- Represent children's solutions with equations, with an emphasis on linking addition and multiplication and on equations that reflect a multiplicative understanding of fractions. For example, if students solved a problem about 8 children sharing 5 burgers you might write the following equations:
- 1/8 + 1/8 + 1/8 + 1/8 + 1/8 = 5/8 ("Lura drew 5 hamburgers and gave each person and eighth of each hamburger. She put the pieces together and said that 1/8 plus 1/8 plus 1/8 plus 1/8 plus 1/8 is 5/8. Does this equation show what Lura did?)
- 5 x 1/8 = 5/8 ("Shelly drew 1 hamburger and split it into 8 pieces. She said that each person would get 1/8 of this hamburger. The other hamburgers would look the same as this and she said 5 groups of 1/8 is the same as 5/8.")
  - 5 divided by 8 is 5/8 ("Krystal said that she knows that when 5 things are shared by 8 people, each person gets 5/8.")
- Represent the word problem situation using equations.
  - 8 children are sharing 5 hamburgers equally. How much hamburger does one child get?
    - $5 \div 8 = \square$
    - $8 \times \square = 5$

DIFFERENTIATION

Extension

- Allow students to investigate other shares and sharers as identified above. To challenge students, especially with large numbers of sharers, insist that students represent their fractions in multiple ways. For example, our team of 100 5th grade students is sharing the challenge of running a 40 mile race for charity. How many miles is each student's responsibility? Students could shade in a 10x10 grid, show the fraction as 40/100 and (0.40), then show it again as 4/10 (0.4) and again as 2/5.

Intervention

- Use smaller numbers of sharers. For example, give students one or two candy bars that have 2-3 sharers. The use of student created or commercial manipulatives, with teacher guidance and questioning, will help students develop the concept of fractions as division.

Technology

http://nlvm.usu.edu/en/nav/category_g_2_t_1.html the national library of virtual manipulatives has several activities for students to practice operations and understanding of fractions.

http://calculationnation.nctm.org/Games/ this site, from NCTM, has engaging and sometimes addictive games for practicing calculations based on strategy.

http://www.k-5mathteachingresources.com/ this site offers simple contextual problems to use to extend and support students in their understanding of fraction computation and all problems are correlated to CCSS.
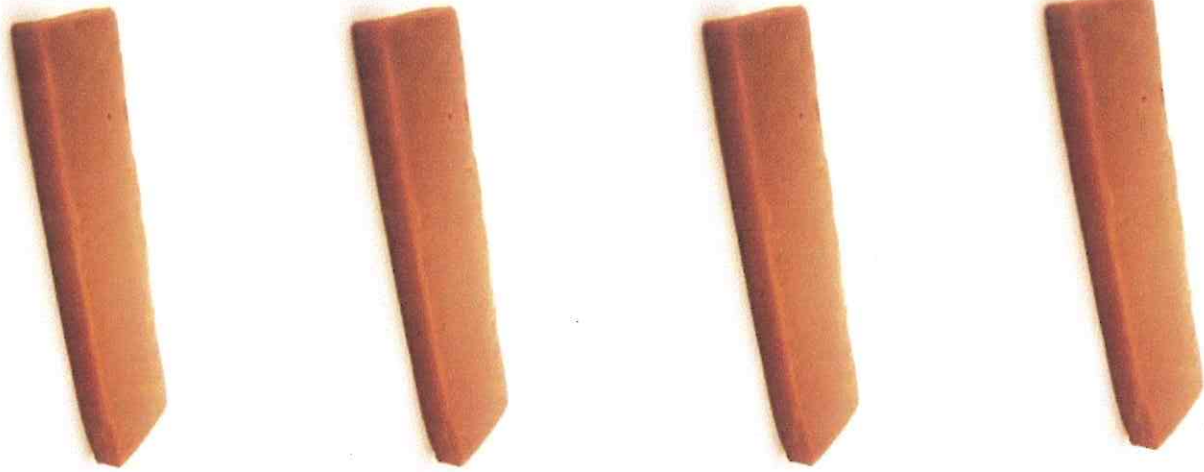
Sharing Candy Bars Differently

After looking at your first investigation, perhaps there is a way to make this sharing of candy bars more fair. Do you think it would be fairer if groups 1 and 3 combined and shared, and groups 2 and 4 combined and shared?
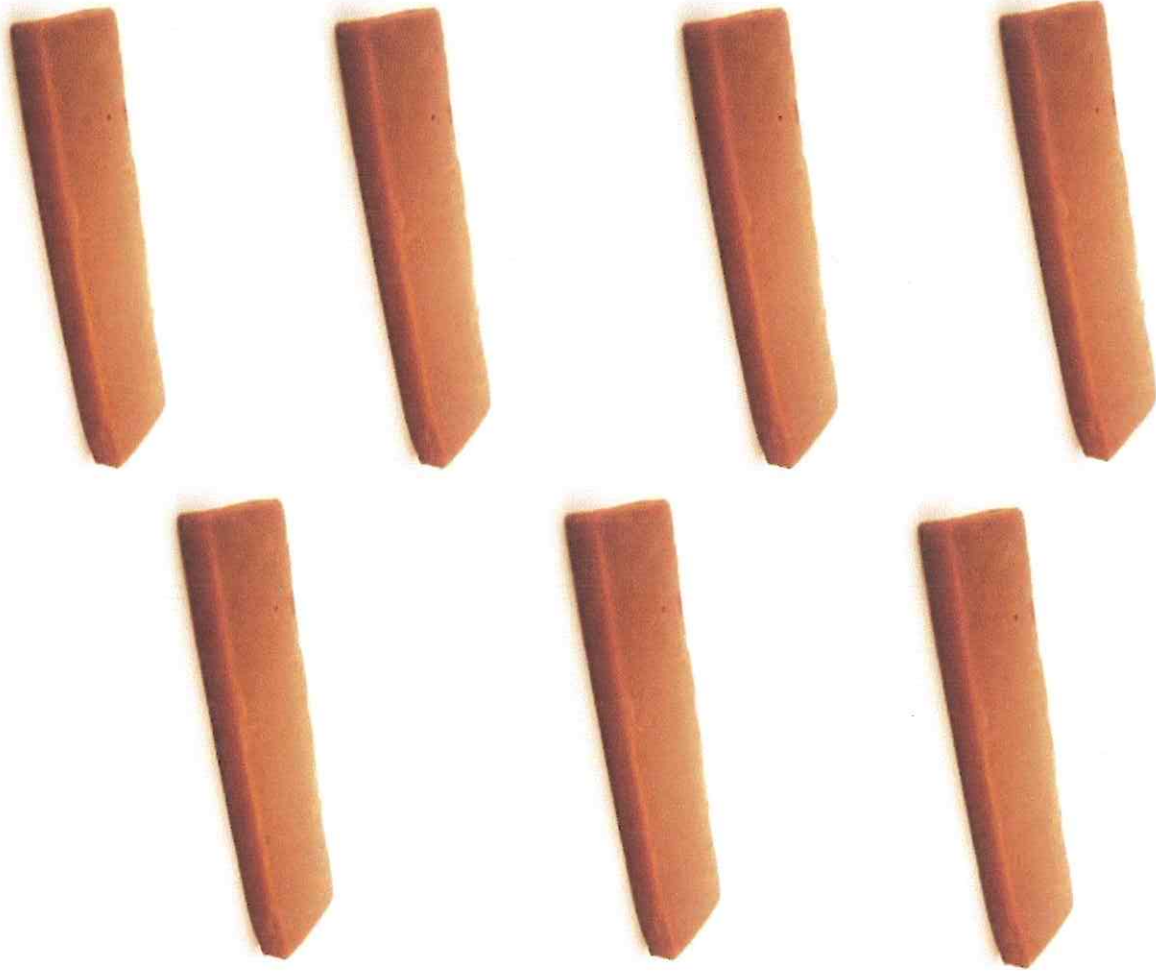
Group 1. Four people share these three candy bars.
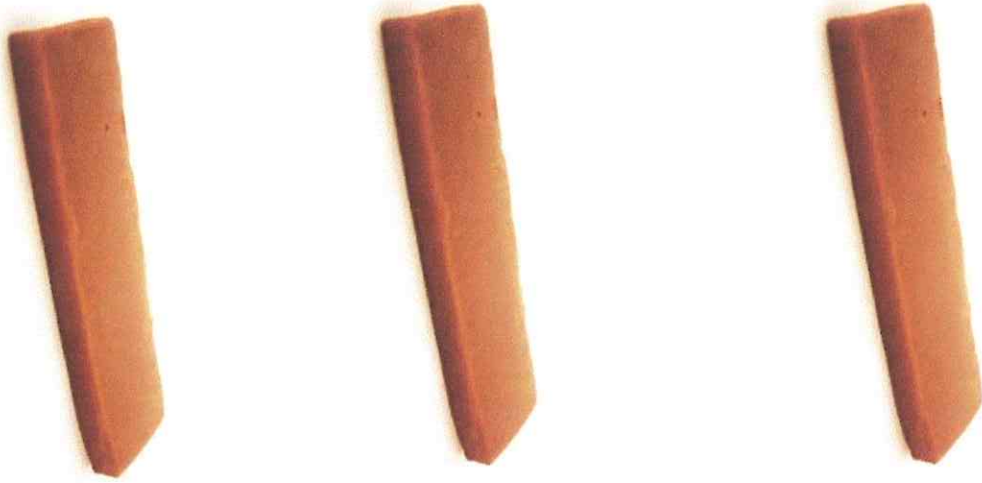
Group 2. Five people share these four candy bars.

Group 3.   Eight people share these seven candy bars.

Group 4.   Five people share these three candy bars.