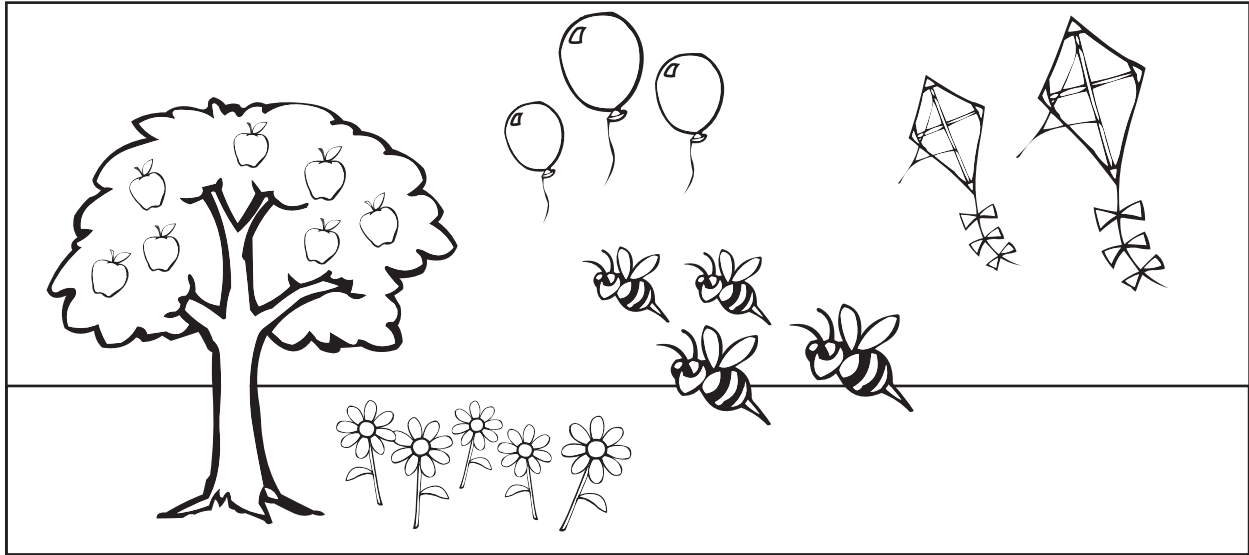


## What Ratio Is It?

P-RR 1

**Instructions:** Below you will be asked to find the ratios between various objects in this diagram.



What is the ratio of...

**1** Bees to Balloons?

4 : 3 or  $\frac{4}{3}$

**2** Flowers to Apples?

**3** Trees to Flowers?

**4** Bees to Flowers?

**5** Kites to Bees?

**6** Balloons to Trees?

**7** Kites to Apples?

**8** Apples to Bees?

**9** Trees to Apples?

**10** Kites to Balloons?

## Converting to a Unit Rate

P-RR 2

**Instructions:** Convert each of these rates into a unit rate by dividing the top number by the bottom number. Don't forget the units!

1  $\frac{120 \text{ miles}}{6 \text{ hours}} = \frac{20 \text{ miles}}{1 \text{ hour}}$

$120 \div 6 = 20$

2  $\frac{36 \text{ push-ups}}{2 \text{ minutes}}$

3  $\frac{45 \text{ dollars}}{3 \text{ hours}}$

4  $\frac{250 \text{ km}}{5 \text{ hours}}$

5  $\frac{180 \text{ cakes}}{6 \text{ days}}$

6  $\frac{24 \text{ games}}{12 \text{ days}}$

7  $\frac{100 \text{ meters}}{10 \text{ second}}$

8  $\frac{18 \text{ apples}}{9 \text{ days}}$

9  $\frac{25 \text{ km}}{10 \text{ hours}}$

10  $\frac{15 \text{ pies}}{2 \text{ days}}$

## Using Unit Rates to Compare

P-RR 3

**Instructions:** Use unit rates to solve the following word problems.

- 1** Tom and Paul are building a brick wall. Tom lays 420 bricks in 6 hours. Paul lays 240 bricks in 3 hours. Whose rate is faster?

$$\begin{array}{cc} \text{Tom's Rate} & \text{Paul's Rate} \\ \frac{420}{6} = \frac{70}{1} \text{ bricks} & \frac{240}{3} = \frac{80}{1} \text{ bricks} \\ \text{hour} & \text{hour} \end{array}$$

$70 < 80$  so  
Paul's rate is faster.

- 2** Kim and Ben are planting a garden. Kim plants 24 flowers in 2 hours. Ben plants 33 flowers in 3 hours. Whose rate is faster?

- 3** Ann's Bakery bakes 450 loaves of bread in 3 days. Mark's Bakery bakes 560 loaves of bread in 4 days. Which bakery bakes bread at the faster rate?

- 4** Dave and Eric are painting a long fence. Dave paints 125 feet of the fence in 5 hours. Eric paints 175 feet in 7 hours. Whose rate is faster?

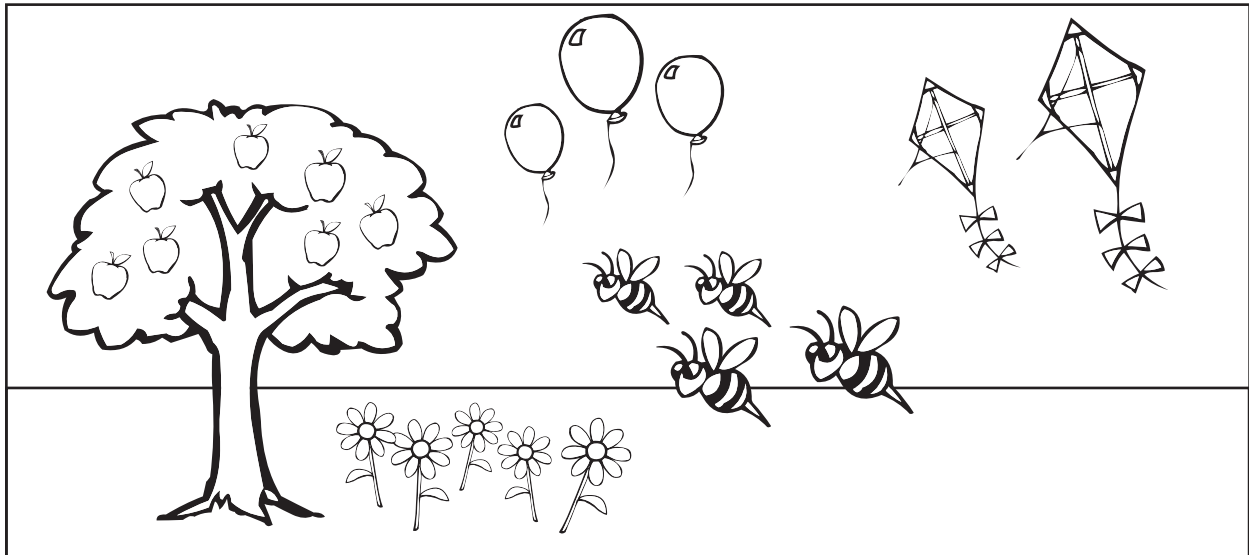
- 5** A bear can run 400 feet in 8 seconds. A horse can run 290 feet in 5 seconds? Which animal runs at the faster rate?

- 6** Sam earned \$380 working for 8 hours. Rich earned \$195 working for 4 hours. Who has the higher rate of pay?

## What Ratio Is It?

P-RR 1

**Instructions:** Below you will be asked to find the ratios between various objects in this diagram.



What is the ratio of...

**1** Bees to Balloons?

$$4 : 3 \text{ or } \frac{4}{3}$$

**2** Flowers to Apples?

$$5 : 7 \text{ or } \frac{5}{7}$$

**3** Trees to Flowers?

$$1 : 5 \text{ or } \frac{1}{5}$$

**4** Bees to Flowers?

$$4 : 5 \text{ or } \frac{4}{5}$$

**5** Kites to Bees?

$$2 : 4 \text{ or } \frac{2}{4}$$

**6** Balloons to Trees?

$$3 : 1 \text{ or } \frac{3}{1}$$

**7** Kites to Apples?

$$2 : 7 \text{ or } \frac{2}{7}$$

**8** Apples to Bees?

$$7 : 4 \text{ or } \frac{7}{4}$$

**9** Trees to Apples?

$$1 : 7 \text{ or } \frac{1}{7}$$

**10** Kites to Balloons?

$$2 : 3 \text{ or } \frac{2}{3}$$

## Converting to a Unit Rate

P-RR 2

**Instructions:** Convert each of these rates into a unit rate by dividing the top number by the bottom number. Don't forget the units!

$$1 \quad \frac{120 \text{ miles}}{6 \text{ hours}} = \frac{20 \text{ miles}}{1 \text{ hour}}$$

$$120 \div 6 = 20$$

$$2 \quad \frac{36 \text{ push-ups}}{2 \text{ minutes}} = \frac{18 \text{ push-ups}}{1 \text{ minute}}$$

$$36 \div 2 = 18$$

$$3 \quad \frac{45 \text{ dollars}}{3 \text{ hours}} = \frac{15 \text{ dollars}}{1 \text{ hour}}$$

$$45 \div 3 = 15$$

$$4 \quad \frac{250 \text{ km}}{5 \text{ hours}} = \frac{50 \text{ km}}{1 \text{ hour}}$$

$$250 \div 5 = 50$$

$$5 \quad \frac{180 \text{ cakes}}{6 \text{ days}} = \frac{30 \text{ cakes}}{1 \text{ day}}$$

$$180 \div 6 = 30$$

$$6 \quad \frac{24 \text{ games}}{12 \text{ days}} = \frac{2 \text{ games}}{1 \text{ day}}$$

$$24 \div 12 = 2$$

$$7 \quad \frac{100 \text{ meters}}{10 \text{ second}} = \frac{10 \text{ meters}}{1 \text{ second}}$$

$$100 \div 10 = 10$$

$$8 \quad \frac{18 \text{ apples}}{9 \text{ days}} = \frac{2 \text{ apples}}{1 \text{ day}}$$

$$18 \div 9 = 2$$

$$9 \quad \frac{25 \text{ km}}{10 \text{ hours}} = \frac{2.5 \text{ km}}{1 \text{ hour}}$$

$$25 \div 10 = 2.5$$

$$10 \quad \frac{15 \text{ pies}}{2 \text{ days}} = \frac{7.5 \text{ pies}}{1 \text{ day}}$$

$$15 \div 2 = 7.5$$

## Using Unit Rates to Compare

P-RR 3

**Instructions:** Use unit rates to solve the following word problems.

- 1** Tom and Paul are building a brick wall. Tom lays 420 bricks in 6 hours. Paul lays 240 bricks in 3 hours. Whose rate is faster?

$$\begin{array}{l} \text{Tom's Rate} \\ \frac{420}{6} = \frac{70}{1} \text{ bricks per hour} \end{array} \qquad \begin{array}{l} \text{Paul's Rate} \\ \frac{240}{3} = \frac{80}{1} \text{ bricks per hour} \end{array}$$

$70 < 80$  so  
Paul's rate is faster.

- 2** Kim and Ben are planting a garden. Kim plants 24 flowers in 2 hours. Ben plants 33 flowers in 3 hours. Whose rate is faster?

$$\begin{array}{l} \text{Kim's Rate} \\ \frac{24}{2} = \frac{12}{1} \text{ flowers per hour} \end{array} \qquad \begin{array}{l} \text{Ben's Rate} \\ \frac{33}{3} = \frac{11}{1} \text{ flowers per hour} \end{array}$$

$12 > 11$  so  
Kim's rate is faster.

- 3** Ann's Bakery bakes 450 loaves of bread in 3 days. Mark's Bakery bakes 560 loaves of bread in 4 days. Which bakery bakes bread at the faster rate?

$$\begin{array}{l} \text{Ann's Rate} \\ \frac{450}{3} = \frac{150}{1} \text{ loaves per day} \end{array} \qquad \begin{array}{l} \text{Mark's Rate} \\ \frac{560}{4} = \frac{140}{1} \text{ loaves per day} \end{array}$$

$150 > 140$  so  
Ann's rate is faster.

- 4** Dave and Eric are painting a long fence. Dave paints 125 feet of the fence in 5 hours. Eric paints 175 feet in 7 hours. Whose rate is faster?

$$\begin{array}{l} \text{Dave's Rate} \\ \frac{125}{5} = \frac{25}{1} \text{ feet per hour} \end{array} \qquad \begin{array}{l} \text{Eric's Rate} \\ \frac{175}{7} = \frac{25}{1} \text{ feet per hour} \end{array}$$

$25 = 25$  so  
Their rates are the same!

- 5** A bear can run 400 feet in 8 seconds. A horse can run 290 feet in 5 seconds? Which animal runs at the faster rate?

$$\begin{array}{l} \text{Bear's Rate} \\ \frac{400}{8} = \frac{50}{1} \text{ feet per second} \end{array} \qquad \begin{array}{l} \text{Horse's Rate} \\ \frac{290}{5} = \frac{58}{1} \text{ feet per second} \end{array}$$

$50 < 58$  so  
The Horse's rate is faster.

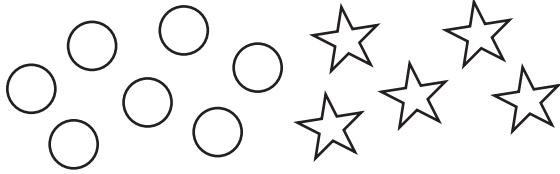
- 6** Sam earned \$380 working for 8 hours. Rich earned \$195 working for 4 hours. Who has the higher rate of pay?

$$\begin{array}{l} \text{Sam's Rate} \\ \frac{380}{8} = \frac{\$47.5}{1} \text{ per hour} \end{array} \qquad \begin{array}{l} \text{Rich's Rate} \\ \frac{195}{4} = \frac{\$48.75}{1} \text{ per hour} \end{array}$$

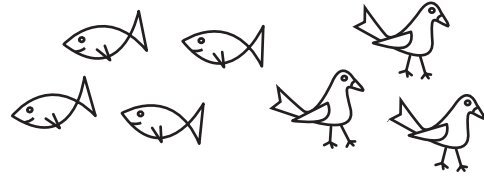
$\$47.50 < \$48.75$  so  
Rich's rate is higher!

## Ratios & Rates

- 1 What is the ratio of circles to stars? Use the ratio symbol (:) in your answer.



- 2 What is the ratio of birds to fish? Use the ratio symbol (:) in your answer.



- 3 If there are 7 girls and 8 boys on the school's track team, what is the ratio of girls to boys? Write your answer in three different ways.

- 4 If a sports field is 100 meters long and 40 meters wide, what is the ratio of its width to its length? Write your answer in three different ways.

- 5 If a car travels 120 miles in 2 hours, what is its rate of speed expressed as a **unit rate**?

- 6 If a plane travels 900 km in 3 hours, what is its rate of speed expressed as a **unit rate**?

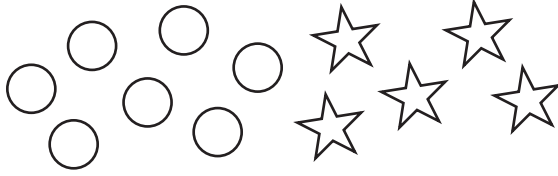
- 7 Tim has a job that pays \$50 for 5 hours of work. Jane has a job that pays \$24 for 2 hours of work. Who has the higher rate of pay? (*Hint: convert to unit rates*)

- 8 Jon can do 64 push-ups in 4 minutes. Paul can do 45 push-ups in 3 minutes. Whose rate is faster? (*Hint: convert to unit rates*)



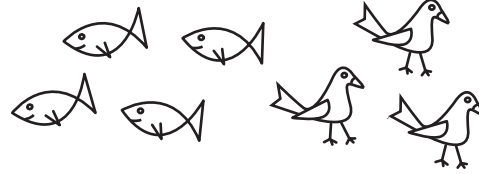
## Ratios & Rates

- 1** What is the ratio of circles to stars? Use the ratio symbol (:) in your answer.



7 : 5

- 2** What is the ratio of birds to fish? Use the ratio symbol (:) in your answer.



3 : 4

- 3** If there are 7 girls and 8 boys on the school's track team, what is the ratio of girls to boys? Write your answer in three different ways.

$\frac{7}{8}$       7 : 8      7 to 8

- 4** If a sports field is 100 meters long and 40 meters wide, what is the ratio of its width to its length? Write your answer in three different ways.

$\frac{40}{100}$       40 : 100      40 to 100

or, in simplified form

$\frac{4}{10}$       4 : 10      4 to 10

- 5** If a car travels 120 miles in 2 hours, what is its rate of speed expressed as a **unit rate**?

$$\frac{120 \text{ mi}}{2 \text{ hr}} = \frac{60 \text{ mi}}{1 \text{ hr}}$$

$$120 \div 2 = 60$$

- 6** If a plane travels 900 km in 3 hours, what is its rate of speed expressed as a **unit rate**?

$$\frac{900 \text{ km}}{3 \text{ hr}} = \frac{300 \text{ km}}{1 \text{ hr}}$$

$$900 \div 3 = 300$$

- 7** Tim has a job that pays \$50 for 5 hours of work. Jane has a job that pays \$24 for 2 hours of work. Who has the higher rate of pay? (*Hint: convert to unit rates*)

$$\frac{50}{5} = \frac{10}{1}$$

\$10/hr

$$\frac{24}{2} = \frac{12}{1}$$

\$12/hr

Jane's rate of pay is higher.

- 8** Jon can do 64 push-ups in 4 minutes. Paul can do 45 push-ups in 3 minutes. Whose rate is faster? (*Hint: convert to unit rates*)

$$\frac{64}{4} = \frac{16}{1}$$

16 push-ups/min

$$\frac{45}{3} = \frac{15}{1}$$

15 push-ups/min

Jon's rate is faster.

