

---

## **Module 3 - Lesson 20:**

Solve multi-step word problems involving fractions and write equations with parentheses.

**CCSS Standard – 5.NF.B.7.c**

**FLUENCY** (10-min)

Whiteboard Exchange: Convert Customary Length Units



3 feet is equal to how many yards?

$$3 \text{ ft} = \underline{\quad\quad} \text{ yd}$$

$1 \div 3?$

$$1 \text{ ft} = \underline{\quad\quad} \text{ yd}$$

$5 \div 3?$

$$5 \text{ ft} = \underline{\quad\quad} \text{ yd}$$

**FLUENCY** (10-min)

Whiteboard Exchange: Convert Customary Length Units



12 inches is equal to how many feet?

$$12 \text{ in} = \underline{\hspace{2cm}} \text{ ft}$$

$1 \div 12?$

$$1 \text{ in} = \underline{\hspace{2cm}} \text{ ft}$$

$9 \div 12?$

$$9 \text{ in} = \underline{\hspace{2cm}} \text{ ft}$$

**FLUENCY** (10-min)

**Whiteboard Exchange: Subtract a Fraction from a Whole Number**



Write and complete the equation.  
Show your method.

$$2 - \frac{1}{3} = \underline{\hspace{2cm}}$$

$$2 - \frac{2}{5} = \underline{\hspace{2cm}}$$

$$3 - \frac{3}{4} = \underline{\hspace{2cm}}$$

$$3 - \frac{4}{6} = \underline{\hspace{2cm}}$$

$$4 - \frac{2}{9} = \underline{\hspace{2cm}}$$

$$6 - \frac{5}{12} = \underline{\hspace{2cm}}$$

**LAUNCH** (10-min)

Represent multiplicative comparison relationships concretely.



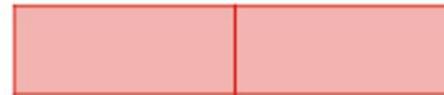
Use interactive tool

LEARN book page 181.

Each paper strip represents 1 unit.

We will represent different relationships by using these strips.

1. The red strip is twice as long as the blue strip.

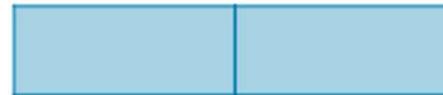


*Which strip should be longer: red or blue? Why?*

*How could I show that the red strip is TWICE as long as the blue strip?*



2. The red strip is  $\frac{1}{2}$  times as long as the blue strip.



**LAUNCH** (10-min)

Represent multiplicative comparison relationships concretely.

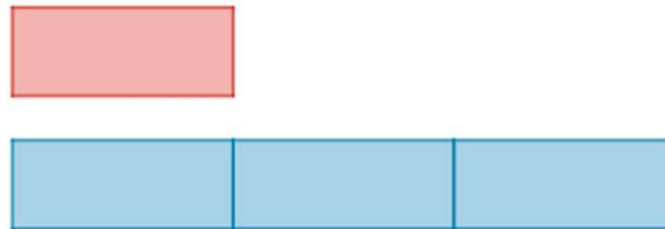


Use interactive tool

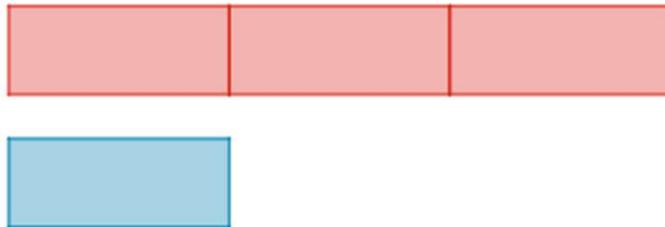
LEARN book page 181.

Each paper strip represents 1 unit.

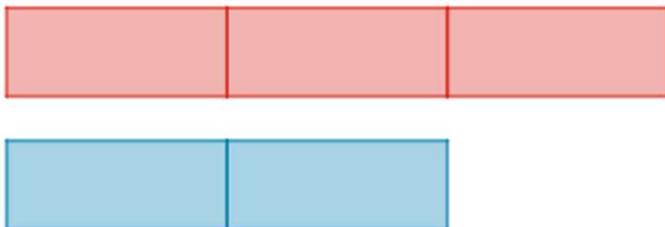
3. The blue strip is 3 times as long as the red strip.



4. The blue strip is  $\frac{1}{3}$  times as long as the red strip.



5. The blue strip is  $\frac{2}{3}$  times as long as the red strip.



*Why do you think we call these examples comparison relationships?*

*What do you think was the point of using two different color tapes to make these comparison values?*

**LEARN (30-min)**

**Solve a Comparison Problem**

Do you think that a comparison tape diagram would help us to model this story? Why?

How many different tape diagrams would we need?

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

- In the fifth grade, there are  $\frac{4}{5}$  as many students who do not wear glasses as those who do wear glasses. There are 60 students who wear glasses. How many students are in the fifth grade?

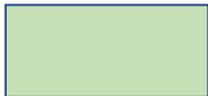
What do we know?

*More students wear glasses because we know there are  $\frac{4}{5}$  as many who do not wear glasses.  $\frac{4}{5}$  is less than 1. We also know 60 student wear glasses.*

Which tape would be longer? Why?

*The tape for students who wear glasses will be longer.*

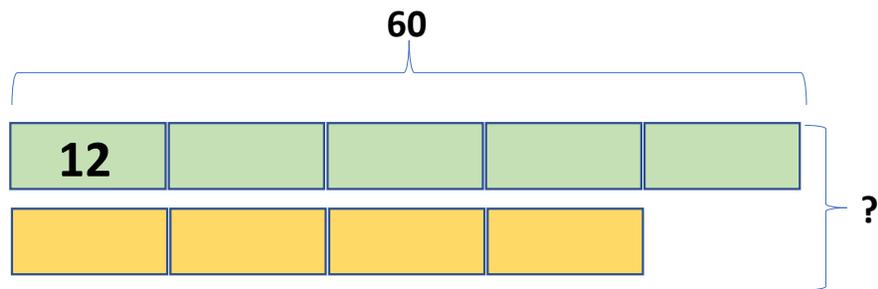
How many parts should each tape be?



**Wear glasses**



**Do not wear glasses**



What conclusions can you make? How many students are in the fifth grade?

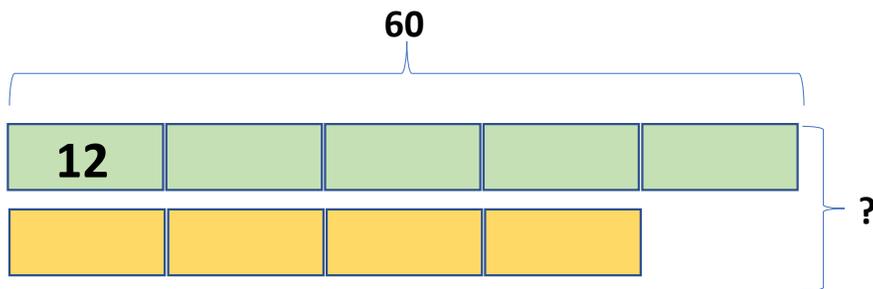
**108 students**

**LEARN** (30-min)

**Solve a Comparison Problem**

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

1. In the fifth grade, there are  $\frac{4}{5}$  as many students who do not wear glasses as those who do wear glasses. There are 60 students who wear glasses. How many students are in the fifth grade?



What conclusions can you make? How many students are in the fifth grade?

**108 students**

60 students wear glasses.

$\frac{4}{5}$  as many students do not.

$$\frac{4}{5} \times 60 = 48$$

$$60 + (\frac{4}{5} \times 60)$$

$$60 + 48 = \mathbf{108 \text{ students}}$$

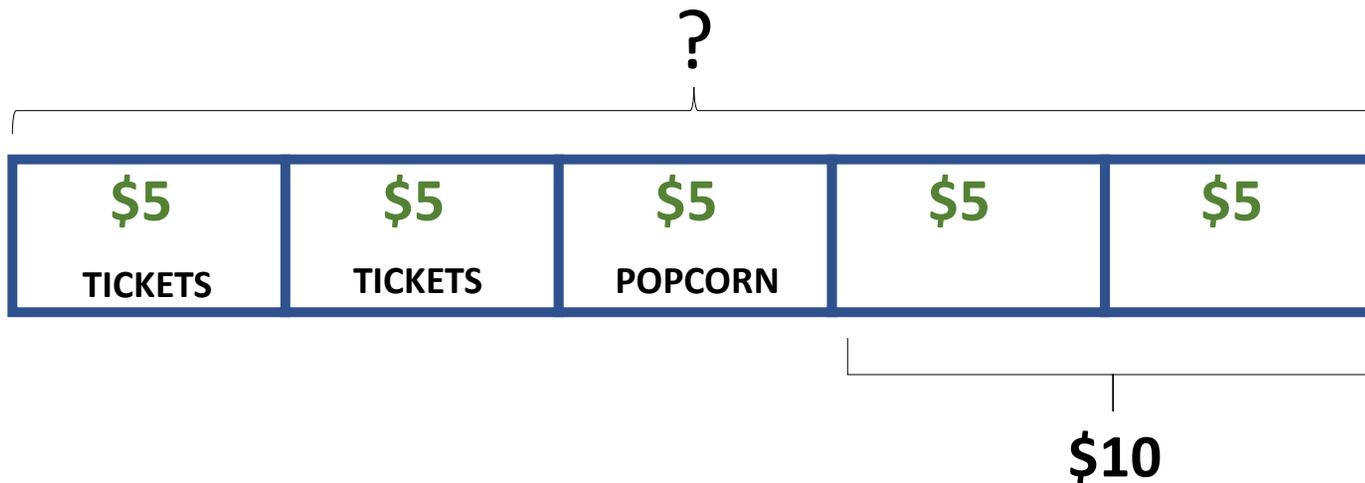
**LEARN** (30-min)

**Solve Word Problems**

2. Toby spends  $\frac{2}{5}$  of his money on movie tickets. He spends  $\frac{1}{3}$  of the remaining money on popcorn. He has \$10 left. How much money did Toby have to begin with?

**\$25**

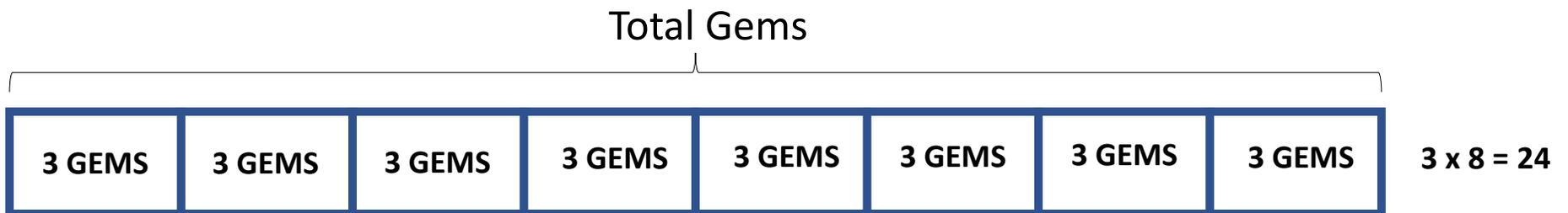
Do you think we need a comparison tape diagram to model this story or just a regular tape diagram?



**LEARN** (30-min)**Solve Word Problems**

3. 3 gems is  $\frac{1}{8}$  of the total gems in a video game level. The player found  $\frac{5}{6}$  of the gems in the level.  
How many gems did the player find in the level?

Let's write an equation and draw a tape diagram to represent this problem.

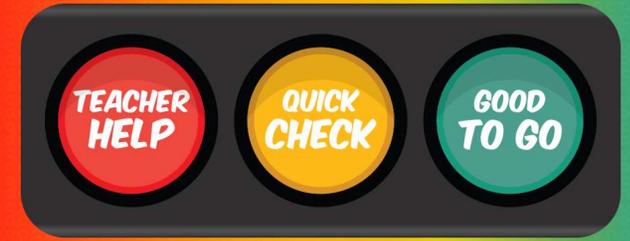


$$\frac{5}{6} \times 24 = 20$$

1

**LAND** (10-min)

## Exit Ticket



\_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

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

Mr. Sharma buys a bag of 24 strawberries. He eats  $\frac{1}{4}$  of them. He then freezes  $\frac{2}{3}$  of the remaining strawberries. He keeps the rest of them in the fridge. How many strawberries does Mr. Sharma freeze?



Exit Ticket – PAGE 189

### **Small Group Time:**

Problem Set Page 185

### **Homework:**

Page 129 APPLY BOOK