Module 3 - Lesson 15:

Divide by whole numbers and unit fractions.

CCSS Standard – 5.NF.B.7.b / 5.NF.B.7.c

FLUENCY (10-min)

Whiteboard Exchange: Convert Customary Length Units

1 yard is equal to how many feet? $1 \text{ yd} = \_\_\_\_ \text{ ft}$

1/3 x 3? $\frac{1}{3} \text{ yd} = \_\_\_\_ \text{ ft}$

1/4 x 3? $\frac{1}{4} \text{ yd} = \_\_\_\_ \text{ ft}$

FLUENCY (10-min)

Whiteboard Exchange: Convert Customary Length Units

1 foot is equal to how many inches?

$$1 \text{ ft} = \_\_\_\_\_ \text{ in}$$

1/12 x 12?

$$\frac{1}{12} \text{ ft} = \_\_\_\_\_ \text{ in}$$

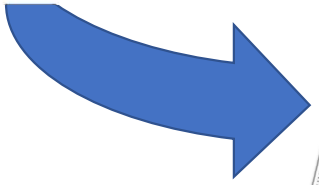
2/3 x 12?

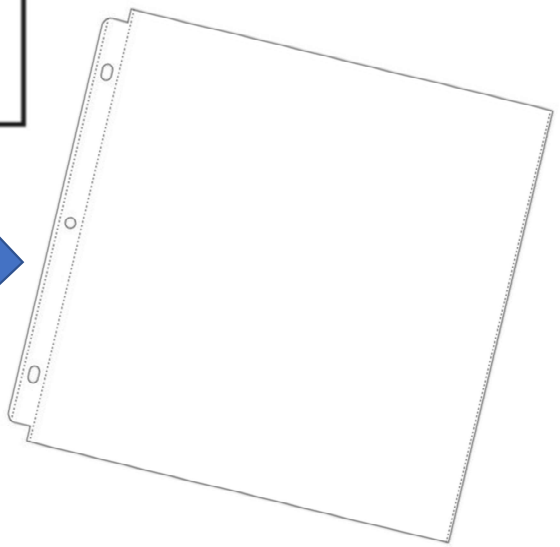
$$\frac{2}{3} \text{ ft} = \_\_\_\_\_ \text{ in}$$

FLUENCY (10-min)

Whiteboard Exchange: Partition Tape Diagram

Place the blank tape diagram into your dry erase sleeve.

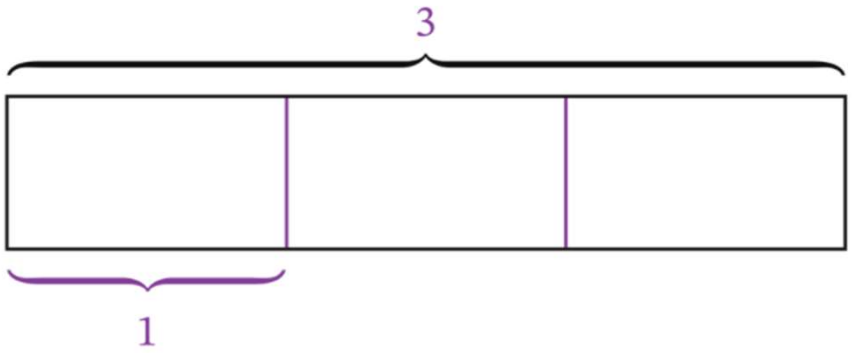




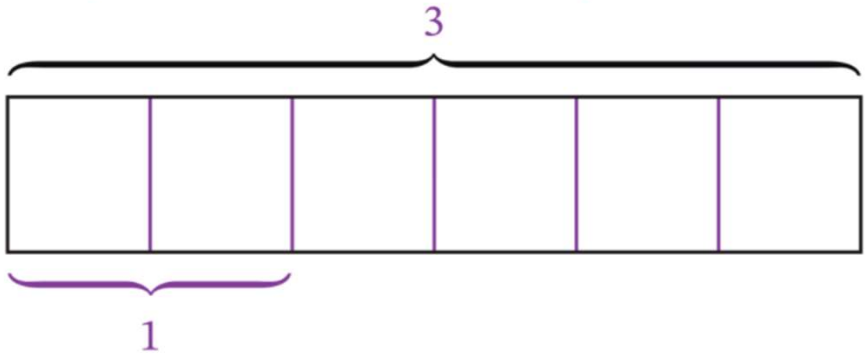
FLUENCY (10-min) **Whiteboard Exchange: Partition Tape Diagrams**

Label the total of the tape diagram as 3

Partition the tape into 3 equal units and label 1 below the tape.

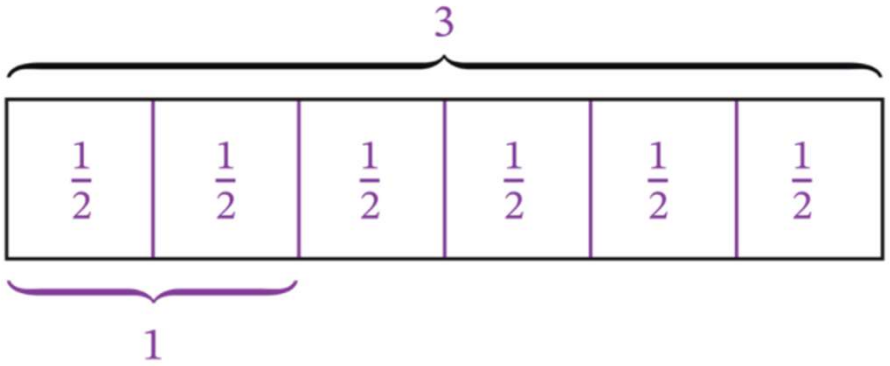


Now partition each unit into 2 equal units.



What is the value of each unit?
Raise your hand when you know.

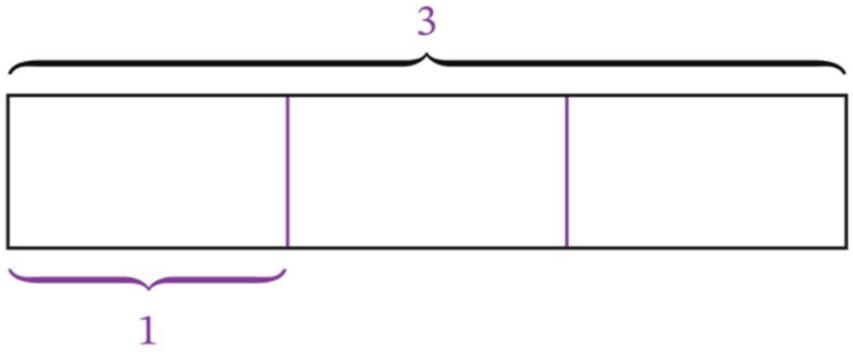
$3 \div \frac{1}{2} = 6$



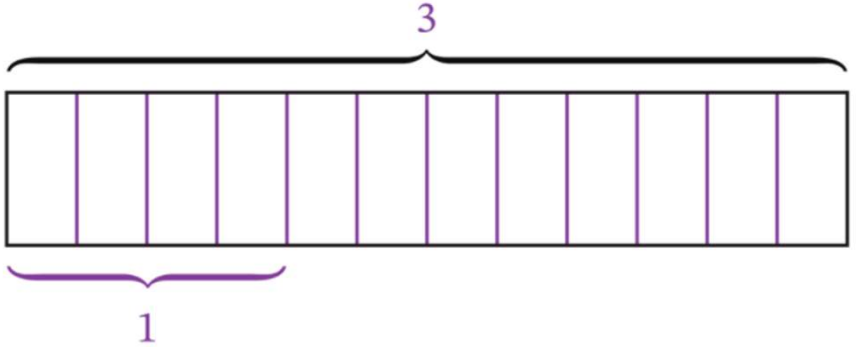
FLUENCY (10-min) **Whiteboard Exchange: Partition Tape Diagrams**

Label the total of the tape diagram as 3

Partition the tape into 3 equal units and label 1 below the tape.

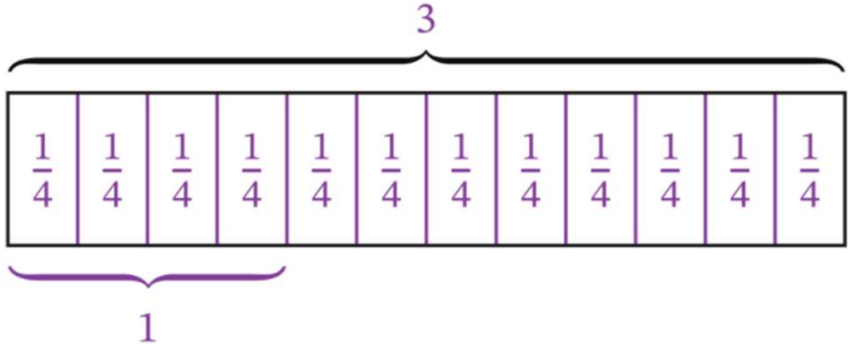


Now partition each unit into 4 equal units.



What is the value of each unit?
Raise your hand when you know.

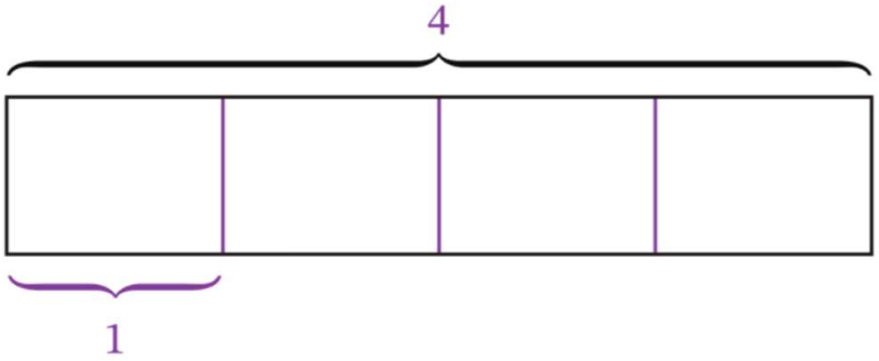
$3 \div \frac{1}{4} = 12$



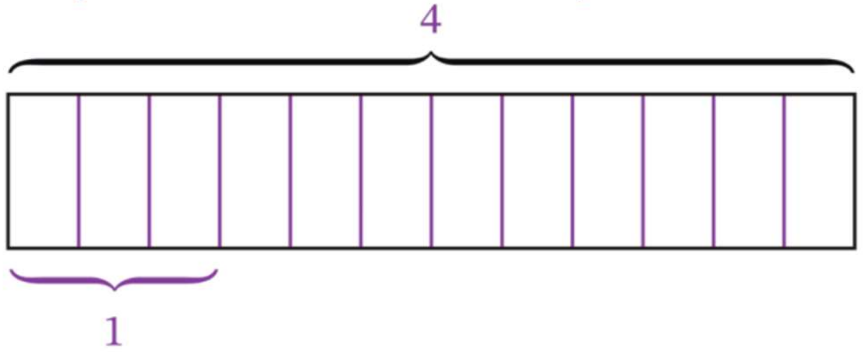
FLUENCY (10-min) **Whiteboard Exchange: Partition Tape Diagrams**

Label the total of the tape diagram as 4

Partition the tape into 4 equal units and label 1 below the tape.

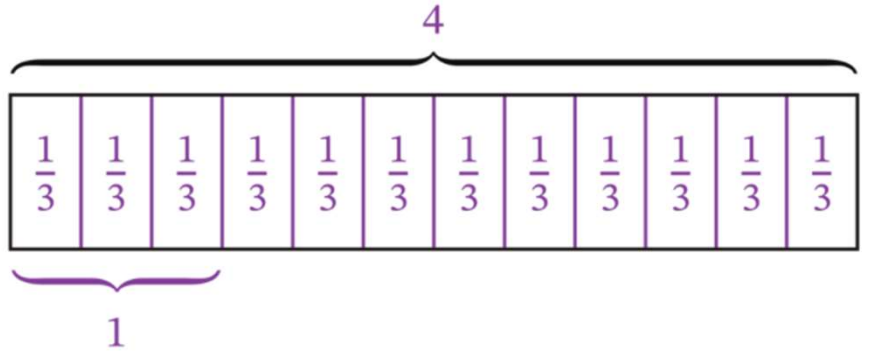


Now partition each unit into 3 equal units.



What is the value of each unit?
Raise your hand when you know.

$4 \div \frac{1}{3} = 12$



FLUENCY (10-min) **Whiteboard Exchange: Partition Tape Diagrams**

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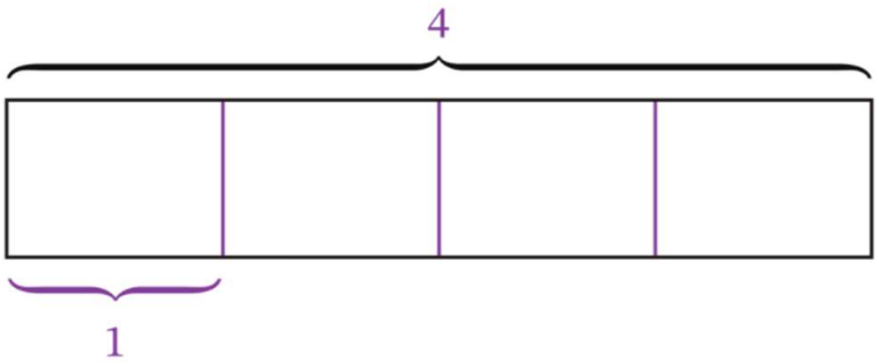
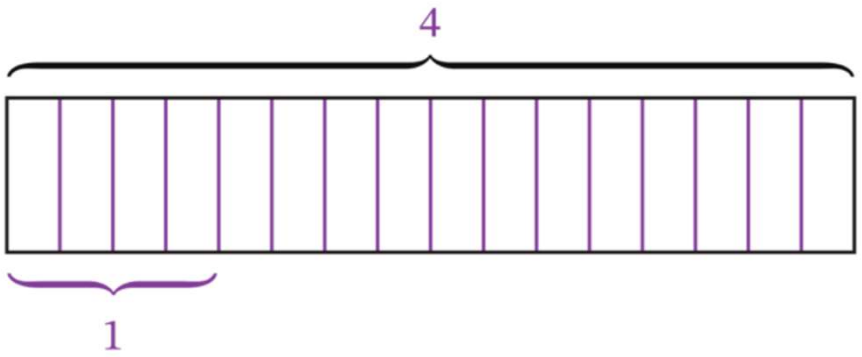
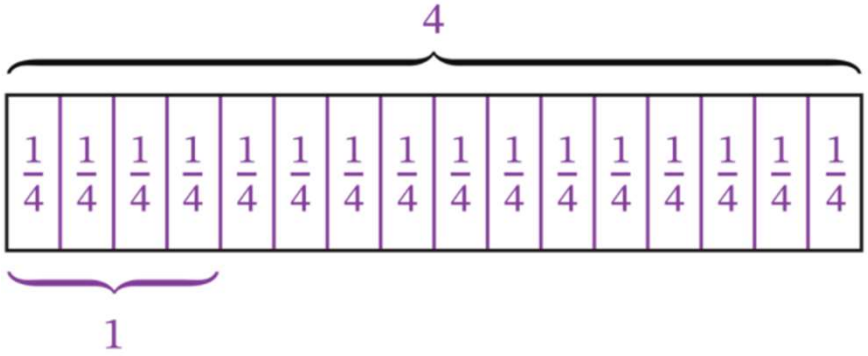


Now partition each unit into 4 equal units.



What is the value of each unit?
Raise your hand when you know.

$4 \div \frac{1}{4} = 16$



LAUNCH (10-min) **Envelope of Division Expression Cards**

TASK:

Pair up

Sort the division cards into 2 categories:

- **"Quotient Greater Than Dividend"**
- **"Quotient Less Than Dividend"**
- **Reason them out versus solving them.**

Examples:

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

If you consider this problem as how many thirds are in 4, then you would reason that there are 3 thirds in 1, so there must be more than 4 thirds in 4.

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

Reason that if you start with 1/3 and partition it into 4 groups, the size of each group must be smaller than 1/3.

Quotient Greater Than Dividend	$4 \div \frac{1}{4}$
Quotient Less Than Dividend	$\frac{1}{2} \div 5$
$\frac{1}{6} \div 7$	$\frac{1}{5} \div 3$
$8 \div \frac{1}{3}$	$3 \div \frac{1}{6}$
$5 \div \frac{1}{2}$	$\frac{1}{6} \div 3$

LEARN (30-min) **Which Model Matches? Why?**

LEARN Book – Page 139

In this story, you should notice that the ¼ of a pan of lasagna is shared, not the 3 days.

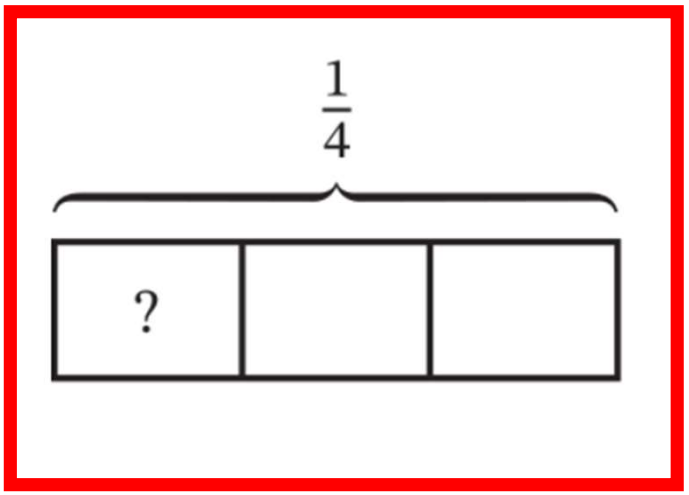
Use the Read–Draw–Write process to solve the problem.

1. Miss Song has $\frac{1}{4}$ of a pan of lasagna in the refrigerator. She wants to cut the lasagna into equal slices so she can have it for dinner for 3 nights. How much of the pan of lasagna will she eat each night?

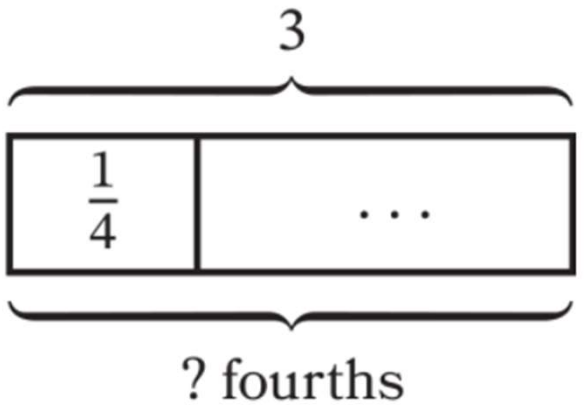
Which tape diagram represents the story?

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

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



If a friend drew the tape diagram on the right, what advice would you give them for when they solve the word problem in the future?



LEARN (30-min)

Reason, Explain, Critique

TASK:

Pair up – Pick a Person A or B

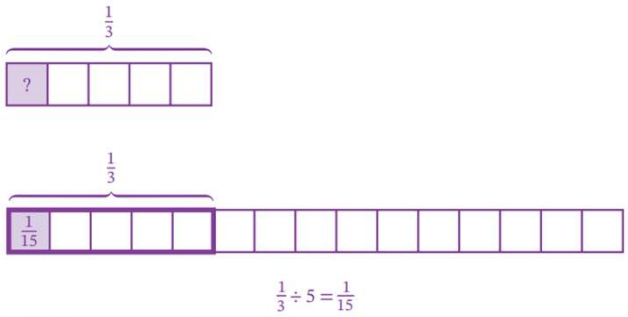
- If you are person "A" – you will solve both Problem A's (set 1 and 2)
- If you are person "B" – you will solve both Problem B's (set 1 and 2)

- Solve your first problem, then exchange with your partner.
- Read your partner's work and look at their tape diagram. Is it correct? If not, critique it.
- Discuss if you think the problem was answered correctly.

SET 1

Problem A

Pablo decides to read $\frac{1}{3}$ of a book in 5 days. He reads the same amount of the book each day. How much of the book does Pablo read each day?

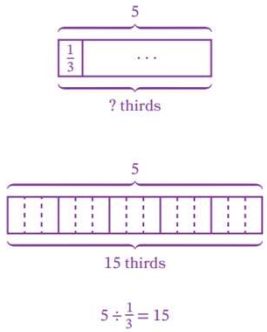


$\frac{1}{3} \div 5 = \frac{1}{15}$

Pablo reads $\frac{1}{15}$ of the book each day.

Problem B

Pablo has 5 books on his reading list. He reads $\frac{1}{3}$ of a book every day. How many days will it take for him to read all 5 books?



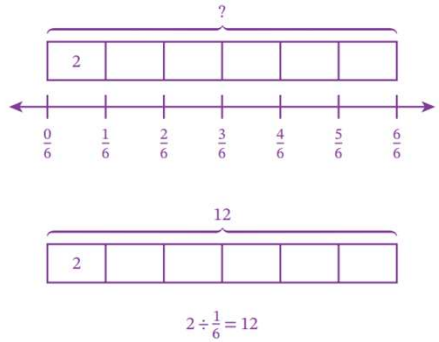
$5 \div \frac{1}{3} = 15$

Pablo will finish all 5 books in 15 days.

SET 2

Problem A

Zara competes in a race. She runs 2 miles before she pauses for a water break. 2 miles is $\frac{1}{6}$ of the race. How many miles is the race?

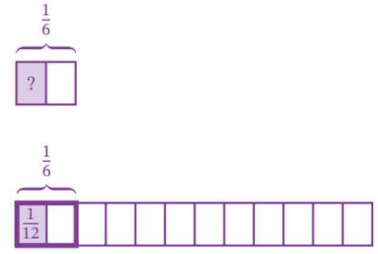


$2 \div \frac{1}{6} = 12$

The race is 12 miles.

Problem B

Zara runs every day for $\frac{1}{6}$ mile. She splits her run into 2 equal distances so she can pause for a water break. After how many miles will Zara pause for her water break?



$\frac{1}{6} \div 2 = \frac{1}{12}$

Zara will pause for her water break after $\frac{1}{12}$ mile.

LAND (10-min) **Exit Ticket**

Exit Ticket – PAGE 145

Small Group Time:
Problem Set Page 141

Homework:
Page 97 APPLY BOOK

Name _____ Date _____

15

Use the Read–Draw–Write process to solve each problem.

1. There are 4 children who share $\frac{1}{2}$ gallon of milk equally. How much milk does each child get?

2. How many $\frac{1}{3}$ foot pieces can be cut from 3 feet of string?