

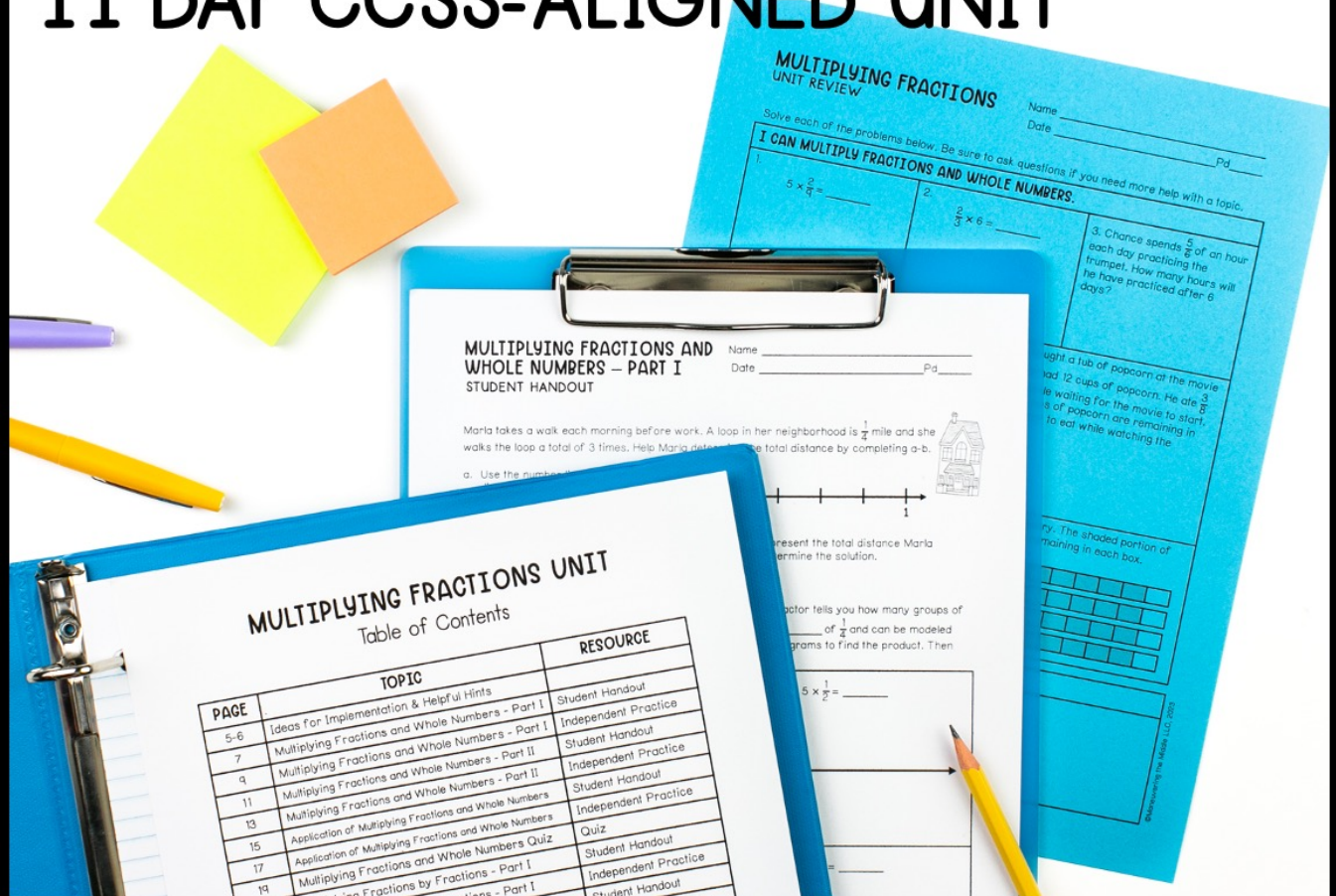
# learning focus:

- ✓ multiply a fraction or a whole number
- ✓ multiply a fraction by a fraction
- ✓ compare the size of a product to the size of its factors

# MULTIPLYING FRACTIONS UNIT

## 11 DAY CCSS-ALIGNED UNIT

**5<sup>th</sup>**  
GRADE



A MANEUVERING THE MIDDLE® RESOURCE

# MULTIPLYING FRACTIONS



an 11 day CCSS-aligned unit

CCSS: 5.NF.4a, 5.NF.4b, 5.NF.5a, 5.NF.5b, 5.NF.6,

ready-to-go, scaffolded  
student materials

## MULTIPLYING FRACTIONS UNIT

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# MULTIPLYING FRACTIONS



an 11 day CCSS-aligned unit

CCSS:5.NF.4a, 5.NF.4b, 5.NF.5a, 5.NF.5b, 5.NF.6,

student friendly + real-world application

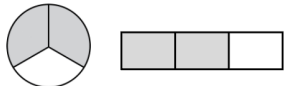
scaffolded concepts

**MULTIPLYING FRACTIONS BY FRACTIONS – PART I**  
STUDENT HANDOUT

Name \_\_\_\_\_  
Date \_\_\_\_\_ Pd \_\_\_\_\_

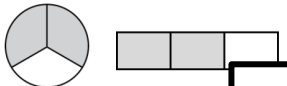
Camila has  $\frac{2}{3}$  of her red velvet cake leftover after her birthday party. She decides to give a portion of the leftover cake to her brother Carlos. She can't decide if she wants to share  $\frac{1}{2}$  or  $\frac{1}{4}$  of the leftover cake with her brother. Use parts a-c to help her decide.

a. Camila starts by considering  $\frac{1}{2}$  of the leftover cake. Demonstrate how Camila can use the two models as different ways to determine the portion of the whole cake Carlos would receive. Then complete the sentence below the models.



$\frac{1}{2}$  of  $\frac{2}{3}$  is \_\_\_\_\_ of the whole cake.

b. If Camila decides to share  $\frac{1}{4}$  of her leftover cake, how can she divide the model to help her determine  $\frac{1}{4}$  of  $\frac{2}{3}$ ? Demonstrate below by sketching your thinking on the models. Then use the adjusted models to complete the sentence below the models.




$\frac{1}{4}$  of  $\frac{2}{3}$  is \_\_\_\_\_ of the whole cake.

c. If Camila wants to share at least  $\frac{1}{5}$  of the whole cake with her brother, which portion leftovers should she share with him? Explain.

Use the suggested models to help you answer each question below.

1. The JMS yearbook has  $\frac{1}{2}$  of a page filled with soccer photos. They included text for captions on  $\frac{1}{3}$  of the soccer photo section. What portion of the page included text for soccer photos?  
Use a fraction strip to model and solve.



2. Mr. Miller has  $\frac{3}{4}$  of a pizza leftover dinner. He plans to bring  $\frac{1}{8}$  of the leftover lunch the next day. What portion of it will he bring for lunch?  
Use a circular area model to solve.

**MULTIPLYING FRACTIONS BY FRACTIONS – PART II**  
INDEPENDENT PRACTICE

Name \_\_\_\_\_  
Date \_\_\_\_\_ Pd \_\_\_\_\_

Solve each problem below. Match your answers in the table to solve the riddle.

1	$\frac{3}{7} \times \frac{3}{5}$	5	Kate goes to the gym each morning and spends $\frac{3}{4}$ of an hour running on the treadmill. She spends $\frac{2}{3}$ that amount of time lifting weights. How long does Kate spend lifting weights?
2	Of the ready-made meals at the grocery store, $\frac{1}{3}$ are Italian. Of the Italian meals, $\frac{4}{5}$ are vegetarian. What fraction of the meals at the grocery store are Italian and vegetarian?	6	$\frac{5}{9} \times \frac{3}{10}$
3	$\frac{7}{10} \times \frac{2}{3}$	7	Dillon had $\frac{3}{10}$ of a roll of paper towels. He used $\frac{2}{4}$ of what was left on the roll when cooking dinner. What fraction of the roll of paper towels did he use when cooking dinner?
4	Ms. Lopez had $\frac{5}{8}$ of a bottle of maple syrup. She used $\frac{3}{8}$ of what was in the bottle for a granola recipe. What portion of the entire bottle of maple syrup did she use to make the granola?	8	$\frac{11}{12} \times \frac{2}{3}$

T: $\frac{1}{2}$	B: $\frac{3}{10}$	F: $\frac{1}{6}$	C: $\frac{1}{3}$	V: $\frac{4}{15}$	D: $\frac{14}{15}$
H: $\frac{1}{15}$	L: $\frac{11}{18}$	W: $\frac{7}{15}$	A: $\frac{9}{35}$	M: $\frac{6}{35}$	I: $\frac{5}{16}$

I DON'T USUALLY MAKE JOKES ABOUT FRACTIONS, BUT I WILL MAKE ONE...

4   6   4   7   1   8   2   E   5   3   O

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self-checking practice

# MULTIPLYING FRACTIONS



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CCSS:5.NF.4a, 5.NF.4b, 5.NF.5a, 5.NF.5b, 5.NF.6,

## unit study guide + assessments

✓ quizzes

✓ editable unit test

**MULTIPLYING FRACTIONS AND WHOLE NUMBERS QUIZ**

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

Answer the questions below. Be sure to show your work.

1. Which students wrote a correct statement?

TYLER:  $\frac{3}{4}$  of 16 is 12. IZAK:  $\frac{4}{9}$  of 5 is 2. REECE: \_\_\_\_\_

2. Mr. Tanner wrote a multiplication problem that got erased. Fill in the blank to complete the problem.

$\frac{\square}{12} \times 6 = \square$

3. Find the product.  $4 \times \frac{4}{7} = \square$

Answer the questions below. Be sure to show your work.

4. Ruben walks his dog  $\frac{4}{7}$  of a mile each morning before he goes to work. How many miles will he have walked his dog before after 5 days?

a.  $2\frac{6}{7}$  miles  
b.  $2\frac{2}{7}$  miles  
c.  $3\frac{6}{7}$  miles  
d.  $5\frac{4}{7}$  miles

6. What is  $\frac{4}{7}$  of 3?

**MULTIPLYING FRACTIONS UNIT REVIEW**

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

Solve each of the problems below. Be sure to ask questions if you need more help with a topic.

**I CAN MULTIPLY FRACTIONS AND WHOLE NUMBERS.**

1.  $5 \times \frac{2}{9} = \square$

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

3. Chance spends  $\frac{5}{8}$  of an hour each day practicing the trumpet. How many hours will he spend practicing the trumpet in 3 days?

4. Use the model to fill in the blank to complete the expression, and then find the product.

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

6. Mrs. Patterson had several family members. The model below represents how much of the cereal she has left in the boxes.

a. Write an expression to represent the amount of cereal remaining in the boxes.

b. Determine the solution.

**I CAN MULTIPLY FRACTIONS AND WHOLE NUMBERS.**

7. Use an area model to find the product.

**MULTIPLYING FRACTIONS AND WHOLE NUMBERS – PART I STUDENT HANDOUT**

Name Answer Key Date \_\_\_\_\_ Pd \_\_\_\_\_

Marla takes a walk each morning before work. A loop in her neighborhood is  $\frac{1}{4}$  mile and she walks the loop a total of 3 times. Help Marla determine the total distance by completing a-b.

a. Use the number line to represent the total distance Marla walks each morning.

b. Write two different expressions that could be used to represent the total distance Marla walks. Then use the expression or your number line to determine the solution.

$\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$  or  $3 \times \frac{1}{4}$ ; Marla walks a total of  $\frac{3}{4}$  mile

One way to interpret a multiplication problem is that the first factor tells you how many groups of the second factor you have. For example,  $3 \times \frac{1}{4}$  is 3 groups of  $\frac{1}{4}$  and can be modeled using repeated addition. In #1-3, use the provided models or diagrams to find the product. Then create your own model to solve #4.

1.  $4 \times \frac{2}{9} = \frac{8}{9}$

2.  $5 \times \frac{1}{2} = \frac{5}{2} = 2\frac{1}{2}$

3.  $2 \times \frac{3}{5} = \frac{6}{5} = 1\frac{1}{5}$

4.  $3 \times \frac{3}{7} = \frac{9}{7} = 1\frac{2}{7}$

\*models will vary

answer keys included