

**4.1**

# Connect Fractions, Decimals, and Percents

MathLinks 7, pp. 124–131

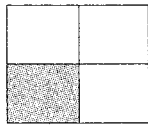
## Key Ideas Review

Choose from the following terms to complete each statement, then answer each question.

decimals      fractions      number line      percent      place value

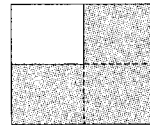
1. A visual model can help identify the \_\_\_\_\_.

a)



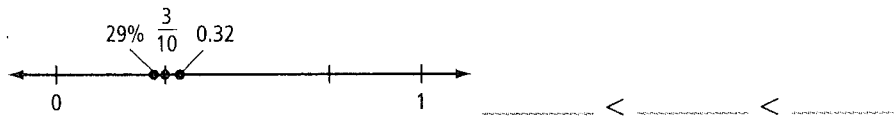
\_\_\_\_\_ % is 0.25 or  $\frac{1}{4}$

b)



\_\_\_\_\_ % is 0.75 or  $\frac{3}{4}$

2. You can use a \_\_\_\_\_ to compare \_\_\_\_\_, decimals, and percents.



3. You can use \_\_\_\_\_ to compare fractions, \_\_\_\_\_, and percents.

0.43

$\frac{4}{10} =$  \_\_\_\_\_

39% = \_\_\_\_\_

\_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_

## Practise and Apply

4. What is 10% of each quantity?  
Show your thinking.

a) 75 km \_\_\_\_\_

b) \$113 \_\_\_\_\_

5. What is 40% of each quantity?  
Show your thinking.

a) 480 students \_\_\_\_\_

b) 1500 km \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

6. Compare the numbers in this set.  
Write them in descending order.  
Show your thinking.

97%,  $\frac{99}{100}$ , 0.98

\_\_\_\_\_ > \_\_\_\_\_ > \_\_\_\_\_

7. Compare the numbers in this set.  
Write the numbers in ascending order. Show your thinking.

$\frac{1}{10}$ , 1%, 0.001

\_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_

8. Show how to find each amount.

a) 50% of 70

b) 10% of 60

c) 20% of 105

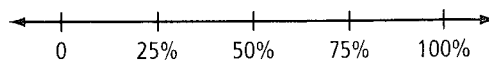
9. Calculate each amount.

a) 40% of 25 m

b) 75% of 44 apples

c) 15% of \$40

10. Use the number line to help answer the questions below.

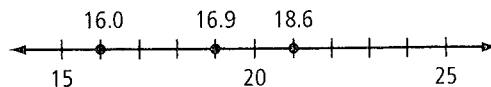


- a) What is a fraction between 20% and 40%? How do you know?

- b) What is a decimal number between 80% and 100%?

- c) What is a decimal number between 0% and 20% that is closer to 20%?

11. On this number line, which number is correctly placed? How do you know?



12. A store is having a 40% off sale on a \$212 jacket.

- a) Show how to estimate 40%.

- b) Calculate the discount.

- c) What is the sale price of the jacket?

# 4.2 Fractions, Decimals, and Percents

MathLinks 7, pp. 132–139

## Key Ideas Review

Choose from the following terms to complete each statement. Then complete each example.

repeating      terminating      numerator      denominator      divide

1. 0.333... is a \_\_\_\_\_ decimal. It can also be written as \_\_\_\_\_.

2. 0.3, 0.35, and 0.359 are \_\_\_\_\_ decimals. Here they are as fractions:

$$0.3 = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}$$

$$0.35 = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}$$

$$0.359 = \frac{\boxed{\phantom{000}}}{\boxed{\phantom{000}}}$$

3. To change  $\frac{2}{5}$  to a decimal number, \_\_\_\_\_ the numerator by the \_\_\_\_\_,  $\frac{2}{5} = 0.\underline{\hspace{1cm}}$ .

## Practise and Apply

4. Use a calculator to change each fraction to a decimal number. Round to the place value indicated.

a)  $\frac{27}{50}$  (tenths) \_\_\_\_\_

b)  $\frac{13}{82}$  (tenths) \_\_\_\_\_

c)  $\frac{45}{112}$  (hundredths) \_\_\_\_\_

d)  $\frac{204}{331}$  (hundredths) \_\_\_\_\_

e)  $\frac{67}{85}$  (thousandths) \_\_\_\_\_

f)  $\frac{452}{511}$  (thousandths) \_\_\_\_\_

5. Write each repeating decimal using bar notation.

a) 0.22222... \_\_\_\_\_

b) 0.010101... \_\_\_\_\_

c) 0.213213... \_\_\_\_\_

d) 2.434343... \_\_\_\_\_

6. Change each fraction to a repeating decimal. Then use bar notation to show the repeating part.

a)  $\frac{1}{3} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

b)  $\frac{5}{9} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

c)  $\frac{9}{11} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

d)  $\frac{7}{33} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

7. Estimate each of the following as a percent. Show your thinking.

a) 34 out of 90

b) 165 out of 400

8. Quarterbacks are compared according to their completion percentages.



$$\text{Completion percentage} = \frac{\text{Completed passes}}{\text{Attempts}}$$

Quarterback	Completed Passes	Attempts	Completion Percentage
A	231	329	
B	143	195	
C	298	401	

a) Fill in the last column by calculating the completion percentage for each quarterback. Round each answer to the nearest thousandth.

b) List the completion percentages in descending order.

\_\_\_\_\_ > \_\_\_\_\_ > \_\_\_\_\_

9. For each of the following statements, rewrite each percent or decimal as a fraction.

a) 23% of Canadians speak

French.  $\frac{\square}{\square}$

b) North America is 0.17 of

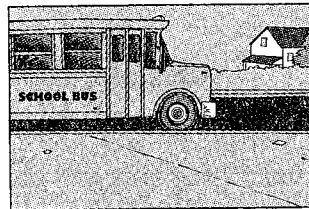
the world's land mass.  $\frac{\square}{\square}$



c) Kareem has a 0.559 field goal

average.  $\frac{\square}{\square}$

10. At Rocky Mountain School, 212 students take the bus and 300 students use a different mode of transportation to get to school. Estimate the percent of students who take the bus to school. Show your thinking.



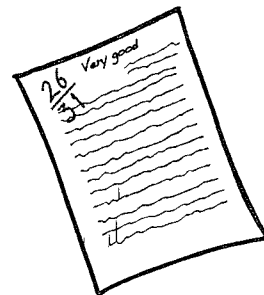
## 4.3

## Applications of Percents

MathLinks 7, pp. 140–145

## Key Ideas Review

- Alyssa changed  $\frac{1}{3}$  to a decimal. When she got 0.333... , she rounded this to the closest tenth and got 0.3.
  - Did Alyssa change the value of the decimal number? Explain.
  - Which is a more accurate way to show  $\frac{1}{3}$ ? Should you use 0.333... or 0.3? Explain your thinking.
- Min had a mark of 26 out of 31 on a science test. That same day, his sister got a mark of 45 out of 52 on a math test. Explain how to find out who got the better mark.



## Practise and Apply

- Estimate which amount is greater. Then, calculate each amount.

- 50% of 96, or 10% of 552

Estimate: \_\_\_\_\_

Calculation: \_\_\_\_\_

- 10% of 56, or 1% of 451

Estimate: \_\_\_\_\_

Calculation: \_\_\_\_\_

- 60% of 72, or 15% of 364

Estimate: \_\_\_\_\_

Calculation: \_\_\_\_\_

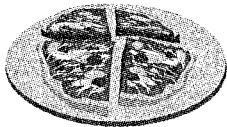
- Complete the table.

	1%	10%	100%
a)			450
b)		61	
c)	3.2		
d)		6.5	
e)			38

Name: \_\_\_\_\_

Date: \_\_\_\_\_

5. On Tuesday, a pizza restaurant sold 15 vegetarian pizzas and 64 non-vegetarian pizzas. On Wednesday, 22 vegetarian and 73 non-vegetarian pizzas were sold. On which day was a higher percent of vegetarian pizzas sold? Show your thinking.



7. Mikayla gets a weekly allowance of \$30. She puts 25% into a savings account each week. How much money will be in the account after four weeks? Use mental math techniques to find the answer. Show your work.

6. Use the information in this table to answer the following questions.

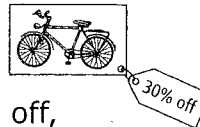
Cereal Name	Mass of Sugar	Mass of Cereal	Percent of Sugar
Maize Flakes	2 g	21 g	
Glacial Flakes	13 g	34 g	
Fruit Flakes	12 g	31 g	
Product 21	3 g	23 g	

- a) What is the percent of sugar in each cereal? Round each percent to the nearest tenth. Show your thinking below.

- b) List the cereals in descending order of their sugar content percent.

\_\_\_\_\_ > \_\_\_\_\_ > \_\_\_\_\_ > \_\_\_\_\_

8. A mountain bike's regular price is \$885.



- a) If a sale offers 30% off, what will the discount be?
- b) What is the sale price of the bike before tax? Show your work.

9. Carlos decides that he would like to play tennis. He jots down this shopping list with prices from a catalogue.

*tennis racquet*                      \$112.95  
*tennis shoes*                         \$78.50  
*2 cans of tennis balls*             \$3.95 each

- a) Estimate the total cost before taxes.

- b) Calculate the total cost before taxes if Carlos gets a 10% discount.