

Candy Bar Fractions

Reporting Category Number and Number Sense

Topic Comparing, ordering, and representing fractions and identifying the division statement that represents a fraction

Primary SOL 4.2 The student will
 a) compare and order fractions and mixed numbers;
 b) represent equivalent fractions; and
 c) identify the division statement that represents a fraction.

Related SOL 4.5b

Materials

- Egg Carton Recording Sheet (attached)

Vocabulary

fraction, whole, part, numerator, denominator, like denominators, unlike denominators, greater than, less than, equal to, represent

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

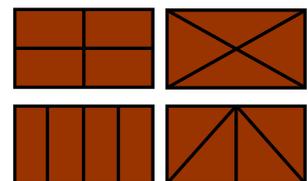
1. Display a large rectangle to represent a large candy bar. Ask students, “If this was a candy bar and I wanted to share it equally with one friend, where could I break or cut it? Why is it important to break it carefully? How much of the *whole* candy bar would each of us get?”

Write $\frac{1}{2}$ on the board, and draw a vertical cut line down the center of the bar. Point to one half of the bar, and ask, “How do you know this is a half?” (Two equal-size pieces make a whole, and this is one of the two pieces.) Ask, “How many halves make a whole bar?” Write $\frac{2}{2}$ on the board. Ask students to name this fraction. (two halves or one whole)

2. Next, ask, “Can we cut this candy bar differently and still have equal halves?” Elicit responses and allow students to instruct you on how to divide the bar differently. (horizontally or diagonally in two different directions) Ask, “How do you know these two pieces are equal-size or $\frac{1}{2}$?” Repeat this step to show the remaining possible cuts.

3. Now, ask students, “If I wanted to share the candy bar equally with *three* friends, where could I cut it? How much of the *whole* candy bar would each of us get?” Write $\frac{1}{4}$ on the board, and draw a vertical cut line down the center of the candy bar and a horizontal cut line across the center of the bar.

4. Next, ask, “Can we cut this candy bar differently and still have four equal-size pieces?” Allow students to illustrate their ideas, and challenge them to come up with several solutions, as shown at right. Take this opportunity to review the definition of *numerator*



(the number of equal parts of the whole or set being considered or described) and the definition of *denominator* (the number of equal parts that make the whole or the complete set).

5. To demonstrate the relationship between division and fractions, ask students to discuss with a partner what they notice about the number of people sharing each candy bar and how much of each bar each person gets. Have students share discussions with the class. Say, “When we share a candy bar, we have to cut it or *divide* it (write the division symbol on the board as you say the word) equally. How could I use this symbol to write a number sentence that shows how we shared this candy bar between four friends?” ($1 \div 4 = \frac{1}{4}$). This means 1 candy bar divided between 4 friends equals $\frac{1}{4}$. Therefore, each person gets $\frac{1}{4}$ of the bar.”
6. Repeat this activity with thirds, sixths and eighths. Each time, have students relate the division statement to the fraction.

Assessment

- **Questions**
 - If I had a candy bar that was already cut into fourths and I shared it with one friend (two persons sharing the whole candy bar), how much would each person get? How do you know?
 - If I had two candy bars to share among myself and two friends, how would I divide the two bars among the three persons equally? How much would each person get?
- **Journal/Writing Prompts**
 - In your math journal, explain how a candy bar could equally be shared among 9 friends. Identify how much each person would get, and explain how you know. Support your reasoning with an illustration.
 - Write a short story about sharing a candy bar, brownie, or sandwich with friends. You decide how many persons will share the item. Your story should explain how much each person gets and how you divided the item. Support your reasoning with an illustration.

Extensions and Connections (for all students)

- Have students work in pairs to make sandwiches in class and illustrate different ways to divide their sandwiches equally into a variety of fractional portions. Have students write the appropriate division sentence that illustrates each fraction.
- Have students use an illustration of an egg carton (attached) to illustrate divisions equivalent to $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{6}$.

Egg Carton Recording Sheet

