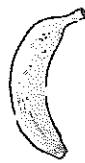# Ratios as Fractions

CCSS: **6.RP.A.1:** Understand the concept of ratio and use ratio language to describe a relationship between two quantities. **6.RP.A.3:** Use ratio and rate reasoning to solve real-world and mathematical problems ... .

Launch

© MP6, MP7

Due to high demand, a gift shop wants more fruit boxes with a 1 : 3 ratio of the number of apples to the total number of fruit.

Use letters to complete each plan. Write the fraction $\frac{\text{number of apples}}{\text{total number of fruit}}$. Cross out any plan that does not have the correct ratio.

b = banana   a = apple   p = pear   o = orange

Box Plan 1

Box Plan 2

Box Plan 3

☐ apples
☐ fruit

☐ apples
☐ fruit

☐ apples
☐ fruit

Reflect How do the ratio and the fractions in the problem both describe the apples in the boxes?

Got It?

A school baseball team has 5 pitchers, 2 catchers, and 12 other fielders. Write the ratio of the number of pitchers to the total number of players in three ways.

Suppose you have a fruit box in which the ratio of the number of pears to the number of apples is $\frac{2}{3}$. Explain what this ratio tells you about the relationship between the types of fruit in the box.

Got It?

PART 2 Got It

> Write two different ratios equivalent to $\frac{6}{8}$.

PART 3 Got It (1 of 2)

> Write the ratio 12 to 40 in simplest form.

PART 3 Got It (2 of 2)

> How can you determine whether a ratio is in simplest form?

Close and Check

Focus Question

Why might you want to write a ratio as a fraction?

_____

_____

_____

Do you know HOW?

1. You propose a new mix of fruit for a fruit box. Write the ratio of apples to fruit (apples, pears, oranges, and mangoes) in three ways.

p	o	p
a	o	m

[ ] to [ ]

[ ] : [ ]   [ ]
                   [ ]

2. The ratio of rock songs to all songs on a playlist is $\frac{36}{60}$. Write this ratio in simplest form.

[ ]
[ ]

3. Circle the ratios that are equivalent to $\frac{36}{60}$.

$\frac{6}{10}$ $\frac{9}{15}$ $\frac{15}{20}$

$\frac{24}{36}$ $\frac{48}{80}$

Do you UNDERSTAND?

4. **Writing** Your class visits the zoo. Your friend says that the ratio of elephants to giraffes is $\frac{3}{8}$. You describe the relationship of elephants to giraffes as $\frac{9}{24}$. Can both you and your friend be correct? Explain.

_____

_____

_____

_____

5. **Compare and Contrast** How would the problem above have been the same or different if the ratios would have been written as 3 : 8 and 9 : 24? Explain.

_____

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Ratios as Decimals

CCSS: 6.RP.A.1: Understand the concept of ratio and use ratio language to describe a relationship between two quantities. 6.RP.A.3: Use ratio and rate reasoning to solve real-world and mathematical problems ... .

Launch

MP4, MP7

Two students take turns recording daily rain totals. When the teacher sees their work, she exclaims, "Give me the daily results and total rainfall in one way!"

Student 1
Rain Totals
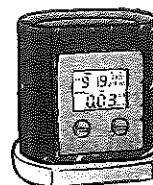
Monday: $\frac{1}{2}$ inch

Wednesday: $\frac{2}{10}$ inch

Friday: no rain

Student 2
Rain Totals

Tuesday: 0.3 inch

Thursday: 0.6 inch

Show how you would revise the results for the teacher.

Explain your work.

Reflect Does it matter whether you choose decimals or fractions? Are there situations where using one is better than using the other?

MP3

ND?

zoo. Your
lephants
the
giraffes
r friend

How would
been the
ratios would
8 and 9 : 24?

Got It?

PART 1 Got It

Write the ratio 3 : 8 as a fraction and a decimal.

PART 2 Got It

The ratio of the number of sixth graders to the total number of students at a school is 0.45. Write the ratio 0.45 as a fraction in simplest form.

Got It?

Another player's batting average is .290. The player has 200 at bats. How many hits does the player have?

PART 3 Got It (2 of 2)

Which player has the best batting average? Explain how you found your answer.

Player Batting Averages

Player	Number of Hits	Number of At Bats	Batting Average
Player 1	33	120	
Player 2	39	150	
Player 3	22	80	

Discuss with a classmate

Read each other's explanation for the problem.
Is the explanation clear?
Are there any words or phrases that you do not understand? If so, ask your teacher to explain them to you.

Close and Check

Focus Question

Why might you want to write a ratio as a decimal?

_____

_____

_____

_____

Do you know HOW?

1. According to a recent study, the ratio of households in the United States that have high-speed Internet access is 0.64. Cross out the fractions that cannot be used to describe this ratio.

   $\frac{64}{100}$ $\frac{1}{64}$ $\frac{16}{25}$ $\frac{6}{4}$

2. Each row of the table shows a star basketball player's ratio of free throws made to free throws attempted. Complete the table. Circle the game with the best ratio.

Free Throw Ratio		
Game 1	$7:8$ $\frac{7}{8}$	0.875
Game 2	$3:4$ $\frac{3}{4}$	0.75
Game 3	$4:5$ $\frac{4}{5}$	0.8

3. In Game 4, the star player makes 0.6 of her free throws attempted. She attempts 5 free throws. How many did she make?

   ☐ free throws

Do you UNDERSTAND?

4. **Writing** Describe why writing each ratio of free throws made as a decimal makes it easier to compare the ratios.

   _____

   _____

   _____

   _____

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5. **Error Analysis** A study shows that approximately 0.08 of the population are left handed. Your friend says, "8 out of 10 people are left handed." What mistake does your friend make?

   _____

   _____

   _____

   _____