Solving Proportions

- New Jersey Core Curriculum Content Standards
  - 4.1 (Number and numerical operations) All students will develop number sense and will perform standard numerical operations and estimations on all types of numbers in a variety of ways.
  - 4.3 (Patterns and Algebra): All students will represent and analyze relationships among variable quantities and solve problems involving patterns, functions, and algebraic concepts and processes.
  - 4.5 (Mathematical processes) All students will use mathematical processes of problem solving, communication, connections, reasoning, representations, and technology to solve problems and communicate mathematical ideas.

- Learning Objectives
  - Students will be able to solve proportions by finding and multiplying by a scale factor.
  - Students will be able to solve proportions by using cross multiplication.

- Materials
  - Math Journals, 4.3 Solving Proportions worksheets & transparency, and A.C.E. 4.3 worksheets.

- Motivation
  - Math Journal
    * Students will review the process of setting up proportions using ratios and rates.
    * You are filling a small above-ground pool. It takes 36 minutes to pump 750 gallons of water. If the pool requires 1000 gallons, how long will it take to fill the pool?
      (a) Set up a proportion using ratios.
      (b) Set up a proportion using rates.

- Procedure
  - Jigsaw
    * Students will be broken into 2 groups. One will focus on solving proportions using scale factor. The other group will concentrate on solving proportions using cross multiplication.
    * A worksheet, including notes, will be distributed to the groups.
    * Students will be given approximately 15 - 25 minutes to complete the exercises and write a brief explanation.
    * Groups will present their solutions and explanation to the class.
  - Closure
    * During the last 10 minutes of class the teacher will summarize the steps to solving proportions using scale factor and solving proportions using cross multiplication.

- Assessment
  - Class participation
  - 4.3 Solving Proportions worksheet
  - A.C.E. 4.3

- Homework
  - A.C.E. 4.3