

Dimensions Math

Grade 4 Letter Home #8

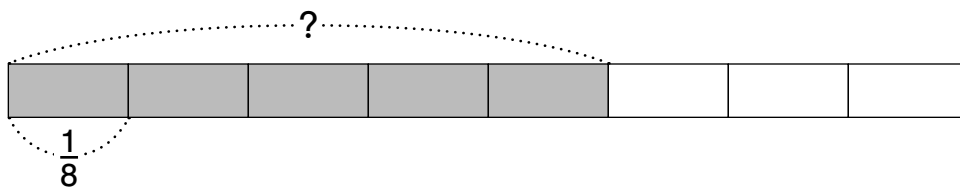
Chapter 8 Multiplying a Fraction and a Whole Number

Dimensions Math
Letters Home

Home Connection

In this chapter, your child deepens their understanding of fractions by learning to multiply fractions and whole numbers.

Students begin by connecting multiplication of a fraction to what they know about whole numbers: multiplication is repeated addition.



$$5 \times \frac{1}{8} = \frac{5 \times 1}{8} = \frac{5}{8}$$

$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{?}{8}$$

While adults may have learned to express the 5 here as $\frac{5}{1}$, your child will not learn to multiply a fraction by another fraction until Dimensions Math 5.

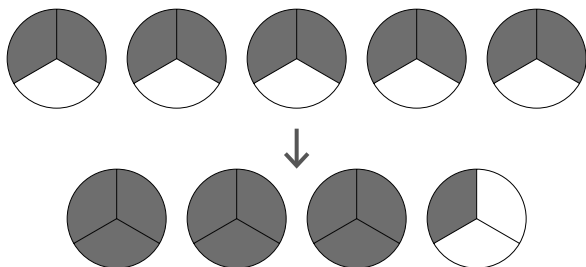


5×1 eighth = 5 eighths



As before, answers may need to be simplified.

Find the product of 5 and $\frac{2}{3}$:



$$5 \times \frac{2}{3} = \frac{5 \times 2}{3} = \frac{10}{3} = 3\frac{1}{3}$$

Your child will learn that the numbers in the problem can also be simplified.

Students can simplify the answer:

$$6 \times \frac{2}{3} = \frac{6 \times 2}{3}$$

$$= \frac{12}{3}$$

$$= 4$$

Or simplify the problem before calculating:

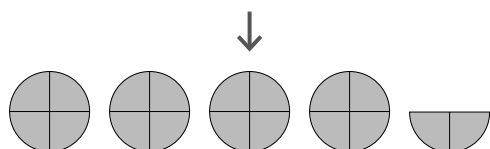
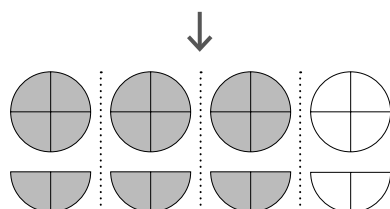
$$2 \times \frac{3}{8} = \frac{\overset{1}{\cancel{2}} \times 3}{\cancel{8}_4} = \frac{3}{4}$$

$$\frac{2 \times 3}{8} = \frac{1 \times 3}{4}$$



Next, your child will consider multiplication of fractions as finding a fraction of a set.

6 pizzas were delivered for a Pizza and Play night. $\frac{3}{4}$ of the pizzas were eaten.
How many pizzas were eaten?



$$\frac{1}{4} \text{ of } 6 \longrightarrow \frac{6}{4}$$

$$\frac{3}{4} \text{ of } 6 \longrightarrow 3 \times \frac{6}{4} = \frac{18}{4}$$

$$= \frac{9}{2}$$

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

$$\frac{3}{4} \times 6 = \frac{3 \times \overset{3}{\cancel{6}}}{\cancel{4}_2}$$

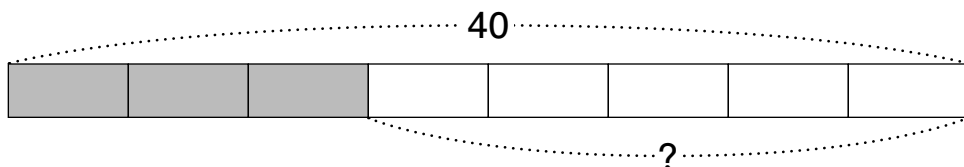
$$= \frac{9}{2}$$

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

$4\frac{1}{2}$ pizzas were eaten.

The bar model your child has been working with since Dimensions Math 3A helps students visualize problems.

Dion had \$40. He used $\frac{3}{8}$ of it to buy a game.
How much money did he have left?



Method 1

$$\frac{1}{4} \times 40 = \frac{3 \times \overset{5}{\cancel{40}}}{\underset{1}{\cancel{8}}} = 3 \times 5 = 15$$

$$40 - 15 = 25$$

Method 2

$$1 - \frac{3}{8} = \frac{5}{8}$$

$$\frac{5}{8} \times 40 = \frac{5 \times \overset{5}{\cancel{40}}}{\underset{1}{\cancel{8}}} = 25$$

Dion had \$25 left.

What can we do at home?

Involving your child in the kitchen can be a fun way to practice measurement. Try doubling the recipe, halving the recipe, and converting measurements.