

LESSON  
**6.1 Ratios**

How do you use ratios to compare two quantities?

Oct 19-7:18 AM

### Representing Ratios with Models

pg.149

A **ratio** is a comparison of two quantities. It shows how many times as great one quantity is than another.



For example, the ratio of star-shaped beads to moon-shaped beads in a bracelet is **3 to 1**.

- A** Write the ratio of moon beads to star beads.
- B** Write the ratio of moon beads to all the beads.
- C** If the bracelet has 2 moon beads, how many star beads does it have?
- D** If the bracelet has 9 star beads, how many moon beads does it have?  
How do you know?

$$\begin{array}{r} 1 + 3 \\ \hline 1 + 4 \\ \hline 6 \end{array}$$

3

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Oct 19-7:26 AM

# Writing Ratios pg.150

The numbers in a ratio are called *terms*. A ratio can be written in several different ways.



*words (to describe)*  
5 dogs to 3 cats

5 to 3

5:3

$\frac{5}{3}$

A ratio can compare a part to a part, a part to the whole, or the whole to a part.

**EXAMPLE 1**   **FL 6.RP.1.1**





**A** Write the ratio of comedies to dramas in three different ways.

*part to part*  
8:3    $\frac{8}{3}$    8 comedies to 3 dramas

**B** Write the ratio of dramas to total videos in three different ways.

*part to whole*  
3:14    $\frac{3}{14}$    3 dramas to 14 total videos

**Sam's Video Collection**

	Comedies	8
	Dramas	3
	Cartoons	2
	Science Fiction	1

*The total number of videos is  $8 + 3 + 2 + 1 = 14$ .*

**Reflect**

**3. Analyze Relationships** Describe the relationship between the drama videos and the science fiction videos.  
*3 Drama videos to 1 Sci. Fic. video*

**4. Analyze Relationships** The ratio of floor seats to balcony seats in a theater is 20:1. Does this theater have more floor seats or more balcony seats? How do you know?  
*Floor 20 > 1*

Oct 19-7:27 AM

5 dogs to 3 cats      5 to 3      5:3       $\frac{5}{3}$

**YOUR TURN**

Write each ratio in three different ways.

5. bagel chips to peanuts *3:1   3 to 1    $\frac{3}{1}$*
6. total party mix to pretzels *8:3   8 to 3    $\frac{8}{3}$*
7. cheese crackers to peanuts *1 to 1    $\frac{1}{1}$    1:1*

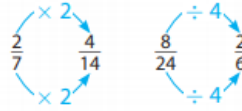
**Party Mix**  
**Makes 8 cups**

- 3 cups pretzels
- 3 cups bagel chips
- 1 cup cheese crackers
- 1 cup peanuts

Oct 19-7:27 AM

# Equivalent Ratios pg. 151

**Equivalent ratios** are ratios that name the same comparison. You can find equivalent ratios by using a table or by multiplying or dividing both terms of a ratio by the same number. So, equivalent ratios have a multiplicative relationship.



A ratio with terms that have no common factors is said to be in simplest form.

## EXAMPLE 2



FL 6.RP.1.3, 6.RP.1.3

You make 5 cups of punch by mixing 3 cups of cranberry juice with 2 cups of apple juice. How much cranberry juice and how much apple juice do you need to make four times the original recipe?

**Method 1** Use a table.

### STEP 1

Make a table comparing the number of cups of cranberry juice and apple juice needed to make two times, three times, and four times the original recipe.

Multiply both terms of the original ratio by the same number to find an equivalent ratio.

		$3 \times 2$	$3 \times 3$	$3 \times 4$
		↓	↓	↓
<b>Cranberry Juice</b>	3	6	9	12
<b>Apple Juice</b>	2	4	6	8
		$2 \times 2$	$2 \times 3$	$2 \times 4$

### STEP 2

Write the original ratio and the ratio that shows the amount of cranberry juice and apple juice needed to make four times the original recipe.

$$\frac{3}{2} = \frac{12}{8}$$

You will need 12 cups of cranberry juice and 8 cups of apple juice.

**Method 2** Multiply both terms of the ratio by the same number.

### STEP 1

Write the original ratio in fraction form.

$$\frac{3}{2}$$

### STEP 2

Multiply the numerator and denominator by the same number.

To make four times the original recipe, multiply by 4.



To make four times the original recipe, you will need 12 cups of cranberry juice and 8 cups of apple juice.

Oct 19-7:28 AM

## YOUR TURN

pg. 152

Write three ratios equivalent to the given ratio.

8.  $\frac{8}{10}$  \_\_\_\_\_

**Method 1** Use a table.

		$\times 2$	$\times 3$	$\times 4$
	8	16	24	32
	10	20	30	40
		$\times 2$	$\times 3$	$\times 4$

9.  $\frac{5}{2}$ ,  $\frac{50}{20}$ ,  $\frac{35}{14}$ ,  $\frac{10}{4}$  \_\_\_\_\_

**Method 2** Multiply both terms of the ratio by the same number.

$$\begin{array}{l} \frac{5}{2} \times \frac{10}{10} \\ \frac{5}{2} \times \frac{7}{7} \\ \frac{5}{2} \times \frac{7}{7} \end{array}$$

Oct 19-7:30 AM

Directions for Monday's Rework

Oct 19-10:22 AM

HW - textbook page 153 (11 - 17)

You may work right on the page :)

Now - Finish test if needed

Imagine Math Site Code

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Oct 19-7:32 AM