Constructing Task: Write About Fractions

Adapted from Fosnot, C. The Field Trip, Context for Learning Mathematics.

STANDARDS FOR MATHEMATICAL CONTENT

MCC4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as ½. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Many students develop misconceptions about adding fractions, thinking the numerators can be added and denominators can be added. For example, they might think that

$\frac{1}{3} + \frac{1}{2}$ equivalent to $\frac{2}{5}$

ESSENTIAL QUESTIONS

- How can you compare fraction quantities without adding fractions?
- How do you know fractions are equivalent?
- What can you do to decide whether your answer is reasonable?

MATERIALS

- Connecting cubes
- Strips of equal length paper

- Write About Fractions task sheet
- Fraction Kits

GROUPING

Individual

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Comments: students have had some opportunities to work with comparing unit fractions with different denominators in context. By exploring this procedure in context and examining the results, students are supported to develop deep understandings about fractions, thereby avoiding common misconceptions.

Task directions:

Students will follow the directions below from the "Write About Fractions" task sheet.

Write a convincing argument for the following statement:

$$\frac{1}{2} + \frac{1}{3} \quad \textbf{does not equal} \quad \frac{2}{5}$$

FORMATIVE ASSESSMENT QUESTIONS

- What do you notice about the unit fractions you have created?
- How can drawing a model help you answer this question?
- What strategies can you use to help write about this topic?
- Can you give me an estimated size of the fraction you created with that cut?
- Does your answer make sense? How do you know?

DIFFERENTIATION

Extension

- In addition to this task, student can identify a fraction that is equal to ½ + 1/3.

Intervention

- Provide fraction strips the students can manipulate to determine their response.
- Encourage students to use words, numbers and/or pictures in their explanation.

Name _____ Date_____

Write About Fractions

Write a convincing argument for the following statement:

$$\frac{1}{2} + \frac{1}{3} \quad \textbf{does not equal} \quad \frac{2}{5}$$