

# Dimensions Math

## Grade 5 Letter Home #5

### Chapter 5 Multiplication of Fractions

Dimensions Math  
Letters Home

## Home Connection

In Chapter 5, your child will learn how to multiply a fraction by a fraction.

Your child begins by reviewing how to multiply a fraction and a whole number, which they learned in Dimensions Math 4A.

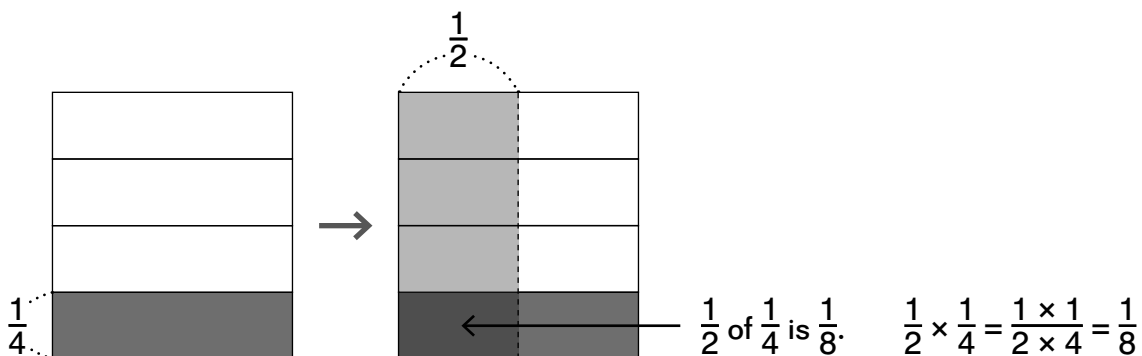
$$\begin{aligned} 6 \times \frac{2}{3} &= \frac{6 \times 2}{3} \\ &= \frac{12}{3} \\ &= 4 \end{aligned}$$

Or simplify the problem before calculating:

$$\begin{aligned} 6 \times \frac{2}{3} &= \frac{\cancel{6}^2 \times 2}{\cancel{3}_1} \\ &= 4 \end{aligned}$$

Note that students do not yet know how to multiply two fractions, so we don't show this problem as  $\frac{6}{1} \times \frac{2}{3}$ .

Next students will learn that when multiplying a fraction by a fraction, they simply need to multiply the numerators and then multiply the denominators.



After learning to multiply proper fractions (the numerator is less than the denominator), your child will learn how to multiply mixed numbers. To do this, the mixed number must first be converted to an improper fraction.

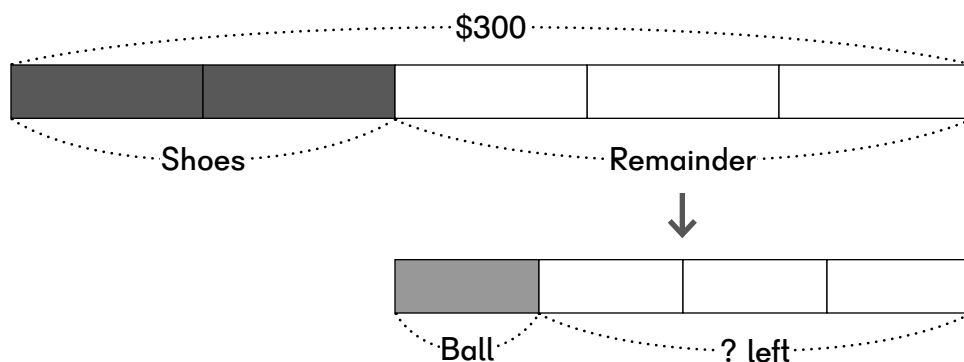
$$1\frac{1}{2} \times 1\frac{1}{3} = \frac{\cancel{3}^1}{\cancel{2}_1} \times \frac{\cancel{4}^2}{\cancel{3}_1} = 2$$



Express the mixed numbers as improper fractions.

Your child will learn to solve word problems involving the multiplication of fractions. Bar models can be helpful to solve this type of problem.

Yara had \$300. She spent  $\frac{2}{5}$  of it on soccer shoes and  $\frac{1}{4}$  of the remainder on a soccer ball. How much money does she have left?



From the model, students may solve the problem different ways:

5 larger units  $\longrightarrow$  300

3 larger units  $\longrightarrow \frac{1}{5} \times 300 \times 3 = 180$

4 smaller units  $\longrightarrow$  180

3 smaller units  $\longrightarrow \frac{1}{4} \times 180 \times 3 = 135$

Spent on shoes:  $\frac{2}{5} \times 300 = 120$

Remainder:  $300 - 120 = 180$

Spent on ball:  $\frac{1}{4} \times 180 = 45$

Money left:  $180 - 45 = 135$

Finally, in Chapter 5 your child will be introduced to reciprocals. A reciprocal is the number we multiply by to get a product of 1. For example, the reciprocal of  $\frac{2}{3}$  is  $\frac{3}{2}$  because when we multiply  $\frac{2}{3} \times \frac{3}{2}$ , we get  $\frac{6}{6}$ , which is 1. This will be important to understand when students start dividing fractions in Chapter 6.

### What can we do at home?

- Math games are a good way to have fun with fractions. “Greatest Product” is a game that uses a stack of number cards (1–9), which can be created with notecards. To play, each player gets 3 cards. Two of the cards become a fraction, and the third is the multiplier. The winner is determined by who can score the greatest product.
- Ask your child to tell you the reciprocal of a fraction or a mixed number to get them used to reciprocals. Keep in mind that a mixed number will have to be turned into an improper fraction first.

