**Solutions Guided Notes**

* **Vocabulary:**

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| **Solution** |  |
| **Solute** |  |
| **Solvent** |  |
| **Aqueous Solution** |  |

* Solution examples - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Solution** | **Solute** | **Solvent** |
| 2 g of sugar dissolved into 100mL water |  |  |
| Gold for jewelry has added Silver, Nickel, and Zinc to make it more durable |  |  |
| Jell-O consists of solid particles that were dissolved and then left suspended in water |  |  |
| NaCl (aq) |  |  |

* To create a solution \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* What is meant by the phrase “likes dissolve likes”? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Example 1:   Lava lamps - what is the polarity of the two substances in the lamp?
* Example 2:  Oil and water.  Do they mix?
* What happens when food coloring is dropped on top of oil and water?
* Alcohols - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Dissolving Ionic Compounds | Dissolving Covalent Compounds |
| Electrolytes |

* Unsaturated solution - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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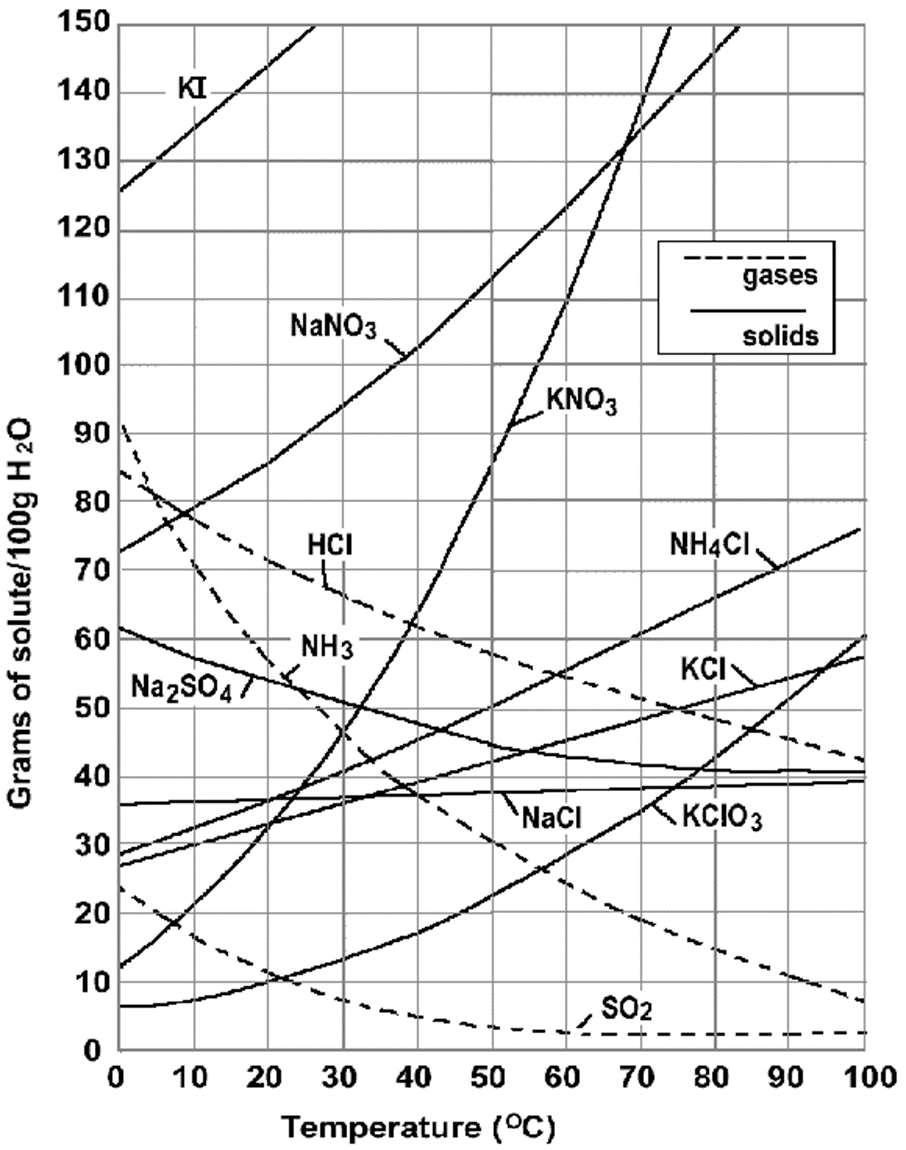
* Saturated solution - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Supersaturated solution - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Solubility** | Temperature |
| Pressure | Stirring  Solute Size/Surface Area |



**Solubility Curve**

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| **Saturated** | **Unsaturated** | **Supersaturated** |
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1. A solution has 130 g of NaNO3   
   in 100 g of water at 75oC.  Is the solution saturated, unsaturated, or supersaturated?

 What about 95 g of KNO3 in 100g water at 50oC?

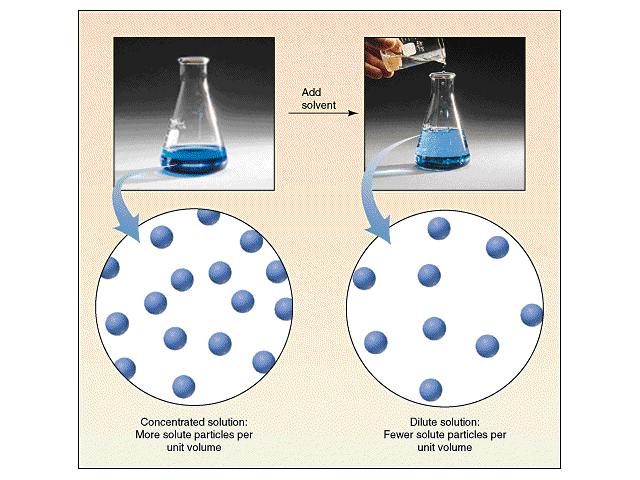
1. How many grams of KCl would dissolve in 100g of water at 90oC?
2. How many grams will dissolve in 200g of water?

* **Molarity**
  + To calculate the concentration of a solution:

1. What is the molarity of a solution in which 67 g of NaCl are dissolved in 1 L of solution?
2. How many grams of KNO3 should be used to prepare 2 L of a 1 M solution?

* How do you dilute a solution?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* **Equation for dilutions:**

1. A chemist starts with 50.0 mL of a 0.40 M NaCl solution and dilutes it to 1000. mL. What is the concentration of NaCl in the new solution?
2. If you dilute 175 mL of a 1.6 M solution of LiCl to 1.0 L, determine the new concentration of the solution.
3. A chemist wants to make 500. mL of 0.050 M HCl by diluting a 6.0 M HCl solution. How much of that solution should be used?