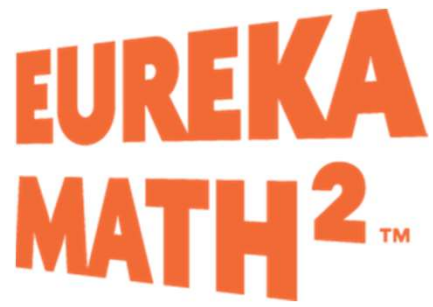




Module 4 - Lesson 11:

Subtract decimal number by using different methods.

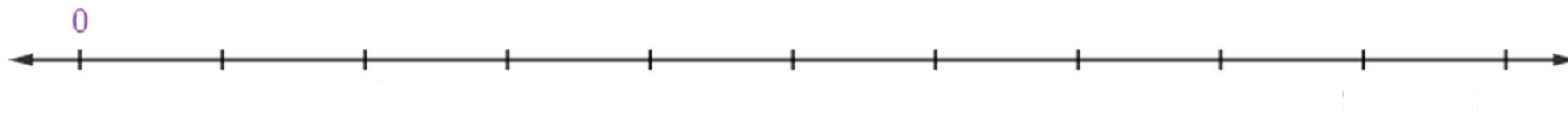
CCSS Standard – 5.NBT.B.7

FLUENCY (10-min)

Counting on the Number Line by Ones

Use the number line to count by **ones** to 10.

The first number you say is 0. Ready?



Now, count forward by **ones and tenths** to 10. Like “one and zero tenths”...

The first number you say is 0. Ready?



You may be thinking “Why did we just count that way?”. The reason is, to remind you that when we ADD or SUBTRACT decimals in **vertical form**, it is important to remember to line up the decimal points AND to line up each place value digit; even if the digits are zero. For example, 2 as 2.00.

FLUENCY (10-min)

Choral Response: Rename Place Value Units

Raise your hand when you know the answer to each question.
Wait for my signal to say the answer.

What **value** is represented on the chart?
Say the answer in **STANDARD FORM**.

2

2 is equal to 1 one and how many tenths?



2 = 1 one 10 tenths

FLUENCY (10-min)

Choral Response: Rename Place Value Units

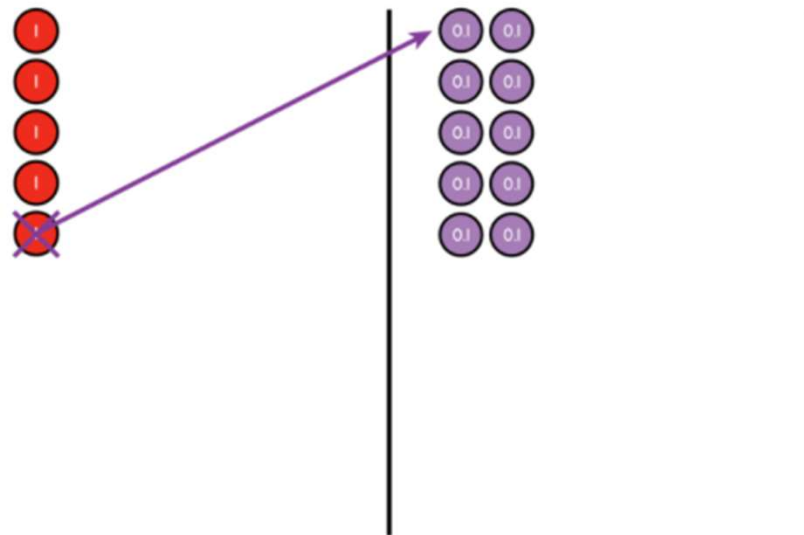
Raise your hand when you know the answer to each question.
Wait for my signal to say the answer.

What **value** is represented on the chart?
Say the answer in **STANDARD FORM**.

5

5 is equal to how many ones and 10 tenths?

5 = 4 ones 10 tenths



FLUENCY (10-min)

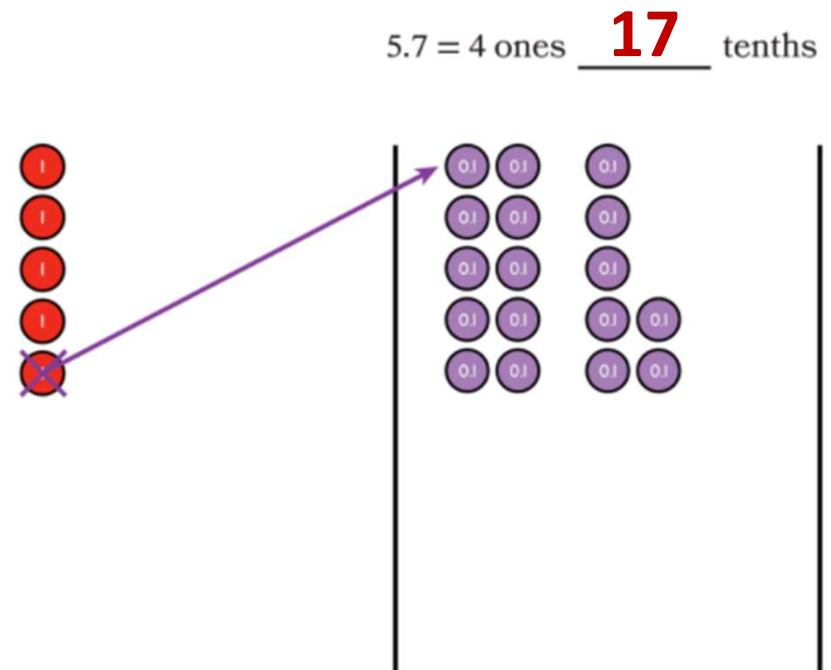
Choral Response: Rename Place Value Units

**Raise your hand when you know the answer to each question.
Wait for my signal to say the answer.**

What **value** is represented on the chart?
Say the answer in STANDARD FORM.

5 ones 7 tenths

5 ones and 7 tenths is equal to 4 ones and how many tenths?



FLUENCY (10-min)

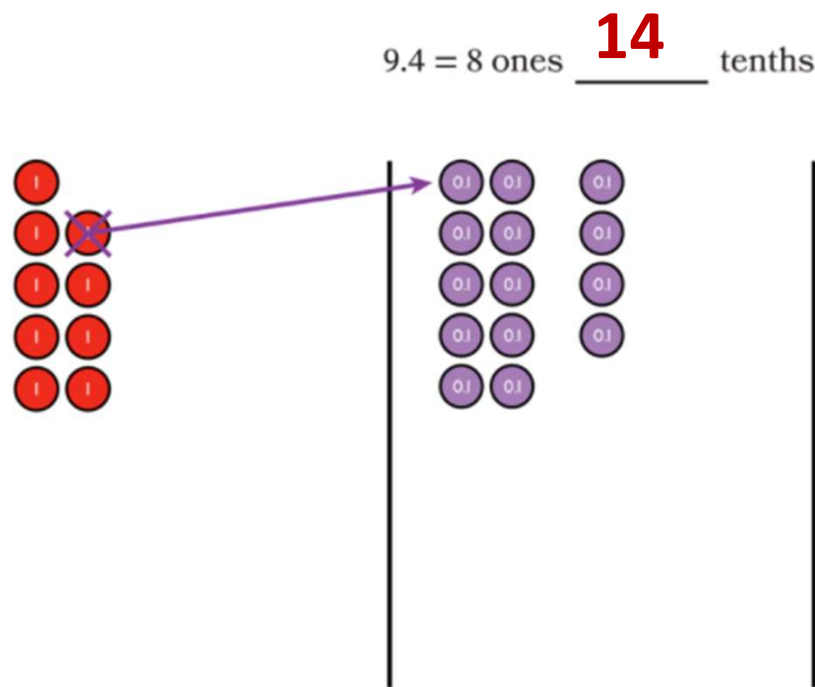
Choral Response: Rename Place Value Units

Raise your hand when you know the answer to each question.
Wait for my signal to say the answer.

What **value** is represented on the chart?
Say the answer in **STANDARD FORM**.

9 ones 4 tenths

9 ones and 4 tenths is equal to 8 ones and how many tenths?



FLUENCY (10-min)

Choral Response: Rename Place Value Units

Raise your hand when you know the answer to each question.
Wait for my signal to say the answer.

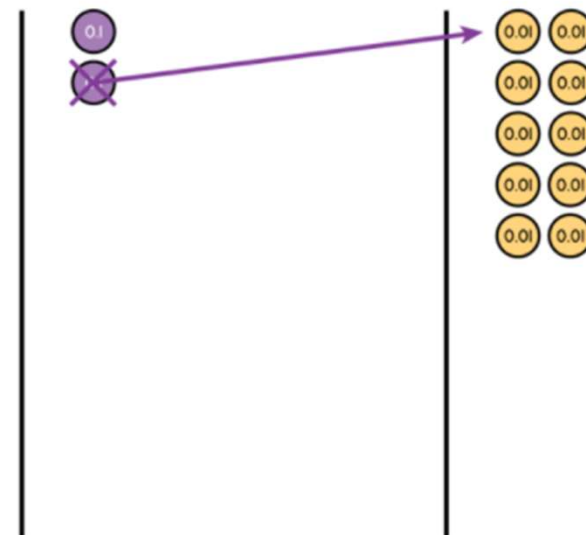
What **value** is represented on the chart?
Say the answer in **STANDARD FORM**.

1 one 2 tenths

1 one and 2 tenths is equal to 1 tenth and how
many hundredths?



1.2 = 1 one 1 tenth 10 hundredths



FLUENCY (10-min)

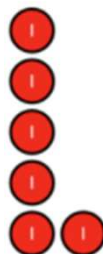
Choral Response: Rename Place Value Units

Raise your hand when you know the answer to each question.
Wait for my signal to say the answer.

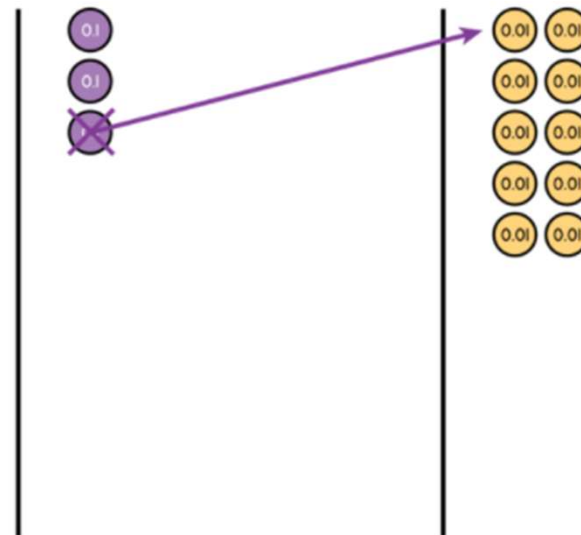
What **value** is represented on the chart?
Say the answer in **STANDARD FORM**.

6 ones 3 tenths

6 ones and 3 tenths is equal to 6 ones, how many
tenths, 10 hundredths?



$$6.3 = 6 \text{ ones } \underline{2} \text{ tenths } 10 \text{ hundredths}$$



FLUENCY (10-min)

Whiteboard Exchange: Make the Next Whole



Determine the unknown part to make the next whole number.

Write and complete the equation:

$$0.90 + \underline{\hspace{2cm}} = 1$$

$$\underline{\hspace{2cm}} + 0.60 = 1$$

$$0.95 + \underline{\hspace{2cm}} = 1$$

$$\underline{\hspace{2cm}} + 0.75 = 1$$

$$0.15 + \underline{\hspace{2cm}} = 1$$

LAUNCH (10-min)

Making Lemonade Video



LEARN book page 103.

1. Jada is making lemonade. She has 2.4 liters of water in a pitcher. She pours 0.35 liters of lemon juice into the pitcher. Jada gets a spoon to stir the lemon juice and water, but her dog bumps the table. Some liquid spills out of the pitcher. The pitcher now has 2.25 liters of liquid.

How many liters of liquid spilled out of the pitcher?

What can we draw to represent the situation in this problem?
Let's use a tape diagram to understand the problem.

Pitcher before spill

2.4

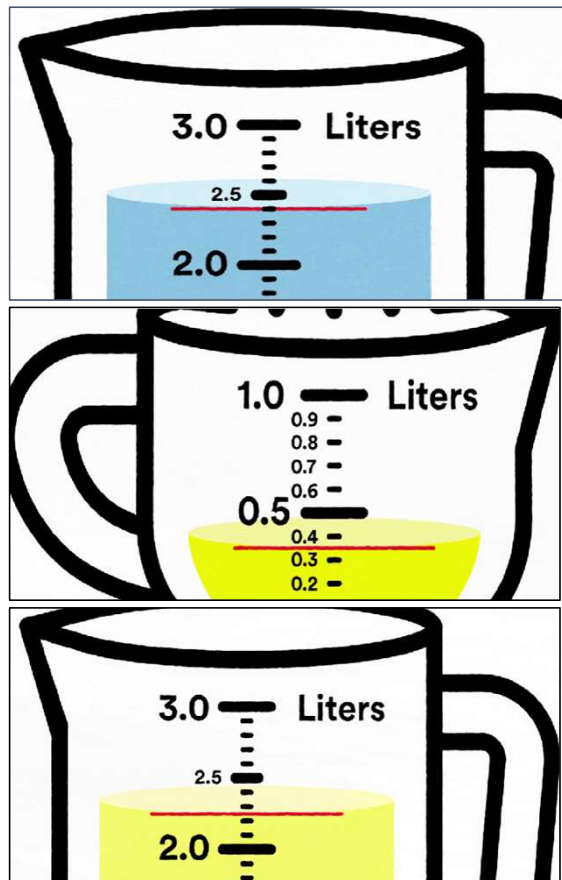
0.35

Pitcher after spill

2.25

Spill?

Discuss: What do we need to do first? Next?



LEARN (30-min)**Making Lemonade Video**

First, estimate the sum and difference.

Pitcher before spill

2.4

0.35

Pitcher after spill

2.25

Spill?

$$2.4 + 0.4 = 2.8$$

$$2.3 \quad 2.8 - 2.3 = 0.5$$

First, we need to determine how much lemonade Jada had BEFORE the spill.

Next, we need to determine how much lemonade spilled out.

$$\begin{array}{r} 2.4 \\ + 0.35 \\ \hline 2.75 \end{array}$$

$$\begin{array}{r} 2.75 \\ - 2.25 \\ \hline 0.50 \end{array}$$

The difference is 50 hundredths of a liter. (or 5 tenths of a liter)

Today, we are going to apply some methods to subtract decimal numbers.

LEARN (30-min)

Subtract Decimal Numbers by Relating Addition and Subtraction

What related addition equation can we write to help us find $12 - 4$?

Let m represent the unknown value?

$$12 - 4$$

$$m + 4 = 12$$

$$4 + m = 12$$

We can use the relationship between addition and subtraction to help us subtract whole numbers and decimal numbers.

$$12.3 - 4.8 \left\{ \begin{array}{l} \text{First, estimate the difference.} \\ 12 - 5 = 7 \end{array} \right.$$

What related addition equation can we write to help us find $12.3 - 4.8$?

Let a represent the unknown value?

$$a + 4.8 = 12.3$$

$$4.8 + a = 12.3$$

LEARN (30-min)

Subtract Decimal Numbers by Relating Addition and Subtraction

$$12.3 - 4.8 = +7.5$$

$$a + 4.8 = 12.3 \quad 4.8 + a = 12.3$$

Let's use the arrow method to show our thinking:

$$4.8 \xrightarrow{+0.2} 5 \xrightarrow{+7.3} 12.3$$

$$\begin{array}{r} 12.3 \\ - 4.8 \\ \hline 7.5 \end{array}$$

LEARN (30-min)

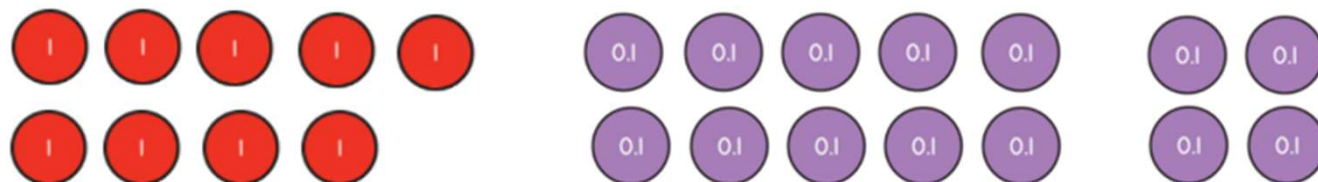
Subtract Decimal Numbers by Decomposing

$$9.4 - 3.7$$

First, estimate the difference.

$$9 - 4 = 5$$

Let's use place value disks to show this problem.



Can we take away 3.7 without exchanging and disks?

We can take 3 ones away, but we cannot take 7 tenths without exchanging disks.

Now we have 6 ones and 4 tenths, but we still need to take away 7 tenths.
So, let's exchange 1 one for 10 tenths.

Now we can take away 7 tenths.

We are left with 5 ones and 7 tenths.

$$\begin{array}{r} 9.4 \\ - 3.7 \\ \hline 5.7 \end{array}$$

LEARN (30-min)

Subtract Decimal Numbers by Decomposing

$$9.4 - 3.7$$

Here is another way to solve the problem using a number bond.
What do you think about this method?

$$9.4 - 3.7 = 6.4 - 0.7 = 5.4 + 0.3 = 5.7$$



LEARN (30-min)

Subtract Decimal Numbers by Using a Number Line

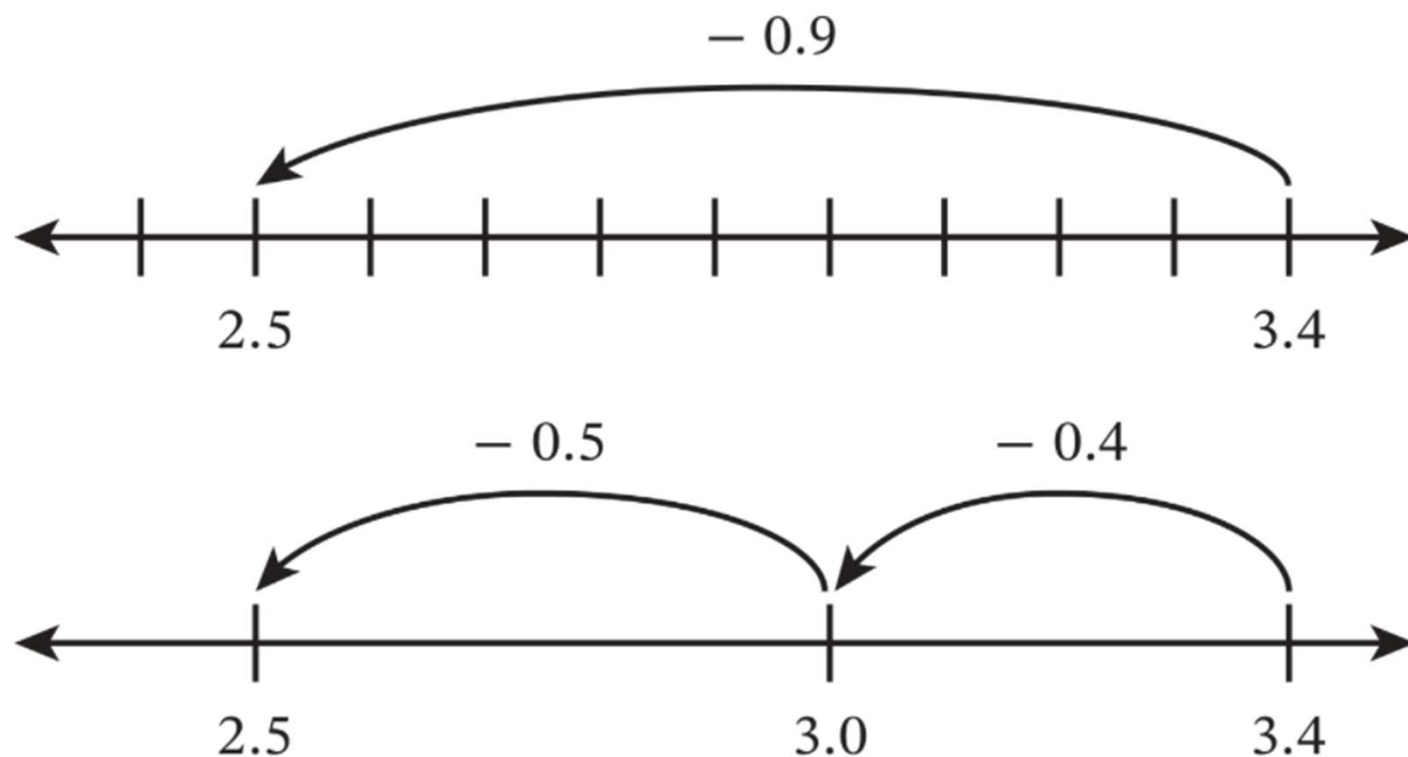
$$3.4 - 0.9$$

Think-Pair-Share:

What is the same and what is different about these two number lines?

Why do you think the students counted back 0.4 and then 0.5 on the bottom number line?

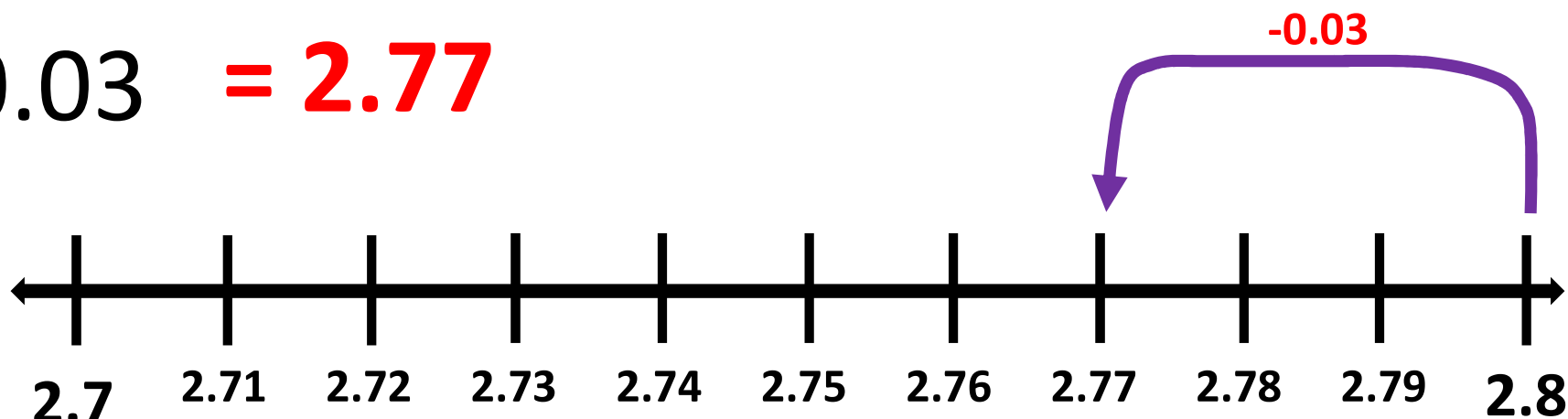
Why do you think the top number line is in tenths while the bottom is not?



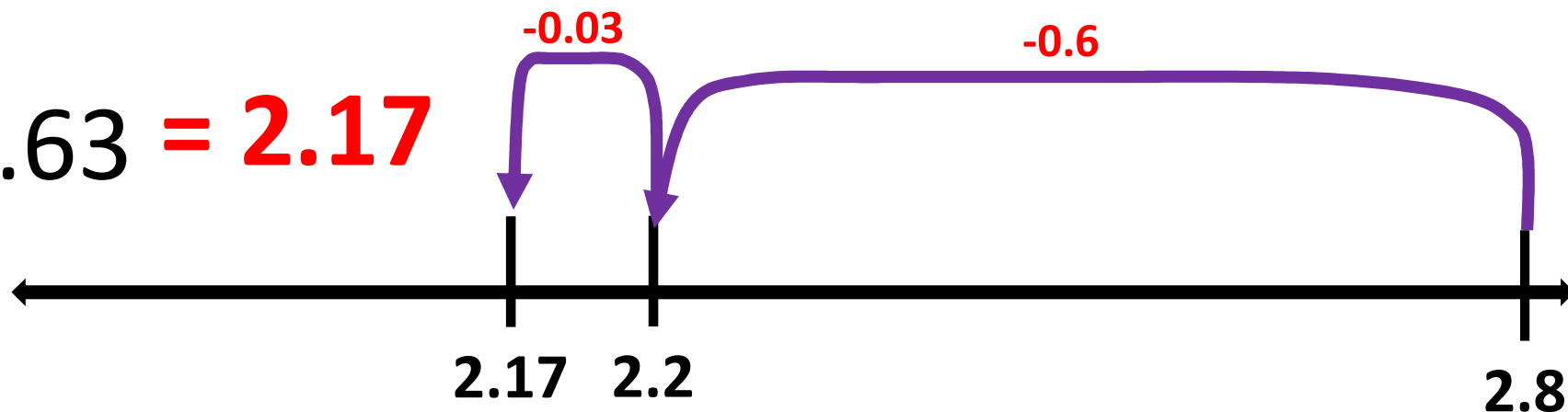
LEARN (30-min)

Subtract Decimal Numbers by Using a Number Line

$$2.8 - 0.03 = 2.77$$



$$2.8 - 0.63 = 2.17$$



Would it make sense to use tenths on this number line?

LEARN (30-min)

Subtract Decimal Numbers

$$2.8 - 0.03$$

$$\begin{array}{r} 2.8 \\ - 0.03 \\ \hline 2.77 \end{array}$$

Diagram illustrating the subtraction of 0.03 from 2.8. The number 2.8 is written above the subtraction line, and 0.03 is written below it. A blue diagonal line is drawn through the 8 in 2.8 and the 0 in 0.03, with a red '10' written above it, indicating a borrowing of 10 hundredths from the tenths place. The result, 2.77, is shown below the line.

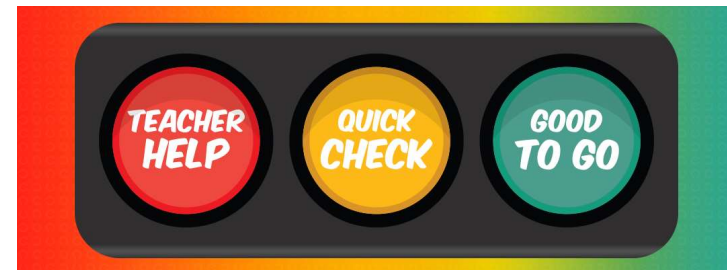
$$2.8 - 0.63$$

$$\begin{array}{r} 2.8 \\ - 0.63 \\ \hline 2.17 \end{array}$$

Diagram illustrating the subtraction of 0.63 from 2.8. The number 2.8 is written above the subtraction line, and 0.63 is written below it. A blue diagonal line is drawn through the 8 in 2.8 and the 0 in 0.63, with a red '10' written above it, indicating a borrowing of 10 hundredths from the tenths place. The result, 2.17, is shown below the line.

LAND (10-min)

Exit Ticket



Name

Date



11

Subtract. Show your work.

1. $3.5 - 0.8 =$ _____

2. $7.35 - 1.97 =$ _____

Exit Ticket – PAGE 109

Small Group Time:

Problem Set Pages 105 – 107

Homework:

Page 69 APPLY BOOK