Subject: General Chemistry Kim Dallas
Grade: 11 & 12, Level 1 5-16-06
Unit: Solutions, Acids & Bases

Lesson: Solutions: Solubility & Concentration

Objectives: The students will be able to:
1. Identify and describe three types of solutions.
2. Define solubility and apply the concept of solubility to a solubility of curve of various solutes dissolved in water.
3. Calculate the molarity and molality of solutions given appropriate quantities.

Academic Standards:
3.4.12.A – Quantify the properties of matter (e.g., density, solubility coefficients) by applying mathematical formulas.

Content: Mixtures (homogeneous, heterogeneous), suspensions, colloids, solutions (unsaturated, saturated, supersaturated), solvent, solute, concentrations, dilute, concentrated, solubility, factors affecting solubility, solubility curves, molarity, molality.

Materials and Equipment: Matter diagram, worksheet p. 67 "Solubility Curves," worksheet p. 68 "Molarity," worksheet p. 70 "Molality."

Activity:
1. Introduction to New Unit
   - distribute objective list to students and review the material that will be studied in this unit.
2. Matter Worksheet
   - place matter worksheet transparency on overhead;
   - most of this diagram is a review from an earlier unit, the parts that are not review will be discussed in class to complete the graphic organizer of information pertaining to solutions.
3. Solubility Notes
   - discuss factors affecting solubility (temperature and pressure);
   - relate these concepts to bottling soda; how soda manufacturers inploy chemical concepts to process and bottle soda;
   - solubility curves worksheet p. 67 – go through the first example as a class. Students will work together to complete the remaining questions.
4. Molarity & Molality Notes
   - define terms;
   - perform a sample calculation;
   - guided practice on the first problem from each worksheet;
   - partner work to complete the remaining worksheet items;
   - review the answers as a class.

Assessment:
1. Teacher observation via in-class participation.
2. How well the students complete the worksheet; appropriateness of results
3. Quiz on Friday.