

Stephanie Whitney
High School (Algebra 2)
Cool Tools to Solve Word Problems
Percent Concentration Problems

A. Objectives:

- Students will build a model of a percent concentration problem and will develop a formula which can be used to solve similar problems
- Algebra 2 PASS Skill 2:11
Students will solve multistep problems using concepts of percents.
- NCTM Standards
Algebra 9-12
 1. Use symbolic algebra to represent and explain mathematical relationships.
 2. Draw reasonable conclusions about a situation being modeled.

Resources:

NCTM Illuminations activity “Making Sense of Percent Concentrations”
Found at <http://illuminations.nctm.org/LessonDetail.aspx?ID=L640>

Materials: (for each group)

- A container of white beads
- A container of red beads
- A measuring scoop
- 3 empty containers
- Copy for teacher of overhead projection sheet
- Copy for each student: student activity “Mix it up”, and assessment questions

B. Instruction

a. Introduction:

I will write an example of a mixtures problem on the board. For example (this is a problem from Saxon’s Algebra 2 book):

“Two solutions are to be mixed to make 50 ml of a solution that is 16% bromine. One solution is 10% Bromine and the other is 40% bromine. How much of each should be used?”

We will discuss what answers would make sense, which quantity we will need the most of and why. Next, I will show an overhead with some more sample thinking problems with percent in component mixtures (from Illuminations activity listed above)

<http://illuminations.nctm.org/Lessons/PercentConcentrations/MixItUp-OVH-Mixtures.pdf>

b. Instructional Process

I will break the students up into groups of two for the activity. I will give each group their materials and a copy of the mix it up activities sheet