Featuring Molecules Class: Veatta Berry Teacher's Guide

Goals

- To help students visualize concepts
- To let students be creative in presenting new concepts such as solutions and dissolving

The Class

In this class, students use their imagination to act out molecules in solution. They have to visualize the dissolution of molecules and the factors affecting it.

Lecture Notes—Molar Concentration

Draw two flasks on the blackboard: One large flask with 20 moles of NaCl and one small flask with five moles of NaCl.

Which flask is going to weigh less?

Does this automatically mean that in the small flask there is a more dilute solution?

We need a better way to compare the concentration in both flasks.

If we calculate the number of moles, relative to the volume of liters, we get the MOLAR concentration of solutions in the flask.

Activity

Instruct the students to imagine how a single molecule of sucrose is:

Taken out of the container

Made into a cup of Kool-Aid

Put on some ice

Create a skit, a poem, or a short story to present in class.

Teaching Tips From Ms. Berry

The activity allows non-science majors to use their imagination.

The students express their ideas and reveal their misconceptions.

The activity helps to relate between the solution and molecules.

References: Links

http://www.external.ameslab.gov/News/Inquiry/fall97/action.html
New technology to track the behavior of a single molecule.

References: Readings

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Nicoll, G., Francisco, J.S., and Nakhleh, M. (2001) "An Investigation of the Value of Using Concept Maps in General Chemistry," *Journal of Chemical Education,* Vol. 78, No. 8, pp: 1111-1117.

Russell, J. W., Kozma, R.B., Jones, T. Wykoff, J., Marx, N., and Davis, J. (1997) "Use of Simultaneous-Synchronized Macroscopic, Microscopic, and Symbolic Representations To Enhance the Teaching and Learning of Chemical Concepts," *Journal of Chemical Education,* Vol. 74, No. 3, p: 330.