 mL of water at 75° C. The solution is then cooled slowly to 20° C without any solid forming. The solution is:

a) saturated at 20ºC b) unsaturated at 20ºC c) supersaturated at 20ºC d) supersaturated at 75ºC

PRACTICE: The solubility of $KClO_3$ in water at 30ºC is 10 g per 100 mL of water. A 0.95 M solution of $KClO_3$ in water at 30ºC is:

a) saturated b) supersaturated c) unsaturated