

Solutions and Gases: Objectives and Vocabulary

By referring to the various handouts, notes, lab activities and homework covered during this unit, then at the end of this unit of study, each student should be able to:

1. Define what a solution is using the terms solute and solvent.
2. Describe various types of solutions such as concentrated, dilute, saturated, unsaturated, and supersaturated in terms of solute and solvent.
3. Explain how to test for saturated, unsaturated, and supersaturated solutions and the specific results to look for.
4. Calculate the concentration of a solution when given the appropriate information using the formula concentration in $\text{g}/\text{cm}^3 = \text{mass of solute in grams} \div \text{volume of solvent in cm}^3$.
 - determine solubility of substances in $\text{g}/100 \text{ cm}^3$
 - calculate the amount of solvent or solute required to make a specific solution(use the triangle formula).
5. -determine if a solution is saturated, unsaturated, or supersaturated, based on its location on a solubility graph.
6. -identify a substance on a solubility graph given it's temperature and mass of solute per $\text{g}/100 \text{ cm}^3$ water.
 - determine the solubility of a substance or it's temperature on a solubility graph.
7. -identify what factors affect the solubilities of gases.
 - describe the specific affects that the above mentioned factors have on the solubilities of gases.
 - interpret everyday phenomenom that happen, in terms of these factors.
8. -use their knowledge about solutions,solvents and solutes to explain why some things in the modern world are done a certain way, or work the way that they do.
 - use their knowledge about solutions,solvents and solutes to predict what may happen in a certain situation.

Vocabulary:

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| solution | unsaturated |
| solute | supersaturated |
| solvent | concentration |
| concentrated | solubility |
| dilute | solubility graph |
| saturated | ammonia |