

# Using Tape Diagrams for Ratios

## Lesson 2-10

DATE \_\_\_\_\_

TIME \_\_\_\_\_

### Math Message

- 1 Gabriel buys a box of 15 apricots.  
For every 3 apricots he eats, he gives 2 to Beverly to eat.

a. Draw a picture to model the problem.

b. Write a ratio to show the number of apricots Beverly eats to the number Gabriel eats. \_\_\_\_\_

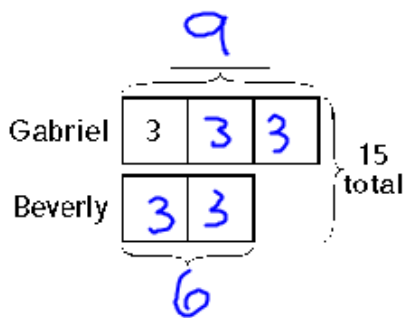
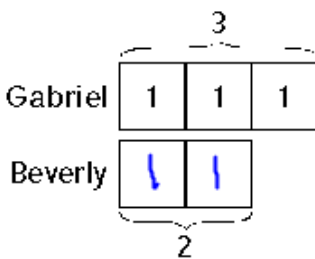
c. Write a ratio to show the number of apricots Beverly eats to the total number in the box. \_\_\_\_\_

(b)  $\frac{\text{Bev}}{\text{Gabe}} = \frac{2}{3}$

(c)  $\frac{\text{Bev}}{\text{total}} = \frac{2}{5} = \frac{6}{15}$

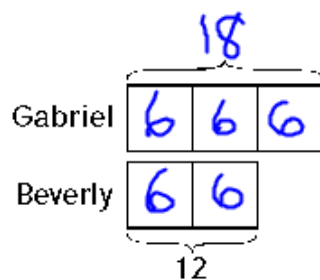
You can use a **tape diagram** to help you organize the information in a ratio number story.

- 2 Examine the tape diagrams for Gabriel and Beverly. Fill in the missing numbers.  
(Gabriel shares the apricots in a ratio of 3 for himself and 2 for Beverly.)



Complete the tape diagrams to model and solve the problems.

- 3 Gabriel buys a large box of apricots. He shares them with Beverly using the same ratio as in Problem 1.  
If Beverly gets 12 apricots,  
how many does Gabriel get? \_\_\_\_\_



- 4 Beverly collects stamps. After Gabriel sees her collection, he wants to collect stamps, too. So she gives him 1 stamp for every 5 stamps that she keeps.

If there are 72 stamps in all,  
how many does Beverly keep? \_\_\_\_\_

60 stamps



$\frac{\text{Bev}}{\text{Gabe}} = \frac{2}{3} \frac{12}{x}$

$2x = 36$

$\frac{2x}{2} = \frac{36}{2}$

$x = 18$

# Using Tape Diagrams with Aspect Ratios

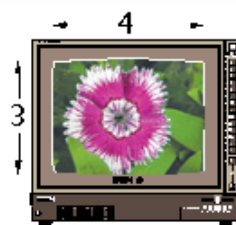
## Lesson 2-10

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If you ever watch old movies, you may see this message:

**This film has been modified from its original version. It has been formatted to fit your screen.**



An *aspect ratio* is the relationship between the width and height of an image.

In 1889, the standard aspect ratio for film was set at 4 : 3.

Old television sets also had an aspect ratio of 4 : 3.

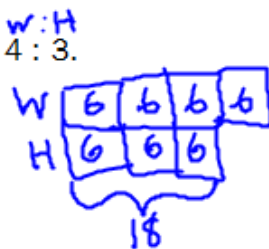
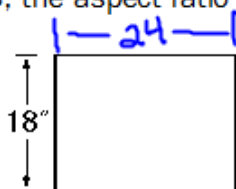
In the 1950s, Hollywood wanted people to go to movie theaters, so they changed the size of the movies to make them more appealing than television. Wide-screen films have an aspect ratio of 16 : 9.

Today's high-definition televisions also have an aspect ratio of 16 : 9.



Draw a tape diagram to figure out the other dimension for each television described below. For Problems 1–3, the aspect ratio is 4 : 3.

- 1 The height is 18 inches.  
Width: \_\_\_\_\_

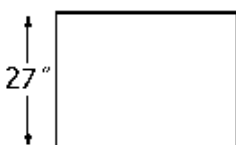


$$\frac{W}{H} = \frac{4}{3} = \frac{x}{18}$$

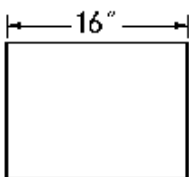
$$\frac{3x}{3} = \frac{72}{3}$$

$$x = 24''$$

- 2 The height is 27 inches.  
Width: \_\_\_\_\_



- 3 The width is 16 inches.  
Height: \_\_\_\_\_



### Try This

- 4 Explain why some of the screen will be dark when a film with a 16 : 9 aspect ratio is shown on an old 4 : 3 TV screen.




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# Math Boxes

## Preview for Unit 3

### Lesson 2-10

DATE

TIME



- 1 Write each of the following numbers using digits.

a. Five and fifty-five hundredths

\_\_\_\_\_

b. One hundred eight thousandths

\_\_\_\_\_

c. Two hundred six and nineteen thousandths

\_\_\_\_\_

SRB  
109-110

- 2 Use  $>$ ,  $<$ , or  $=$  to compare each pair of numbers.

a.  $0.034$  \_\_\_\_\_  $0.347$

b.  $76.003$  \_\_\_\_\_  $76.2$

c.  $1.045$  \_\_\_\_\_  $1.04$

d.  $30.80$  \_\_\_\_\_  $30.800$

SRB  
111-112

- 3 Calculate.

a.  $\$4.83 - \$2.96 =$  \_\_\_\_\_

b. \_\_\_\_\_  $= \$5.27 + \$6.75$

SRB  
117

- 4 Justin is planning his class picnic. The school has a budget of \$242 for 4 classes to share equally. How much does Justin have in his budget?

Number model: \_\_\_\_\_

Solution: \_\_\_\_\_

SRB  
32

- 5 **Writing/Reasoning** Explain how you used place value to compare the numbers in Problem 2d.