

**Lesson
4.4b**
Dividing a Fraction by a Unit Fraction
Objectives

- Divide a fraction by a unit fraction.

California Standards

NS 2.2: Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisors.

NS 2.4: Understand the concept of multiplication and division of fractions.

MR 2.2: Apply strategies and results from simpler problems to more complex problems.

MR 2.3: Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Teaching Strategies
Illustrating division of a fraction by a unit fraction when the answer is a whole number

Ask students what fraction of a quart a cup is. There are 4 cups in a quart, so a cup is $\frac{1}{4}$ of a quart.

Tell students you have half of a quart of juice and want to divide it into cups. Each cup is $\frac{1}{4}$ of a quart, so you are dividing $\frac{1}{2}$ quart by $\frac{1}{4}$ quart.

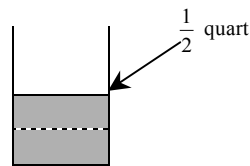
Draw a picture of a container and mark $\frac{1}{2}$ quart on the container. How many cups will you need?

Students should be able to tell you intuitively that you need 2 cups. There are 2 cups, or two $\frac{1}{4}$ quarts in $\frac{1}{2}$ quart.

Write $\frac{1}{2} \times 4$ and ask students to solve the problem. Point out that we get the same answer as we did with $\frac{1}{2} \div \frac{1}{4}$. To divide $\frac{1}{2}$ by $\frac{1}{4}$, we can multiply $\frac{1}{2}$ by its reciprocal, 4.

Discuss **task 6, Textbook p. 93**. Ask students to illustrate these problems with bars.

$$\frac{1}{2} \div \frac{1}{4} = 2$$



$$\frac{1}{2} \times 4 = 2$$

$$\frac{1}{2} \times 4 = 2$$

$$\frac{1}{2} \div \frac{1}{4} = \frac{1}{2} \times 4 = 2$$

Textbook p. 93

$$6. \quad (a) \quad \frac{2}{3} \div \frac{1}{3} = \frac{2}{\cancel{3}_1} \times \boxed{3}^1 = \boxed{2}$$

$$(b) \quad \frac{2}{3} \div \frac{1}{6} = \frac{2}{\cancel{3}_1} \times \boxed{6}^2 = \boxed{4}$$