Module 4 - Lesson 19:

Multiply a decimal number by a decimal number.

CCSS Standard – 5.NBT.B.7

FLUENCY (10-min) **Sprint: Divide Whole Numbers by Unit Fractions**

SPRINT: Students write the quotient to build fluency with dividing whole numbers by unit fractions. (PAGE 173)

Write the quotient.

1.	$4 \div \frac{1}{3}$	**12**
2.	$7 \div \frac{1}{5}$	**35**

I don't expect you to finish. Do as many problems as you can. Go for YOUR personal best. Take your mark. Get set. Think!

FLUENCY (10-min)

Sprint: Divide Whole Numbers by Unit Fractions

Sprint A – Page 174

Sprint A

STOP!!

Underline the last problem that you did.

I am going to read the answers. If you got it right, call out "Yes!" If you made a mistake, circle the answer.

Count the number you got **correct** and write the number at the top of the page.

THIS WILL BE YOUR PERSONAL GOAL FOR SPRINT B

A

Number Correct: _____

Write the quotient.

1.	$2 \div \frac{1}{2}$	4
2.	$3 \div \frac{1}{2}$	6
3.	$5 \div \frac{1}{2}$	10
4.	$7 \div \frac{1}{2}$	14
5.	$9 \div \frac{1}{2}$	18
6.	$2 \div \frac{1}{3}$	6
7.	$3 \div \frac{1}{3}$	9
8.	$5 \div \frac{1}{3}$	15
9.	$7 \div \frac{1}{3}$	21
10.	$9 \div \frac{1}{3}$	27
11.	$2 \div \frac{1}{4}$	8
12.	$4 \div \frac{1}{4}$	16
13.	$8 \div \frac{1}{4}$	32
14.	$2 \div \frac{1}{5}$	10
15.	$4 \div \frac{1}{5}$	20
16.	$8 \div \frac{1}{5}$	40
17.	$2 \div \frac{1}{6}$	12
18.	$4 \div \frac{1}{6}$	24
19.	$8 \div \frac{1}{6}$	48
20.	$2 \div \frac{1}{8}$	16
21.	$4 \div \frac{1}{8}$	32
22.	$8 \div \frac{1}{8}$	64
23.	$4 \div \frac{1}{7}$	28
24.	$8 \div \frac{1}{7}$	56
25.	$7 \div \frac{1}{4}$	28
26.	$7 \div \frac{1}{8}$	56
27.	$4 \div \frac{1}{9}$	36
28.	$8 \div \frac{1}{9}$	72
29.	$9 \div \frac{1}{4}$	36
30.	$9 \div \frac{1}{8}$	72
31.	$10 \div \frac{1}{8}$	80
32.	$8 \div \frac{1}{10}$	80
33.	$1 \div \frac{1}{4}$	4
34.	$1 \div \frac{1}{8}$	8
35.	$3 \div \frac{1}{11}$	33
36.	$4 \div \frac{1}{12}$	48
37.	$11 \div \frac{1}{5}$	55
38.	$12 \div \frac{1}{6}$	72
39.	$7 \div \frac{1}{10}$	70
40.	$7 \div 0.1$	70
41.	$8 \div \frac{1}{100}$	800
42.	$8 \div 0.01$	800
43.	$9 \div 0.1$	90
44.	$10 \div 0.01$	1,000

FLUENCY (10-min)

Sprint: Divide Whole Numbers by Unit Fractions

Sprint A – Page 176
Take your mark. Get set. Improve!

Sprint B

STOP!!

Underline the last problem that you did.

I am going to read the answers. If you got it right, call out "Yes!" If you made a mistake, circle the answer.

Count the number you got **correct** and write the number at the top of the page.

Determine your improved score!

B

Number Correct: _____

Improvement: _____

Write the quotient.

1.	$2 \div \frac{1}{2}$	4
2.	$3 \div \frac{1}{2}$	6
3.	$4 \div \frac{1}{2}$	8
4.	$6 \div \frac{1}{2}$	12
5.	$8 \div \frac{1}{2}$	16
6.	$2 \div \frac{1}{3}$	6
7.	$3 \div \frac{1}{3}$	9
8.	$4 \div \frac{1}{3}$	12
9.	$6 \div \frac{1}{3}$	18
10.	$8 \div \frac{1}{3}$	24
11.	$2 \div \frac{1}{4}$	8
12.	$3 \div \frac{1}{4}$	12
13.	$6 \div \frac{1}{4}$	24
14.	$2 \div \frac{1}{5}$	10
15.	$3 \div \frac{1}{5}$	15
16.	$6 \div \frac{1}{5}$	30
17.	$2 \div \frac{1}{6}$	12
18.	$3 \div \frac{1}{6}$	18
19.	$6 \div \frac{1}{6}$	36
20.	$2 \div \frac{1}{8}$	16
21.	$3 \div \frac{1}{8}$	24
22.	$6 \div \frac{1}{8}$	48

23.	$3 \div \frac{1}{7}$	21
24.	$6 \div \frac{1}{7}$	42
25.	$7 \div \frac{1}{3}$	21
26.	$7 \div \frac{1}{6}$	42
27.	$3 \div \frac{1}{9}$	27
28.	$6 \div \frac{1}{9}$	54
29.	$9 \div \frac{1}{3}$	27
30.	$9 \div \frac{1}{6}$	54
31.	$10 \div \frac{1}{6}$	60
32.	$6 \div \frac{1}{10}$	60
33.	$1 \div \frac{1}{3}$	3
34.	$1 \div \frac{1}{6}$	6
35.	$2 \div \frac{1}{11}$	22
36.	$3 \div \frac{1}{12}$	36
37.	$11 \div \frac{1}{4}$	44
38.	$12 \div \frac{1}{5}$	60
39.	$6 \div \frac{1}{10}$	60
40.	$6 \div 0.1$	60
41.	$7 \div \frac{1}{100}$	700
42.	$7 \div 0.01$	700
43.	$8 \div 0.1$	80
44.	$9 \div 0.01$	900

LAUNCH (10-min) **Determine the unit of a product by using place value understanding.**

LEARN book page 177.

Take 3-minutes of silent time to complete the equations. You may use any method to do so.

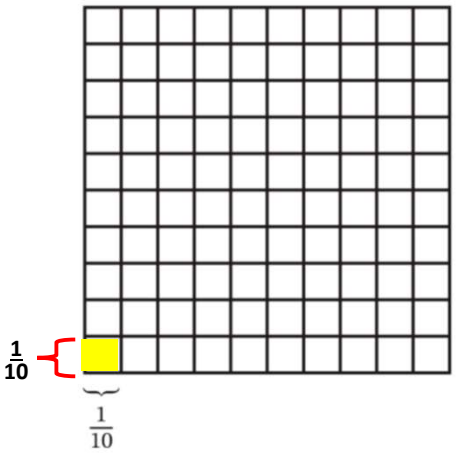
Let's share out our solutions.

1. Complete the equations. Use words, pictures, or equations to show your thinking.

   a. 1 tenth × 1 tenth = 1/100 or 1 hundredth

   b. 1 tenth × 1 hundredth = 1/1,000 or 1 thousandth

   c. 1 hundredth × 1 tenth = 1/1,000 or 1 thousandth



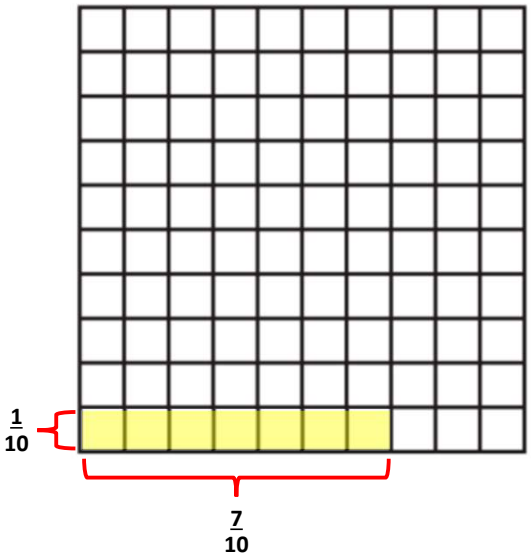
$$\frac{1}{10} \times \frac{1}{100} = \frac{1}{1{,}000}$$

$$0.01 \times 0.1 = 0.001$$

LAUNCH (10-min) **Determine the unit of a product by using place value understanding.**

Let's solve another one…

0.1 x 0.7



$$\frac{1}{10} \times \frac{7}{10} = \frac{7}{100}$$

$$\begin{array}{r} 0.1 \\ \times\ 0.7 \\ \hline 0.07 \end{array}$$

LAUNCH (10-min) Determine the unit of a product by using place value understanding.

THINK-PAIR-SHARE.

Estimate an answer to this question.
By just looking at the place value digits, what do you know about the product?

ESTIMATE

This decimal shows hundredths.

This decimal shows tenths.

$$5.28 \times 9.7$$

$$5 \times 10$$

$$\approx 50$$

$$\frac{1}{100} \times \frac{1}{10} = \frac{1}{1{,}000}$$

The final product has to be in thousandths.

Today, we will estimate and multiply decimal numbers by decimal numbers and determine whether the products are reasonable.

LEARN (30-min) **Multiply Two Decimal Numbers by Using Vertical Form**

LEARN book page 177.

0.08 x 9.7 = ____

ESTIMATE

0.08 x 9.7

0.1 x 10

≈ 1

How many **tenths** is 9.7?

How many **hundredths** is 0.08?

Since we renamed tenths and hundredths, what value is the 776?

$$\frac{1}{100} \times \frac{1}{10} = \frac{1}{1{,}000}$$

THOUSANDTHS

$$\begin{array}{r} 5 \\ 97 \\ \times \quad 8 \\ \hline .776 \end{array}$$

LEARN (30-min) **Multiply Two Decimal Numbers by Using Vertical Form**

LEARN book page 177.

$$0.08 \times 9.7 = .776 \approx 1$$

Let's represent the equation in **FRACTION FORM** to check if our answer is reasonable.

$$\frac{8}{100} \times \frac{97}{10} = \frac{776}{1{,}000}$$

$$\begin{array}{r} 5 \\ 97 \\ \times \quad 8 \\ \hline .776 \end{array}$$

LEARN (30-min) **Multiply Two Decimal Numbers by Using Vertical Form**

LEARN book page 177.

5.28 x 9.7 = ____

ESTIMATE

5.28 x 9.7

5 x 10

≈ 50

How many **hundredths** is 5.28?

How many **tenths** is 9.7?

Since we renamed tenths and hundredths, what value is the 51216?

$\frac{1}{100} \times \frac{1}{10} = \frac{1}{1,000}$

THOUSANDTHS

$$\begin{array}{r} 528 \\ \times\ 97 \\ \hline 3696 \\ +\ 47520 \\ \hline 51216 \end{array}$$

LEARN (30-min) **Multiply Two Decimal Numbers by Using Vertical Form**

LEARN book page 177.

$$5.28 \times 9.7 = \underline{51.216} \approx 50$$

Let's represent the equation in **FRACTION FORM** to check if our answer is reasonable.

$$\frac{528}{100} \times \frac{97}{10} = \frac{51216}{1{,}000}$$

$$\begin{array}{r} 528 \\ \times\ 97 \\ \hline 3696 \\ +\ 4752\,0 \\ \hline 51216 \end{array}$$

LEARN (30-min) **Multiply Decimal Numbers**

LEARN book page 178.
Work with a partner to complete problems 4 & 5.

First estimate to find a possible solution.

Use the vertical method.

Then check to see if your answer is reasonable by using fraction form.

6.3 x 4.2 = ____

7.26 x 1.5 = ____

LEARN (30-min) **Multiply Two Decimal Numbers by Using Vertical Form**

LEARN book page 177.

6.3 x 4.2 = ____

ESTIMATE

6.3 x 4.2

6 x 4

≈ 24

How many **tenths** is 6.3?

How many **tenths** is 4.2?

Since we renamed tenths and tenths, what value is the 2646?

$\frac{1}{10} \times \frac{1}{10} = \frac{1}{100}$

HUNDREDTHS

$$\begin{array}{r} {\scriptstyle 1} \\ 63 \\ \times\ 42 \\ \hline 126 \\ +\ 2520 \\ \hline 2646 \end{array}$$

LEARN (30-min) **Multiply Two Decimal Numbers by Using Vertical Form**

LEARN book page 177.

$$6.3 \times 4.2 = \underline{26.46} \approx 24$$

Let's represent the equation in **FRACTION FORM** to check if our answer is reasonable.

$$\frac{63}{10} \times \frac{42}{10} = \frac{2646}{100}$$

$$\begin{array}{r} 63 \\ \times\ 42 \\ \hline 126 \\ +2520 \\ \hline 2646 \end{array}$$

LEARN (30-min) **Multiply Two Decimal Numbers by Using Vertical Form**

LEARN book page 177.

7.26 x 1.5 = ____

ESTIMATE

7.26 x 1.5

7 x 2

≈ 14

How many **hundredths** is 7.26?

How many **tenths** is 1.5?

Since we renamed tenths and hundredths, what value is the 10890?

$$\frac{1}{100} \times \frac{1}{10} = \frac{1}{1{,}000}$$

THOUSANDTHS

```
  1 3
  726
  x 15
 ----
 1 3630
+ 7260
 -----
 10890
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LEARN (30-min) **Multiply Two Decimal Numbers by Using Vertical Form**

LEARN book page 177.

$$7.26 \times 1.5 = \underline{10.890} \approx 14$$

Let's represent the equation in **FRACTION FORM** to check if our answer is reasonable.

$$\frac{726}{100} \times \frac{15}{10} = \frac{10890}{1{,}000}$$

$$\begin{array}{r} 726 \\ \times\ 15 \\ \hline 3630 \\ +\ 7260 \\ \hline 10890 \end{array}$$

LEARN (30-min) **Decimal-Number Multiplication Word Problem**

LEARN book page 179.

6. Sasha buys 5.5 yards of fabric. Each yard costs $6.44. She pays with $40.00. How much change should Sasha get?

ESTIMATE

6.44 x 5.5

6 x 6

≈ $36

6.44 x 5.5 = 35.420

$\frac{644}{100} \times \frac{55}{10} = \frac{????}{1,000} = \frac{35420}{1,000}$

39 910
~~$40.00~~
- $35.42
4.58

LAND (10-min)

Exit Ticket

Name _____ Date _____

19

Multiply. Show your work.

$1.7 \times 0.55 =$ _____

Exit Ticket – PAGE 185

Small Group Time:
Problem Set Page 181 - 183

Homework:
Page 119 APPLY BOOK