

DELTA MATH SCIENCE PARTNERSHIP INITIATIVE

M<sup>3</sup> Summer Institutes

(Math, Middle School, MS Common Core)

**Division of Fractions**

**Hook Problem:** Divide  $\frac{5}{12}$  by  $\frac{7}{16}$  without omitting any steps.

**Final Answer:**

---

**Teacher Model:** Sue is making homemade jam. Her recipe yields three cups. How many  $\frac{2}{3}$  cup jars can she fill?

**5 groups of 4 people:**

1. Use c-rods to model a solution.

Journal your thought process to complete the two models.

**Guiding Questions:** What does any leftover rod represent? What part of the original amount?

2. Share your ideas and solutions.
3. Demonstrate how to solve the jam problem using a 3-cup measure of colored water and five 1-cup measures.

4. Journal the thought process involved in modeling the solution.
5. Using number lines, demonstrate common denominator division.
  
6. Use number lines to divide fractions with common denominators.

$$\frac{1}{2} \div \frac{1}{3} \qquad \frac{1}{2} \div \frac{3}{4}$$

**Guiding Question:** What happens when the divisor is larger than the dividend?

7. Journal results and thought processes to solve.
8. Additional problems:
  - a. On the map,  $\frac{3}{4}$  of an inch represents 1 mile. If town X and town Y are  $2\frac{1}{8}$  inches apart on the map, what is the actual distance between the two towns? Participants should use number lines to model the solution.

b. Susan has  $\frac{2}{3}$  of an hour left to make cards. It takes her about  $\frac{1}{6}$  of an hour to make each card. About how many cards can Susan make? Use a number line to model the solution.

c. Michael has  $\frac{1}{2}$  of a yard of fabric to make book covers. Each book cover is made from  $\frac{1}{8}$  of a yard of fabric. How many book covers can Michael make?

d. Susie has  $5\frac{1}{2}$  pounds of sugar. She wants to make cookies for her daughter's class. The recipe calls for  $\frac{2}{3}$  pounds of sugar per dozen cookies. How many dozen cookies can she make?

9. Discussion of "Hook Question." Demonstrate solution.

10. Identify Common Core State Standards.

11. Identify mathematical practices and tell why they chose what they did.



*Peanuts* copyright © 1979, 2011 by United Features Syndicate, Inc.

### Homework

Solve each problem using a number line to model and the divide across method.

12.  $\frac{6}{7} \div \frac{1}{5}$

13.  $10 \div 1\frac{1}{2}$