Module 3 - Lesson 19:

Create and solve one-step word problems involving fractions.

CCSS Standard – 5.NF.B.7a / 5.NF.B.7c

FLUENCY (10-min) **Counting the Math Way by Tenths**

Let's count the math way. Each finger represents **1 hundredth.**

Show me your left hand. Make the following hand signals:

Now let's continue counting using both hands!!

What larger unit can we make with **10 hundredths**?

We can bundle 10 hundredths to make 1 **tenth**. Let's show 1 tenth with our hands bundled.

Now let's reverse count the math way by hundredths from 10 hundredths to 0 hundredths.

FLUENCY (10-min) **Whiteboard Exchange: Interpret a Fraction as Division**

How can we represent the fraction as a division expression?
Raise your hand when you know?
Next, divide and express the quotient as a whole or mixed number.

$\frac{134}{2} = \_\_\_\_\_ \div \_\_\_\_\_ =$

$\frac{528}{4} = \_\_\_\_\_ \div \_\_\_\_\_ =$

$\frac{241}{5} = \_\_\_\_\_ \div \_\_\_\_\_ =$

$\frac{805}{7} = \_\_\_\_\_ \div \_\_\_\_\_ =$

FLUENCY (10-min) **Choral Response: Multiply Fractions**

What is the product in fraction form?
Raise your hand when you know.

$\frac{1}{2} \times \frac{1}{4} =$ _____

$\frac{1}{2} \times \frac{2}{4} =$ _____

$\frac{1}{4} \times \frac{1}{4} =$ _____

$\frac{3}{4} \times \frac{1}{4} =$ _____

$\frac{3}{5} \times \frac{2}{3} =$ _____

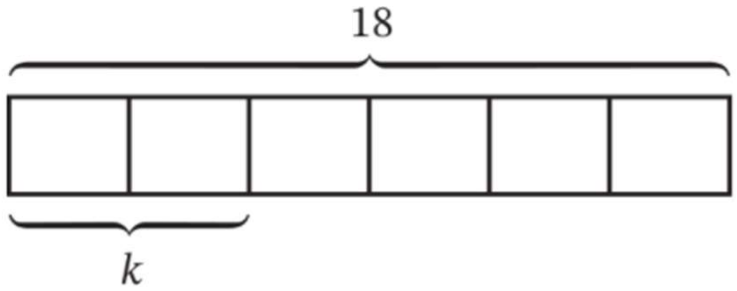
$\frac{3}{5} \times \frac{5}{3} =$ _____

$\frac{3}{5} \times \frac{4}{6} =$ _____

$\frac{8}{5} \times \frac{4}{6} =$ _____

LAUNCH (5-min)

Student analyze a tape diagram and consider what problem in might represent.



There are 18 tables in a restaurant.

Eddie's little sister scribbled on his math homework. Now, Eddie does not know what problem he needs to solve, but he does have a tape diagram that can give him some clues about what the problem asks him to find.

Read the first sentence and study the tape diagram. What information is shown in the tape diagram that might help to determine the missing parts. What equation can we use to find the value of k?

$k = (18 \div 6) \times 2$ $\qquad$ $k = 2 \times \frac{18}{6}$ $\qquad$ $k = \frac{2}{6} \times 18$

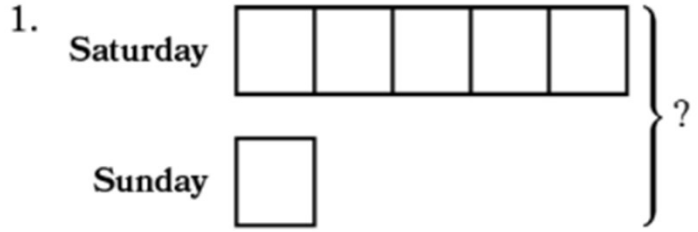
LEARN (35-min)

Generate Context to Match a Tape Diagram

LEARN book page 171

Write a word problem to match each model.

1.



I play video games on Saturday for 5 times as long as on Sunday. On Saturday, I play for 60 minutes. How many minutes do I spend playing video games on the weekend?

I ride my bike for 1/5 as long on Sunday as I do on Saturday. I ride for ½ hour on Sunday. How many hours do I ride my bike over the weekend?

What do you notice about this tape diagram?

- *There are two tape diagrams!*
- *The unknown value is for both Saturday and Sunday*

This tape diagram shows a comparison about something that happens on Saturday and Sunday. How does the tape diagram that represents Saturday compare to the tape diagram that represents Sunday?

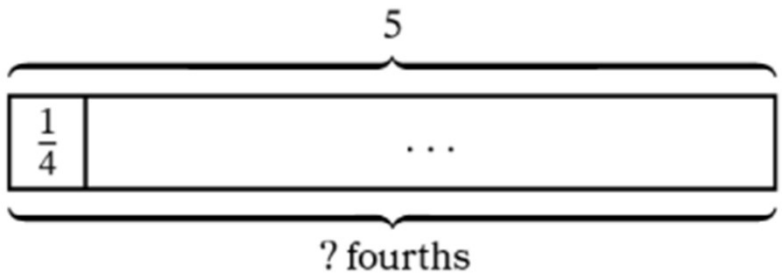
- *Saturday is five times more than Sunday or Sunday is 1/5 of Saturday*

For a few minutes, work with a partner to come up with a scenario that would work with these tape diagrams. You can solve it if there is time to do so.

LEARN (35-min) **Generate Context to Match a Tape Diagram**

LEARN book page 171

2.



5 pizzas are cut into fourths. How many pieces are there after all the pizzas are cut?

Ali needs guitar strings that are ¼ foot long. If he has 5 feet of string, how many strips can he make?

$5 \div \frac{1}{4}$

5×4

20

What do you notice about this tape diagram?

- *The total is 5.*
- *The unknown value is the number of fourths in 5.*

What does the tape diagram show us that we need to find?

- *How many fourths are in 5.*

What math expression can we write to match the tape diagram?

For a few minutes, work with a partner to come up with a scenario that would work with these tape diagrams. You can solve it if there is time to do so.

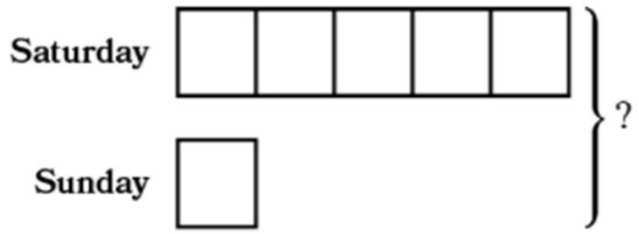
LEARN (35-min) **Generate Context to Match a Tape Diagram**

DISCUSS:

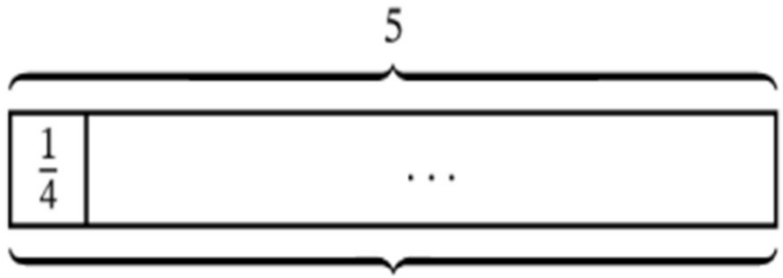
Which tape diagram did you find more helpful when you wrote or discussed a word problem?

Write a word problem to match each model.

1.



2.



LEARN (35-min) **Generate Context to Match an Equation**

LEARN book page 172.

Write a word problem to match each equation.

3. $\frac{4}{5} \times 30 = x$

Now, we are given an equation instead of a tape diagram. Let's think about a situation to use to write a word problem than can be solved by using this equation.

For a few minutes, work with a partner to come up with a scenario that would work with this equation.

Reading 4/5 of the 30 books on my list.

Solving 4/5 of the 30 math problems in the problem set.

Saving 4/5 of a $30 gift that I received.

Completing 4/5 of a 30-mile bike race.

$\frac{4}{5}$ x 30

$\frac{120}{5}$

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LEARN (35-min) **Generate Context to Match an Equation**

LEARN book page 172.

$4 \div \frac{1}{3}$

⬇ ⬇ ⬇

4×3

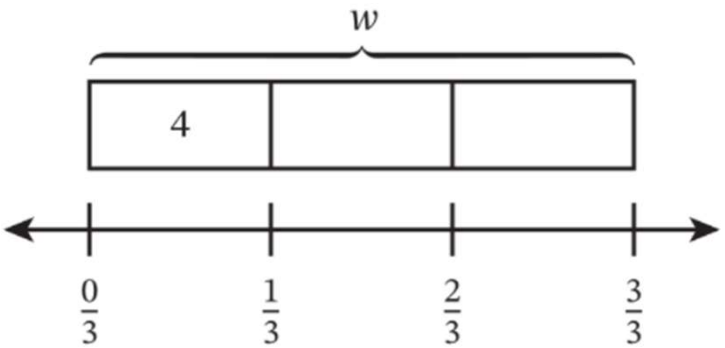
12

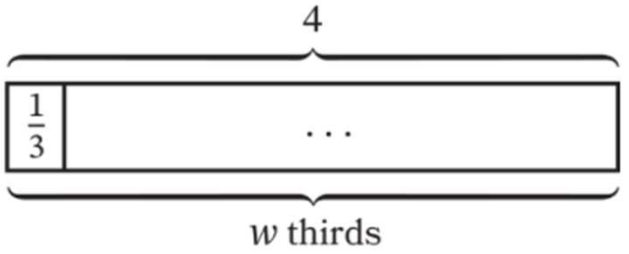
$4 \div \frac{1}{3} = w$

Earlier we wrote a problem from a tape diagram that could be represented by an expression like this one. Before we write a problem for this equation, let's think about how we can INTERPRET the divisor (1/3). In what ways might we make sense of 1/3 in this equation?

- *1/3 might be the SIZE of each group or it could represent the number of groups.*

Ava has $4, which is 1/3 of the cost of a new game. How much does the game cost?





Both tape diagrams work with this equation. Which tape diagram shows 1/3 as a SIZE of the group.

LAND (10-min)

Exit Ticket

19

Write a word problem that can be solved by evaluating $\frac{2}{5} \times 20$. Then solve the word problem.

Exit Ticket – PAGE 179

Small Group Time:
Problem Set Pages 173 – 174

Homework:
Page 123 APPLY BOOK