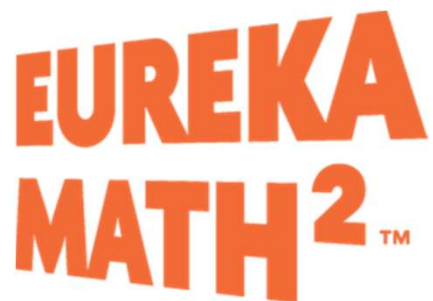




Module 4 - Lesson 14:

Multiply decimal numbers to hundredths by one-digit whole numbers by using different models.

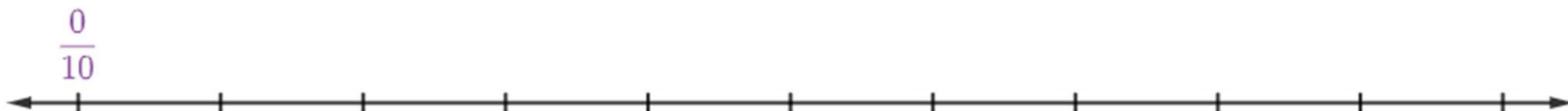
CCSS Standard – 5.NBT.B.7

FLUENCY (10-min)

Counting on the Number Line by 2 Tenths

Use the number line to count by 2 tenths in fraction form from $0/10$ to $20/10$.

The first number you say is $0/10$. Ready?



Now count by 2 tenths again. This time **RENAME** the fractions as whole numbers or mixed numbers when possible. The first number you say is 0. Ready?

Now count by 2 tenths again. This time say the number in decimal form. The first number you say is 0. Ready?

FLUENCY (10-min)**Whiteboard Exchange: Multiply by Powers of 10**

Write the equation and find the product.

$$0.2 \times 10 = \underline{\hspace{2cm}}$$

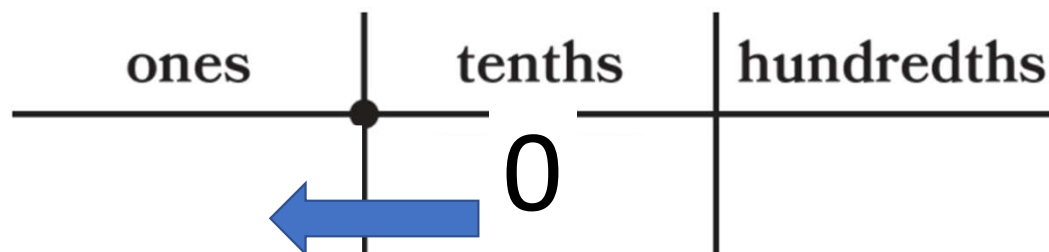
$$0.5 \times 100 = \underline{\hspace{2cm}}$$

$$0.9 \times 1,000 = \underline{\hspace{2cm}}$$

$$0.04 \times 10 = \underline{\hspace{2cm}}$$

$$0.008 \times 100 = \underline{\hspace{2cm}}$$

$$0.601 \times 1,000 = \underline{\hspace{2cm}}$$



FLUENCY (10-min)

Whiteboard Exchange: Multiply in Unit and Standard Form



In unit form, how much is 2×3 ones?

Raise your hand when you know.

$$2 \times 3 \text{ ones} = \underline{\quad\quad} \text{ ones}$$

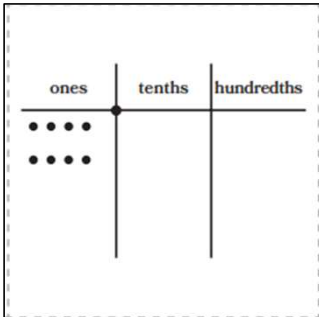
$$3 \times 5 \text{ ones} = \underline{\quad\quad} \text{ ones}$$

LAUNCH (5-min)

Multiplication Card Sort Activity

LEARN book – page 131

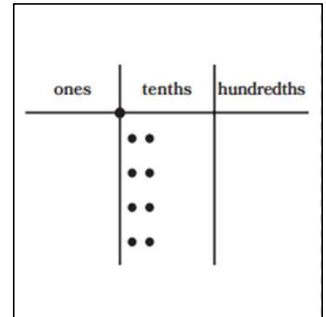
$$2 \times 4$$



8 tenths

4 times as much as 0.2

$$4 \times 0.2$$



$$4 + 4$$

$$0.2 + 0.2 + 0.2 + 0.2$$

4 groups of 0.2

2 times as much as 4

8

2 groups of 4

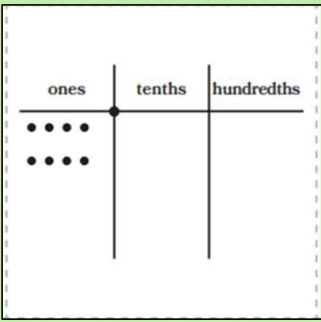
TASK: With a partner, identify the relationships among the cards, and then sort the cards into TWO categories.

LAUNCH (5-min)

Multiplication Card Sort Activity

LEARN book – page 131

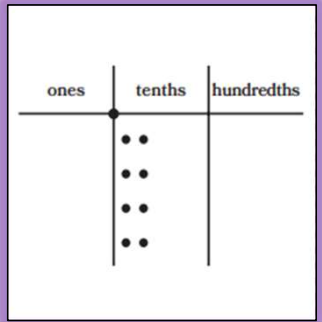
2×4



8 tenths

4 times as much as 0.2

4×0.2



$4 + 4$

$0.2 + 0.2 + 0.2 + 0.2$

4 groups of 0.2

2 times as much as 4

8

2 groups of 4

Green Glow: Cards describing 2×4 relationship.

Purple Glow: Cards describing 4×0.2 relationship.

Today we will use familiar models and our understanding of multiplication with whole numbers to multiply decimal numbers by one-digit whole numbers.

LEARN (35-min)

Multiply by Using a Number Line

Think about the card sort activity we just did. What are some ways we can describe what the expression 4×0.3 represents?

4 groups of 3 tenths

$0.3 + 0.3 + 0.3 + 0.3$

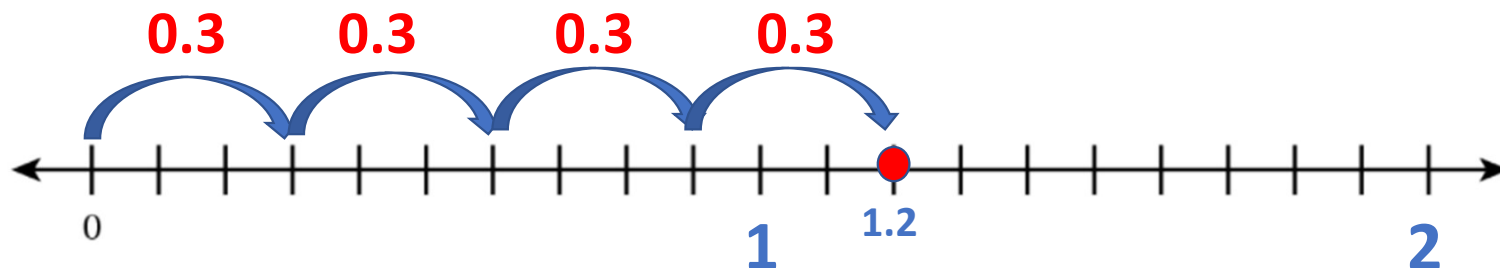
4 times as much as 3 tenths

In each case, the result
is the same. **12 tenths**

LEARN book – page 133

What unit does this
number line show?

On your number line, start at 0 and show **4 groups of 3 tenths**.



$$4 \times 0.3 = 1.2$$

$$4 \times \frac{3}{10} = \frac{12}{10} = 1 \frac{2}{10}$$

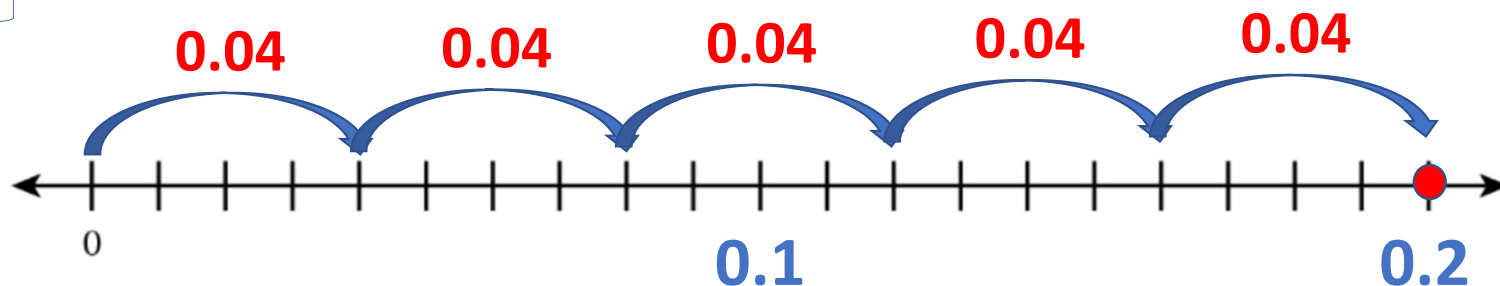
LEARN (35-min)

Multiply by Using a Number Line

Think about what the expression 5×0.04 represents?

5 groups of 4 hundredths
 $0.04 + 0.04 + 0.04 + 0.04 + 0.04$
5 times as much as 4 hundredths

In each case, the result is the same. **20 hundredths**



What unit does this number line show now?

On your number line, start at 0 and show 5 groups of 4 hundredths.

$$5 \times 0.4 = 2.0$$

$$5 \times \frac{4}{100} = \frac{20}{100} = \frac{1}{5}$$

LEARN (35-min)

Multiply by Using a Place Value Chart

LEARN book page 133

Think about what the expression 3×0.62 represents?

This time, instead of a number line, let's use a place value chart to find the product.

Let's start by showing 3 groups of 0.62

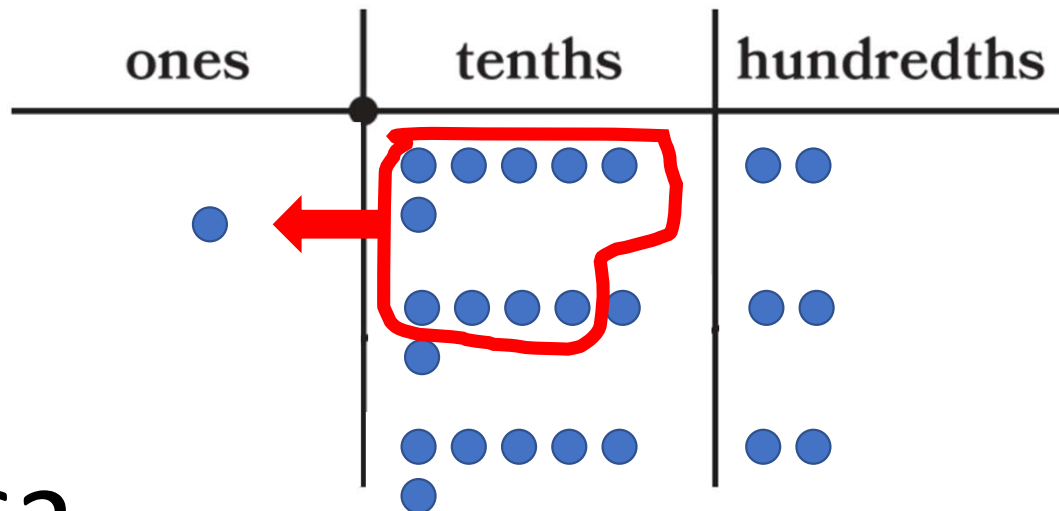
Where can we regroup?

What is left after regrouping?

$$3 \times 0.62 = 1.86$$

Let's use the vertical form to multiply.

$$\begin{array}{r} 1 \\ 0.62 \\ \times \quad 3 \\ \hline 1.86 \end{array}$$



LEARN (35-min)

Multiply by Using a Place Value Chart

Think about what the expression 2.13×5 represents?

This time, instead of a number line, let's use a place value chart to find the product.

5 groups of 2.13

$2.13 + 2.13 + 2.13 + 2.13 + 2.13$

5 times as much as 2.13

5 groups of 213 hundredths

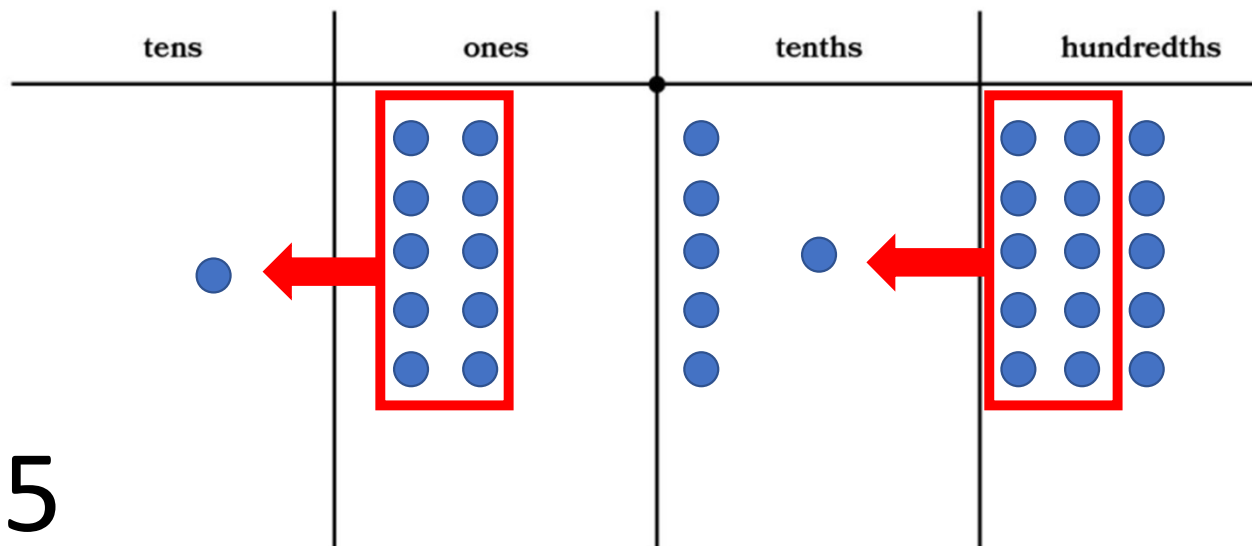
Does the fact that the decimal comes first in the expression change anything?

Let's start by showing 5 groups of 2.13

Where can we regroup?

What is left after regrouping?

10.65



Let's use the vertical form to multiply.

LEARN (35-min)

Vertical Form to Multiply Decimals

$$2.13 \times 5 =$$

STOP & THINK about where the decimal should be placed.

You are multiplying 2 ones by 5.
Therefore, the answer must be about 10.

$$\begin{array}{r} 1 \\ 2.13 \\ \times \quad 5 \\ \hline 10.65 \end{array}$$

LEARN (35-min)

Multiply by Using an Area Model

LEARN book page 133.

$$8 \times 3.24$$

First, break apart 3.24 into ones, tenths, and hundredths.

Next, multiply each place by eight. Write the unit form of each product.

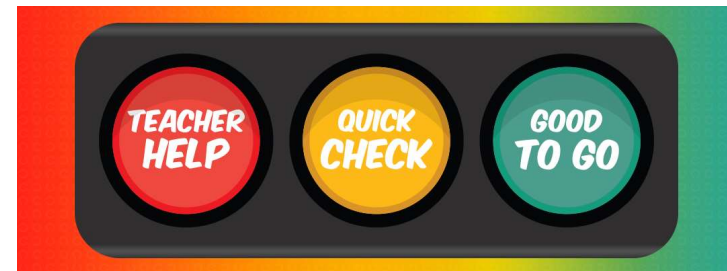
	3 ones	2 tenths	4 hundredths
$\begin{array}{r} 24. \\ + 1.6 \\ + 0.32 \\ \hline 25.92 \end{array}$	$\begin{array}{r} 24 \text{ ones} \\ 24 \end{array}$	$\begin{array}{r} 16 \text{ tenths} \\ 1.6 \end{array}$	$\begin{array}{r} 32 \text{ hundredths} \\ 0.32 \end{array}$

Lastly, add the partial products for the answer.

PLEASE SURE TO LINE UP THE DECIMAL POINTS!!!

LAND (10-min)

Exit Ticket



Name

Date



14

Multiply. Show your work.

1. $6 \times 3.05 =$ _____

2. $3 \times 3.79 =$ _____

Exit Ticket – PAGE 141

Small Group Time:

Problem Set Pages 135 – 139

Homework:

Page 89 APPLY BOOK