

Gecko Math Project Final Report
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Unit Description

A unit on multiplying fractions was implemented in the seventh grade curriculum during the 2008-09 school year. The unit is outlined as follows:

Day 1 pretest

Day 1 Intro Situation/Problem (Inquiry)

Day 2 More inquiry time (15-20) minutes

Day 2 4 meanings of fractions w/ examples

Day 3 lesson 1 (natural x proper) ($5 \times \frac{2}{3}$)

Added activity – fraction circles and measuring cups

Day 4 lesson 2 (natural x mixed) ($3 \times 1 \frac{1}{2}$)

Added activity – fraction strips

Day 5 lesson 3 (proper x natural) ($\frac{5}{6} \times 8$)

Added activity – number line (sleeve)

Day 6 lesson 4 (mixed x natural) ($2 \frac{1}{2} \times 4$)

Added activity – measuring cups

Day 7 lesson 5 (unit fraction x unit fraction) ($\frac{1}{2} \times \frac{1}{3}$)

Added activity – folding paper

Day 8 lesson 6 (proper x proper) ($\frac{2}{3} \times \frac{3}{5}$)

Added activity – folding paper

Day 9 lesson 7 (mixed x mixed) ($2 \frac{1}{3} \times 1 \frac{3}{4}$)

Added activity – grid paper or number cubes

Day 10 lesson 8-9 (multiplying 3 fractions)

Added activity – shapes and number line

Day 11-12 lesson 10-11 practice

Day 13 post test

Data

The average gain in percentage scores was 36 percentage points. All students improved. The range of improvement was from a 9 percentage point gain to a 66 percentage point gain. The average percent of increase in scores was 153%.

The mean pre-test score was 20%, and the mean post-test score was 57%. The data indicated that all students had significant gains in achievement.

Pre and post tests

Copies of the pre-test, post-test and scoring guides are included as attachments.

Analysis of the unit

Overall the unit was a success. The students made great gains in their knowledge of fractions and more specifically multiplying fractions. It was a challenge to have the students explain or draw the concepts on a number line. It became evident that his method of instruction had not been a part of their previous math education. The paper folding process used to illustrate multiplying mixed numbers was the most challenging aspect of the unit. Technology was incorporated into the unit through the use of Smart Technologies, Notebook, and e-Instruction (clickers). The Smart Technologies and Notebook were used for presentation / demonstration purposes. The purpose for implementing the e-Instruction technology was for student engagement and immediate feedback.

Changes to the unit that I will make for next year include modifying the assessments. There were too many problems that included illustrating their thinking on number lines.