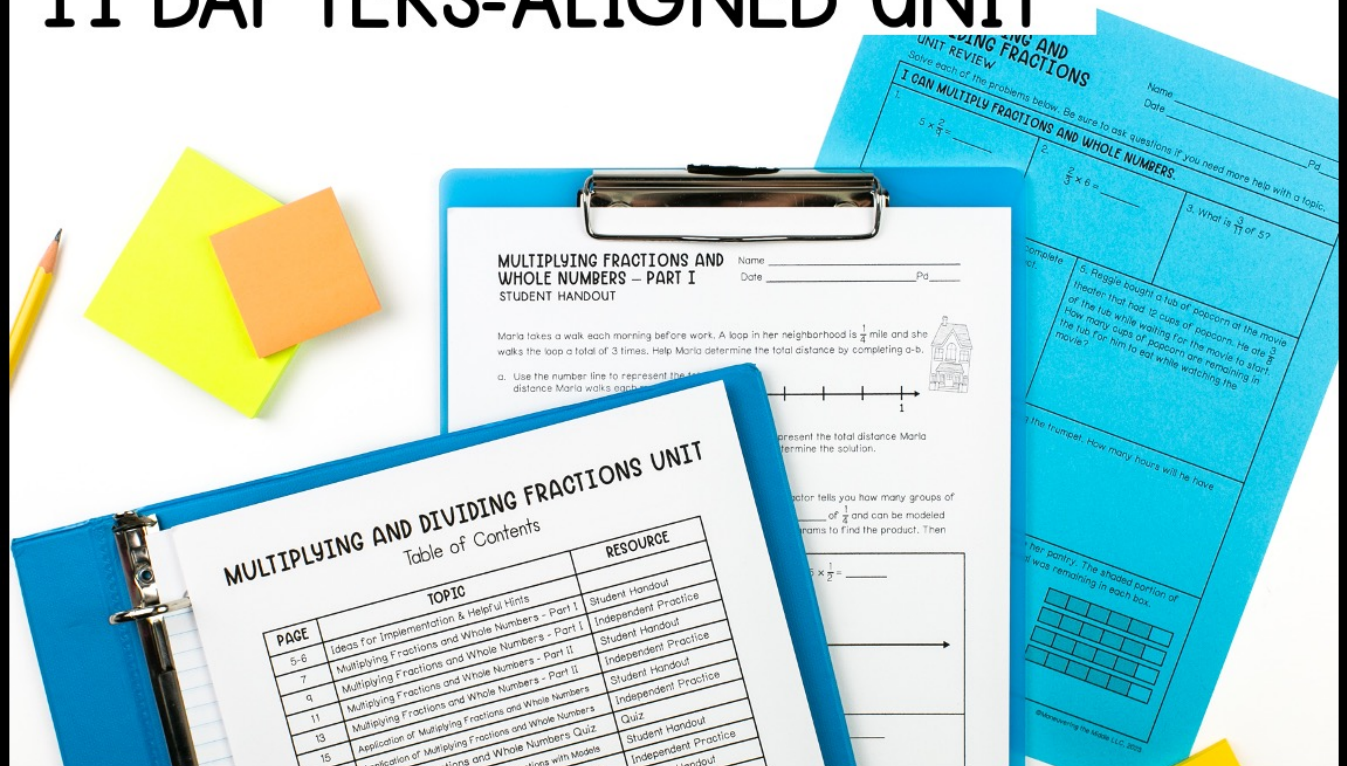


# learning focus:

- ✓ multiply a fraction or a whole number using models and strategies
- ✓ divide unit fractions by whole numbers and whole numbers by unit fraction
- ✓ multiply and divide fractions in real-world situations

# MULTIPLYING AND DIVIDING FRACTIONS UNIT

## 11 DAY TEKS-ALIGNED UNIT



A MANEUVERING THE MIDDLE® RESOURCE

# MULTIPLYING AND DIVIDING FRACTIONS



an 11 day TEKS-aligned unit  
TEKS: 5.3I, 5.3J, 5.3L

## ready-to-go, scaffolded student materials

### MULTIPLYING AND DIVIDING FRACTIONS UNIT

#### Table of Contents

PAGE	TOPIC	RESOURCE
5-6	Ideas for Implementation & Helpful Hints	
7	Multiplying Fractions and Whole Numbers - Part I	Student Handout
9	Multiplying Fractions and Whole Numbers - Part I	Independent Practice
11	Multiplying Fractions and Whole Numbers - Part II	Student Handout
13	Multiplying Fractions and Whole Numbers - Part II	Independent Practice
15	Application of Multiplying Fractions and Whole Numbers	Student Handout
17	Application of Multiplying Fractions and Whole Numbers	Independent Practice
19	Multiplying Fractions and Whole Numbers Quiz	Quiz
21	Dividing Whole Numbers by Unit Fractions with Models	Student Handout
23	Dividing Whole Numbers by Unit Fractions with Models	Independent Practice
25	Dividing Whole Numbers by Unit Fractions	Student Handout
27	Dividing Whole Numbers by Unit Fractions	Independent Practice
29	Dividing Unit Fractions by Whole Numbers with Models	Student Handout
31	Dividing Unit Fractions by Whole Numbers with Models	Independent Practice
33	Dividing Unit Fractions by Whole Numbers	Student Handout
35	Dividing Unit Fractions by Whole Numbers	Independent Practice
37	Dividing with Fractions Quiz	Quiz
39	Applying Division with Fractions	Student Handout
41	Applying Division with Fractions	Independent Practice
43	Multiplying and Dividing Fractions Unit Review	Review
47	Multiplying and Dividing Fractions Unit Test	Test
51	Multiplying and Dividing Fractions Unit Answer Key	Answer Key

# MULTIPLYING AND DIVIDING FRACTIONS



an 11 day TEKS-aligned unit  
TEKS: 5.3I, 5.3J, 5.3L

## 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.

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.

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 left lunch the next day. What portion of 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

©Maneuvering the Middle LLC, 2023

self-checking practice

# MULTIPLYING AND DIVIDING FRACTIONS



an 11 day TEKS-aligned unit  
TEKS: 5.3I, 5.3J, 5.3L

## unit study guide + assessments

- ✓ quizzes
- ✓ editable unit test

### DIVIDING WITH FRACTIONS QUIZ

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

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

1. Find the quotient.  $16 \div \frac{1}{8} =$  \_\_\_\_\_

2. What is the quotient of  $\frac{1}{11} \div 13$ ?

a. 143      b.  $\frac{1}{143}$

3. Fill in the missing value in the expression  $3 \div$  \_\_\_\_\_

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

4. A chef has a piece of pasta dough that is 12 inches wide. He cuts it into pieces that are each  $\frac{1}{5}$  of an inch wide to make fettuccini noodles. How many fettuccini noodles can the chef make from one piece of pasta dough?

a. 20  
b. 200  
c. 45  
d. 800

6. Two students drew models to represent a situation?

a. Mel only  
b. Rodrigo only  
c. Both Mel and Rodrigo  
d. Neither Mel nor Rodrigo

### MULTIPLYING AND DIVIDING 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.  $5 \times \frac{2}{4} =$  \_\_\_\_\_

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

3. What is  $\frac{3}{11}$  of 5?

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

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

6. Chance spends  $\frac{5}{6}$  of an hour each day practicing after 6 days?

7. Mrs. Patterson had several family members. The model below represents how much cereal remaining in the boxes.

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

b. Determine the solution.

### 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.  $4 \times \frac{2}{4} = \frac{8}{4} = 2$

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

