**Making a Solubility Table**

**Table 1. Solubility of Solutes as a Function of Temperature (in g solute/100. g H2O)**

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| **Temperature (**º**C)**  | **Solute in grams per 100.g of H2O**  |
| **10**  | **33**  |
| **30**  | **42**  |
| **50**  | **52**  |
| **70**  | **62**  |
| **90**  | **73**  |

**TASK: Using the grid below make a graph of the solubility data in Table 1. (you can graph on your own graph paper and take a picture if necessary)**

a. Label x-axis, y-axis, title the graph, and create appropriate scales for each axis. b. Plot points using a pencil.

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**Key Questions**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. What information is provided by the data in Table 1?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2. What is the relationship between temperature and solubility for this solute?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3. Is this a solid or gaseous solute?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_4. What will happen to this solute when 12g is added to 100.g of water at 20ºC?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_5. What type of solution is obtained when 12g of this solute is added to 100.g of water at 20 ºC (unsaturated, saturated, or supersaturated)?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_6. At 20 ºC, what is the maximum amount of this solute that can be dissolved in 100.g of water?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_7. What type of solution is obtained when the maximum amount of a solute is dissolved in water (unsaturated, saturated, or supersaturated)?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_8. At 20 ºC, 50.g of this solute is added to 100.g of water. What will happen to the extra solute?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_9. What type of solution is obtained under the conditions in Question #7 (unsaturated, saturated, or supersaturated)?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_10. A solution is made by dissolving 60.g of this solute in 100.g of water at 80ºC. This solution is allowed to cool to 50ºC and all of the 60.g of solute remains dissolved in the solution. At 50ºC, what is the maximum amount of this solute that can be dissolved in 100.g of water?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_11. What type of solution is obtained under the conditions in Question #9 (unsaturated, saturated, or supersaturated)?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_12. Rock candy is made by dissolving large amounts of sugar in water at very high temperatures. The candy solution is then allowed to cool. What type of solution is rock candy (unsaturated, saturated, or supersaturated)?