Chapter 7: Fractions and Decimals

Fractions as Parts of a Whole

A fraction is a part of a whole.



numerator

The numerator shows the number of parts the fraction represents.

The denominator shows the number of equal parts in the whole.

1. Which pictures show $\frac{2}{3}$? Circle them.



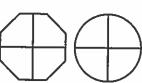






2. Which pictures show fourths? Circle them.







3. Write the fraction that is shaded and the fraction that is not shaded.







b)

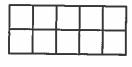




- 4. Sketch a model of each fraction as part of a rectangle.

 - a) $\frac{1}{3}$ of a cake has been eaten. b) $\frac{3}{5}$ of a blanket is yellow.
- 5. a) Colour $\frac{1}{10}$ of the rectangle green,

•	10		
3	ببحالميد	and $\frac{4}{10}$	la la ca
40	yellow,	and $\frac{1}{4}$	plue.
IU		10	



b) Which colour covers the largest part of the shape?

	Data	
Name:	Date:	

Scaffolding for Getting Started

STUDENT BOOK PAGES 206-207

What fractions can you show with square tiles?

A.	How	does		257	show	$\frac{3}{4}$?
----	-----	------	--	-----	------	-----------------

		~	The top	number	shows	the	number	of	Q	tiles.
ı	نــــا		The top	mai mooi	0110110		1101111001	٠.		

1.0	The bottom number shows

В.	How	does		2	show	$\frac{1}{4}$?
----	-----	------	--	---	------	-----------------

	◄	The t	op.	number	shows	the	number	of	 tiles.
_									

- C. What does the 4 in the fraction $\frac{3}{4}$ tell about the tile design in Parts A and B?
- **D.** What does the 3 in the fraction $\frac{3}{4}$ tell about the tile design in Parts A and B?



]←—	The top	number	shows	the	number	of	 tiles

F. Make 3 more tile designs that show fractions. Write the fractions.



A		
L Name:	Date:	

7.1 Fractions of a Whole Page 1

Student Book pages 208-211

GOAL

Name and represent fractions of a whole.

You will need • pencil crayons

Problem

Joshua's rock-climbing team is making T-shirts.

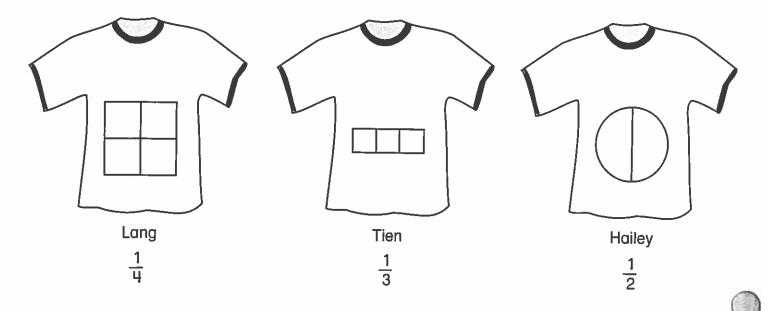
Each T-shirt shows a different fraction.

Joshua's T-shirt shows $\frac{1}{6}$.



Joshua

Colour the T-shirts to show each fraction.



Name: Date:	
-------------	--

7.1 Fractions of a Whole Page 2

How are the fraction pictures on the T-shirts the same?

Hint: Look at the numerators.

How are the fraction pictures on the T-shirts different?

Hint: Look at the denominators.

numerator

The number above the bar in a fraction. It tells the number of equal parts the fraction represents.

For example, this fraction tells about 1 of the equal parts.

1 -	
4	

denominator

The number below the bar in a fraction. It tells the number of equal parts in one whole.

For example, this whole is divided into 4 equal parts.

_		
. 19		



C&P Name:	Date:
7.1 Fractions of a Whole Page 1 Student Book pages 208–211	
GOAL	You will need
Name and represent fractions of a whole.	• pencil crayons
Checking	
1. a) How many equal parts are in the rectangle?	_
Colour 3 parts of the rectangle.	
What fraction of the rectangle is coloured?	
b) How many parts of the rectangle are white? What fraction of the rectangle is white?	
Practising	
2. Hannah coloured some fraction pictures.	
a) How many equal parts does the picture have? How many parts are coloured? How many parts are not coloured? Write 2 fractions the picture shows	
b) Write a fraction that each picture shows.	

C&P Name:	Date:
out Maile.	Dule.

7.1 Fractions of a Whole Page 2





a) Colour the rectangle to show a fraction.

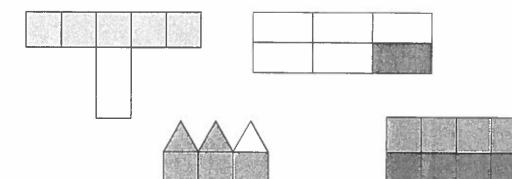
Write the fraction your picture shows.

b) How many parts of the rectangle are white?

Write another fraction your picture shows.

7. Circle the picture that shows $\frac{5}{6}$.

Hint: The picture must have 6 equal parts.



How do you know?

Name: .	Date:
	olding for Lesson 1, Questions 6 & 7 BOOK PAGES 210-211
6. a)	Colour a picture to show $\frac{7}{10}$.
	What does the 10 in the fraction tell you?
10.	What does the 7 in the fraction tell you?
	If you colour in 7 of the 10 parts in your picture, how many parts are not coloured?
	What is the fraction for the parts that are not coloured?
7. W	hich pictures do not show $\frac{5}{6}$?
Ex	plain how you know. The first one is done for you.
040 A10	does not show $\frac{5}{6}$ does show $\frac{5}{6}$
Ex	plain: There are 6 parts but the parts are different sizes.
	does not show $\frac{5}{6}$ does show $\frac{5}{6}$
E	xplain:
	does not show $\frac{5}{6}$ does show $\frac{5}{6}$
F	xplain:
	does not show $\frac{5}{6}$ does show $\frac{5}{6}$
E	xplain:
	Blackline Masters

At-Home Help

the fraction represents.

numerator is 1.

The **denominator** is the number below the bar in a fraction. It tells the number of

equal parts in one whole.

The **numerator** is the number above the bar in a fraction. It tells the number of equal parts

This picture has 4 equal parts, so the denominator is 4.
Only 1 part is shaded, so the



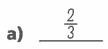
Fractions of a Whole



GOAL

Name and represent fractions of a whole.

1. Write a fraction to describe the shaded part of each picture. The first one is done for you.





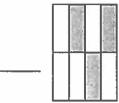




2. Write a fraction for each picture.







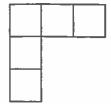
b)



d)



3. Colour this picture to show $\frac{2}{5}$.



L Name: Date:			
7.2 Fractions of a Group Page 1 Student Book pages 212–214			
Name, represent, and compare fractions of a group.			
Problem			
Cole's family saw these animals on a trip.			
bear fish bird deer			
How can you use fractions to describe the animals in this group?			
Step 1: How many animals are in the group?			
Use this number as the denominator for your fractions.			
Step 2: How many animals have feathers?			
Write a fraction to describe the animals with feathers.			
Step 3: How many animals live in the water?			
Write a fraction to describe the animals that live in the water. 4			

Step 4: How many animals have 4 legs?

Write a fraction to describe the animals that have 4 legs.

Name:	Date:
-------	-------

7.2 Fractions of a Group Page 2

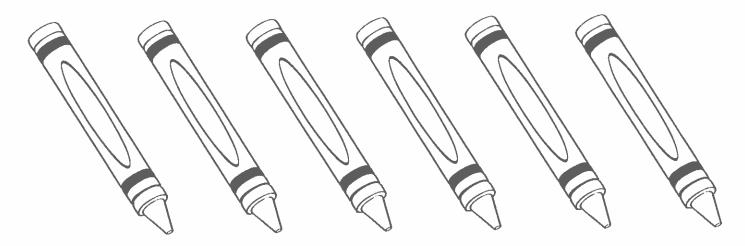
Reflecting	
Circle the greater fraction:	$\frac{1}{4}$ $\frac{2}{4}$
Explain how you know.	
How are parts of a group diffe	rent from parts of a whole?

C&P Name:	Date:
7.2 Fractions of a Group Page 1 Student Book pages 212–214	
GOAL	You will need
Name, represent, compare, and order fractions of a group.	• pencil crayons
Checking	
1. a) Look at this group of animals.	
How many animals are in the group?	
Write a fraction to describe the number of se	al lemming walrus ermine
animals with flippers.	
Show this fraction as a picture.	
Write a fraction to describe the number of animals	
with a mouth.	
Show this fraction as a picture.	-
Write a fraction to describe the number of animals	
with tusks.	
Show this fraction as a picture.	
b) Write the fractions in order from least to greatest.	

7.2 Fractions of a Group Page 2

Practicing

4. Here are 6 crayons.



a) Colour $\frac{2}{6}$ of the crayons blue.

How many crayons are blue? _____

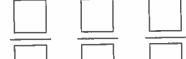
Colour $\frac{3}{6}$ of the crayons green.

How many crayons are green? _____

Colour $\frac{1}{6}$ of the crayons red.

How many crayons are red? _____

b) Write the fractions in order from least to greatest.



Fractions of a Set (1)



1. What fraction of the dogs have

spots?

black ears?

spots and black ears?

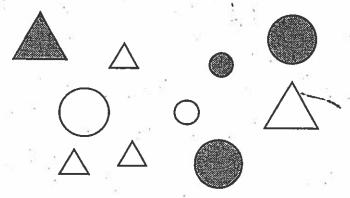


2. What fraction of the shapes are

striped?

squares? _____

striped squares?



3. What fraction of the shapes are

shaded? _____

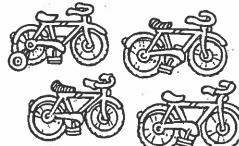
circles?

large? _____

shaded circles?

large circles? _____





4. What fraction of the bikes

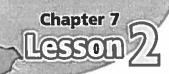
have 2 wheels?

have 3 wheels?

have 4 wheels?

have a white seat?

have a striped seat? _____



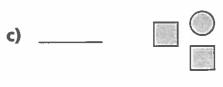
Fractions of a Group

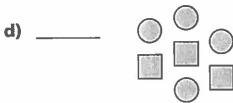
GOAL

Name, represent, compare, and order fractions of a group.

1. Write a fraction that tells about the circles in each group.





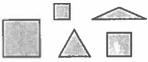


2. a) Draw a picture of a group of shapes. Make $\frac{1}{8}$ triangles, $\frac{3}{8}$ squares, and $\frac{4}{8}$ circles.

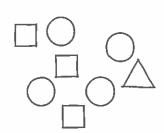




You can use fractions to describe a number of things in a group. For example:



3 out of 5 things in this group are squares: $\frac{3}{5}$ 2 out of 5 things in this group are triangles: $\frac{2}{5}$



C	&P) N
_	_	_

lame:

Date:

You will need

crayons =

pencil

7.3 Sorting Fractions

Student Book page 215

GOAL

Describe how fractions are alike and different.

One of the fractions does not belong with the others.

Ken says, "I think $\frac{3}{4}$ does not belong."

Julia says, "I think $\frac{4}{4}$ does not belong."

Aneela says, "I think $\frac{3}{3}$ does not belong."



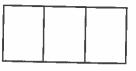


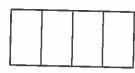
How can you show that Ken, Julia, and Aneela are

Step 1: Colour the shapes to show each fraction.

3	
3	









Step 2: Explain why $\frac{3}{4}$ does not belong.

Step 3: Explain why $\frac{4}{4}$ does not belong.

Step 4: Explain why $\frac{3}{3}$ does not belong.

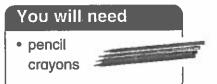
Date:

7.3 Sorting Fractions

Student Book page 215

GOAL

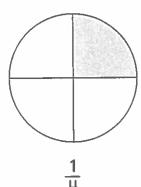
Describe how fractions are alike and different.

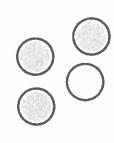


Problem



Which of these fractions does not belong with the others?



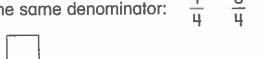






Step 1: Circle the fractions with the same denominator:

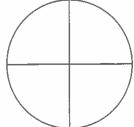
Which fraction does not belong?



Step 2: Show the fractions using fraction shapes.









Which fraction does not belong?



How do you know?



Sorting Fractions



GOAL

Describe how fractions are alike and different.

1. a) Circle the fraction that does not belong in the group.

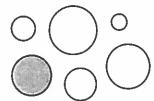
- b) Explain why you circled that fraction.
- 2. Circle the fraction that does not belong in each group.
 - a) $\frac{4}{5}$ $\frac{2}{5}$

- **b)** $\frac{2}{3}$ $\frac{2}{7}$ $\frac{3}{4}$ $\frac{2}{5}$

3.







How are these fractions alike? _____

How are they different? _____

sing Fractions of a Set (1)

Follow the directions to colour the tiles.

1. ½ green, ½ blue, ¾ red

- 10		
	i I	l 1
ļ. ļ]]	200
		1000

1 1	1 2	1
1 (i 1
1		

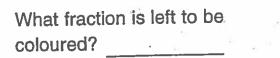
1 areen	½ red

X:	
	5

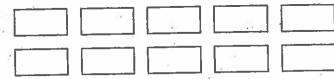
5. ½ blue, ½ green, ¼ red



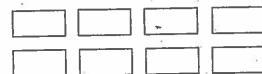
			1.00
1 1	1 10	1	1 1
		29	



2. ½ blue, 5 green



4. $\frac{5}{8}$ red, $\frac{1}{8}$ blue, $\frac{1}{4}$ green



6. $\frac{1}{3}$ red, $\frac{1}{6}$ yellow, $\frac{1}{6}$ blue



What fraction is left to be coloured? _____

7. Is $\frac{4}{8}$ of a set of tiles equal to $\frac{1}{2}$ of the same set of tiles? Colour a set of tiles. Explain your thinking.

L Name:	Date:
7.4 Comparing and Ordering Fractions Page 1 Student Book pages 216-218	!

4000	4
GOA	ı
JUA	-

Compare and order fractions with the same denominator.

You will need · pencil crayons

Problem

Tien, Olivia, and Annie are racing on a track.

- Tien is $\frac{1}{4}$ of the way.
- Olivia is $\frac{2}{4}$ of the way.
- Annie is $\frac{3}{4}$ of the way.



Who is winning the race?

Shade the fraction strips to show how far each girl has run.

Tien		
Olivia		
Annie		

Who has run the greatest distance?

Who has run $\frac{1}{2}$ the distance?

Who has run the least distance?

Who is winning the race? _____

Name:	Date:
7.4 Comparing and Ordering Fractions	S Page 2

Reflecting	
How does colouring fraction strips help you compare fractions?	

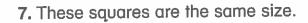
C&P Name:	Date:
7.4 Comparing and Ordering Fractions Page 1 Student Book pages 216–218	
GOAL	
Compare and order fractions with the same numerator and different denominators.	
Checking	
1. Some students are running along a track. Show how far each student has run by colouring the from a) Ken is $\frac{1}{8}$ of the way. Cory is $\frac{1}{5}$ of the way. How many parts of Ken's strip are coloured?	
How many parts of Cory's strip are coloured? Who is farther along the track? How do you know?	
b) Aneela is $\frac{1}{3}$ of the way.	

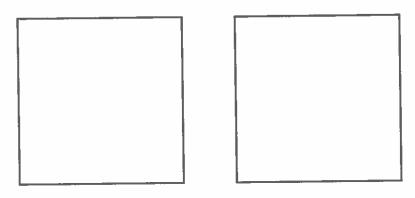
	1	

Who is farther along the track? _ How do you know?

7.4 Comparing and Ordering Fractions Page 2

Practising



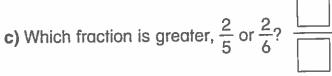


a) Colour $\frac{2}{5}$ of the first square.

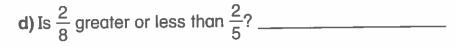
Hint: Divide the square into 5 rectangles.

b) Colour $\frac{2}{6}$ of the second square.

Hint: Divide the square into 6 rectangles.



How do you know?



How do you know?

GOAL

Compare and order fractions with the same numerator and different denominators.

1. a) Shade the fraction strips to show $\frac{1}{2}$ and $\frac{1}{5}$.

 $\frac{1}{2}$ $\frac{1}{5}$

- b) Which fraction is greater?
- 2. These fractions all represent parts of the same circle. Which fraction in each pair is greater?
 - a) $\frac{1}{10}$ $\frac{1}{8}$

b) $\frac{3}{6}$ $\frac{3}{4}$









At-Home Help

This fraction strip shows $\frac{1}{2}$.

This fraction strip shows $\frac{1}{3}$.

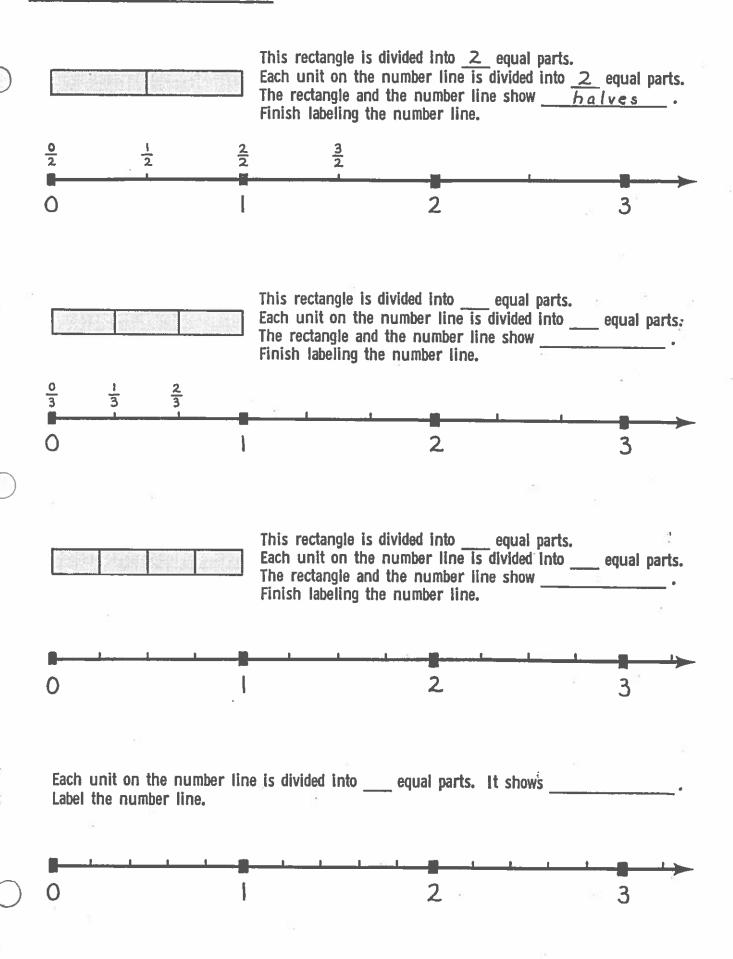
This fraction strip shows $\frac{1}{4}$.

d) $\frac{7}{8}$ $\frac{7}{10}$

c) $\frac{5}{8}$ $\frac{5}{6}$

3. These fractions are parts of the same whole thing. Put them in order from least to greatest.

a) $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{3}$ c) $\frac{2}{5}$ $\frac{1}{5}$ $\frac{4}{5}$



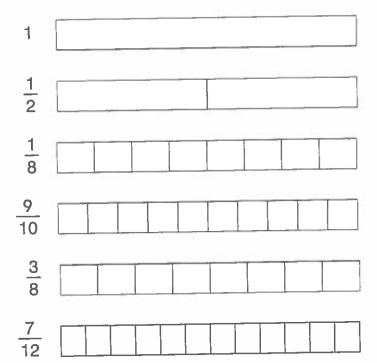
GOAL Order fraction	ons on a number line.	You will need • pencil
Checking		crayons
Show each	rolled different distances toward the hole. fraction on its fraction strip. benchmark.	
$\frac{1}{2}$		
Ball 1: $\frac{1}{5}$		
Ball 2: $\frac{7}{8}$		
Ball 3: $\frac{6}{10}$		
Bali 4: 4		
AAUICU Dali	rolled more than halfway to the hole? rolled the least distance? rolled the greatest distance?	

C&P Name: Date:	C&P Name:	0	Date: _	
-----------------	-----------	---	---------	--

7.5 Using Benchmarks to Order Fractions Page 2

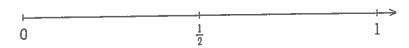
Practising

2. Show each fraction on its fraction strip.



a) Circle the fractions that are closer to 1 than to $\frac{1}{2}$.

b) Estimate to mark each fraction on the number line.



c) Order the fractions from least to greatest.

Name:	Date:	

7.5 Using Benchmarks to Order Fractions Page 1

Student Book pages 220-222

GOAL

Use **benchmarks** to compare and order fractions with different denominators.

You will need pencil

pencil crayons

Problem

Cole and his friends played miniature golf.

This table shows how far each player hit the golf ball on the first swing.

benchmark

A familiar number or measurement used to compare other numbers or measurements

Cole	Joshua	Kate
$\frac{2}{3}$ of the way to the hole	$\frac{3}{4}$ of the way to the hole	$\frac{3}{8}$ of the way to the hole
)

Which golf balls went more than $\frac{1}{2}$ the distance to the hole?

Use $\frac{1}{2}$ as a benchmark to help you decide.

Shade the fraction strips to show how far each ball went.

1 2					1 2		
	1/3			1 3		1 3	
1 1		1	_	14	-	1 4	
8	<u>1</u> 8	1 8	1 8	1 8	1 8	1 8	1 8

Which players hit their golf balls more than $\frac{1}{2}$ the distance to the hole?

Whose golf ball went the greatest distance? _____

Name:	Date:
7.5 Using Benchmo	ks to Order Fractions Page 2

Reflecting How did using $\frac{1}{2}$ as a benchmark help you compare the fractions?	

Name: Date:	
-------------	--



Using Benchmarks to Order Fractions



GOAL

Order fractions on a number line.

1. a) Shade the fraction strips to represent each fraction.

1/2

3 5

1/4

5 6

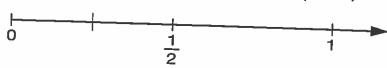
2 5

5 8

b) Which fractions are closer to 1 than to 0?

c) Which fractions are closer to $\frac{1}{2}$ than to 1?

d) Estimate to mark each fraction from part a) on this number line.



e) Estimate to mark these fractions on the number line above.

 $\frac{1}{3}$ $\frac{1}{5}$ $\frac{9}{10}$

Using Fraction Strips

Some students folded paper strips to show fractions. Answer the questions.

1. 1/2

How does $\frac{1}{2}$ compare with $\frac{2}{4}$?

1/4

How does $\frac{3}{8}$ compare with $\frac{2}{4}$?

2 6

How many sixths make $\frac{1}{3}$?

1/3

How does $\frac{4}{5}$ compare with $\frac{2}{3}$?

1/5

How many fifths make one whole?

1 |

How many tenths make $\frac{1}{5}$?

1 10

How do $\frac{5}{10}$ compare with $\frac{1}{2}$?

1 2

4. Alyss said, " $\frac{1}{2}$ is equal to $\frac{2}{4}$." Is she right? Use words and a picture to show your thinking.

C&P Name:		Date:	
-----------	--	-------	--

7.6 Solving Problems by Drawing Diagrams Page 1

Student Book pages 224-226

GOAL

Draw a diagram to solve a problem.

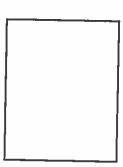


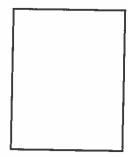
Checking

1. There are 5 children in a group.









 $\frac{3}{5}$ of the group are girls.

G for girls has been written in $\frac{3}{5}$ of the boxes.

 $\frac{4}{5}$ of the group have dark hair. Write DH for dark hair in $\frac{4}{5}$ of the boxes.

 $\frac{2}{5}$ of the group are wearing jackets. Write J for jackets in $\frac{2}{5}$ of the boxes.

How many children in the group could be dark-haired girls wearing jackets?

Hint: Count the pictures with a G, a DH, and a J.

C&P Name: D	ate:			
7.6 Solving Problems by Drawing Diagrams Page 2				
Practising				
3. This fraction shape shows Jade's total allowance.				
Jade spent $\frac{3}{10}$ of her allowance to go to a movie.				
Colour this amount red on the fraction shape.				
How many parts are red?				
Jade spent $\frac{4}{10}$ of her allowance to buy a T-shirt.				
Colour this amount blue on the fraction shape.				
How many parts are blue?				
What fraction of her allowance does Jade have left?	Ē			
4. This fraction strip shows how long Adam spent paddling	•			
Adam				
Kendra paddled for twice as long as Adam. Draw a fraction strip to show how long Kendra spent po	addling.			

Kendra

Kendra and Adam spent a total of 3 hours paddling.

How many hours did Adam spend paddling?

How many hours did Kendra spend paddling? _____

	20 No. 10 No. 10	Date: _		
7.6 Solving Problems by Drawing Student Book pages 224–226	Diagrams	Page 1		X
GOAL			You will	need
Draw a diagram to solve a problem.			• pencil	The second section and
Problem			crayons	
A pizza has toppings on every slice.				
• $\frac{2}{4}$ of the slices have sausage.				
• $\frac{1}{4}$ of the slices have peppers.				
• $\frac{3}{4}$ of the slices have mushrooms.				
How many slices of pizza could have	e all 3 topping	s?		
How many slices have sausage?			T	
How many slices have peppers?		S	S	
How many slices have mushrooms?	_ /	•		
Model the pizza with this fraction circle.				\
Chou the terminal and a selection				
Show the toppings on each slice.			 	
Use S for sausage.				
Use P for peppers.				/
Use M for mushrooms.				
Sausage is done for you.				
How many slices could have all 3 toppings?				

Name:	Date:
7.6 Solving Problems by Drawi	ng Diagrams Page 2

Reflecting	
How did drawing a diagram help you solve the problem?	

Chapter	7 /
Chapter	0/2

Name: _____ Date: ____

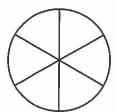
Solving Problems by Drawing Diagrams

GOAL

Draw a diagram to solve a problem.

Draw a diagram to solve each problem.

1. Aneela ate $\frac{1}{6}$ of the pizza. Joshua ate $\frac{3}{6}$ of the pizza. How much of the pizza is left?



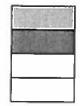
2. Tien drank $\frac{1}{8}$ of the water in the bottle. Lang drank $\frac{5}{8}$, and Jade drank $\frac{2}{8}$. How much of the water did they drink?



3. Out of a group of 5 children, $\frac{4}{5}$ are boys. $\frac{3}{5}$ of the group have brown eyes, $\frac{1}{5}$ have green eyes, and $\frac{1}{5}$ have blue eyes. Could the child with blue eyes be a girl?



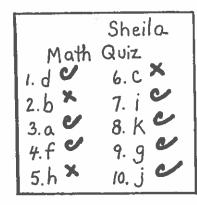
A diagram can help you solve a problem. For example, Kate used $\frac{1}{4}$ of a can of paint. Cole used another $\frac{1}{4}$ of the can of paint. How much of the paint is left?



 $\frac{1}{4}$ is for Kate and $\frac{1}{4}$ is for Cole. $\frac{2}{4}$ of the paint is left.



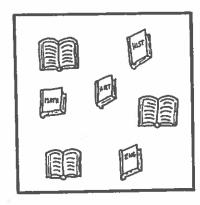
Fractions in Word Problems



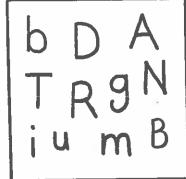
There are 10 answers on the paper.

7 of the 10 answers are correct.

What fraction of the answers are correct?



There are ____ books in the group.
___ of the ___ books are open.
What fraction of the books are open? ____



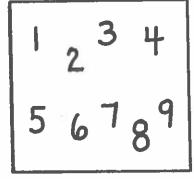
There are ____ letters in the group.

___ of the ____ letters are vowels.

What fraction of the letters are vowels? ____

of the ____ letters are capitals.

What fraction of the letters are capitals? ____



There are _____ numbers in the group.

____ of the ____ numbers are odd.

What fraction of the numbers are odd? _____

of the ____ numbers are even.

What fraction of the numbers are even? _____