VOCABULARY
place value drawings
dot array

Model Hundreds

on a dot array. You can represent numbers by making place value drawings

What number does this drawing show? _____
 Explain your thinking.

				_	_		_				
9	0	•	0	•	0	0	0	0	0	0	0
9	9		0	8	0	0	•	0	•	0	
8	ø		4	0	9	0	0	8	0	•	
•	6		9	9	6	8	•	6		6	
6	•	٥	•	ø	0	6	8	9	9		9
•	Φ		0	0	0	0	6	0	0	•	٥
0	0	9	0	0	•	0	0	ø	0	0	ø
•	0	₽	9	. @	0	0	0	Ø	0	0	0
0	0	8	0	0	0	0	0	0	0	0	ø
0	•	0	•	0	0	6	ø	0	0	0	0
•	9	6	0	0	9	ø	6	0	6	0	9
0		6	0	Ø	ø	0	•	0	a	•	۰
8	9		9			•	٠			•	
6	0		9	0	9	6	9	9	9	ø	1
										-	0
9	0	6	0	9	9	0	•	9	0	0	6
0	9	0	0	0	9	0	•	0	0	9	0
9	•	ø	9	0	9	0	•	•	9	0	0
•	9	0	0	•	0		0	0	0	9	0
•	0		•	•	•	•	•	0	•	0	0
0	69		•	0	ø	9		•	•	.0	0
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•	0	0	9	•	•	0	0	•	0	9	6
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	•		0		0		0	0	•	6	
	-								-		
æ				60				•			. 1
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9	0	0	•	•		0	9	6	0		0
0	0	8	6	0	6	0	9	6	9	9	0
9 6 9	9 9	8	6	© ©	6	6 6	8	6	9	9	0 0 0
9 6 6	0 0 0	0 0 0	6	0	9 9	0	9	6	9	9	0
9 6 9	9 9	8	6	© ©	6	6 6	8	6	9	9	0 0 0
9 6 6	0 0 0	0 0 0	6	0	9 9	6 6	9 9 9	6 0	8 0 0	9 9	9 8
9 6 6 6	9 9 9 9	0 0 0	6 6 6	0 0	8 9 9	6 6	0 0	6 6 6 6	9 0 0 0	0 0 0	6 8 8 8
9 9 9 9	0 0 0 0 0	0 0 0 0	6 6 6	0 0 0	8 9 9	0 0 0	9 9 9	6 0 0 0	0 0 0	0 0 0 0	9 9 9 9 9
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9 9 9 9 9 9 9	0 0 0 0 0 0 0 0 0	6 0 6 6 6 6 6 6	6 6 6 6 6	0 0 0 0 0 0		0 0 0 0 0 0 0 0	9 9 9 9 9 9 9	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0
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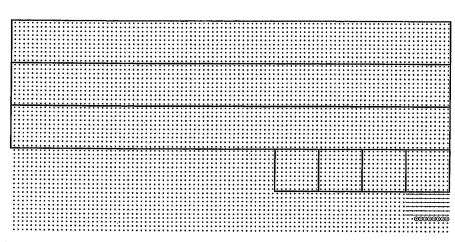
Model Thousands

of each. Discuss this place value drawing. Write the number

- 2. ones: _____
- 3. quick tens: _____
- 4. hundred boxes: _____
- 5. thousand bars: _____
- 6. How many hundred boxes could we draw inside each thousand bar? Explain.

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7. What number does this drawing show?



place value VOCABULARY

Model Greater Numbers

using a dot array. Place value can also be shown without

8. What number does this drawing Explain your thinking. represent?

What would the drawing represent if it had:

- Ø 3 more hundred boxes?
- 10. 0 hundred boxes?
- 2 fewer quick tens?
- ņ 2 more quick tens?
- ū 0 quick tens?
- 14. 5 fewer ones?
- 15, 0 ones?
- 9 4 more thousand bars?
- 17. On your MathBoard, make a place value drawing for a different number that has the digits 1, 2, 7, and 9.
- 00 Explain how your drawing is similar to and different from the drawing for 1,279.

00000

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Practice Modeling Thousands

quick tens, hundred boxes, and thousand bars. Make a place value drawing for each number, using ones,

29. 2,596

30. 3,045

6 UNIT 1 LESSON 1



Practice with Place Value Drawings

quick tens, and hundred boxes. Make a place value drawing for each number, using ones,

9.

20, 3

21. 603

22. 300

23. 63

24. 32

25. 325

26. 285

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7

109

28, 573

Whole Number Secret Code Cards

© Но	ughton Mifflin Harcour				,				
	OO (8)	7,000	O	الم الم	4,000			000,1	
	0	0	0	0	0				
	0	0		0					
0	0								
O [®]	CO [©]	700	O		400	5	2 00	00	
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Whole Number Secret Code Cards

							ਰ :	0	
nine	eight	seven	six	five	four	three	two	one	
ninety	eighty	seventy	sixty	fifty	forty	thirty	twenty	ten (teen)	
(nine tens)	(eight tens)	(seven tens)	(six tens)	(five tens)	(four tens)	(three tens)	(two tens)	(one ten)	
nine	eight	seven	six	five	four	three	two	one	
hundred	hundred	hundred	hundred	hundred	hundred	hundred	hundred	hundred	
nine	eight	seven	six	five	four	three	two	one	
thousand	thousand	thousand	thousand	thousand	thousand	thousand	thousand	thousand	

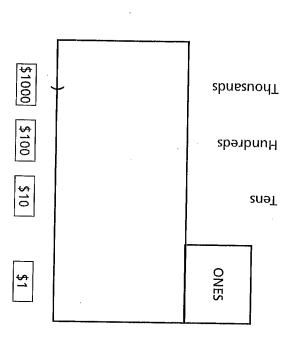


The Place Value Chart

Discuss the patterns you see in the Place Value Poster below.

Thousands	Hundreds	Tens	
1,000.	100.	10.	
1,000 1	$\frac{100}{1}$	$\frac{1}{0}$	
\$1,000.00	\$100.00		

Use your Whole Number Secret Code Cards to make numbers on the frame.



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Write Numbers Using Expanded Form

Standard form: 8,562

Word form: eight thousand, five hundred sixty-two

Expanded form: 8,000 + 500 + 60 + 2

Read and write each number in expanded form.

Read and write each number in standard form.

Read and write each number in word form.

14. 1,000 + 50

$$12.9,000 + 800 + 4$$

Read and write each number in standard form.

17. six thousand, eight

Write the value of the underlined digit.

Read and Write Expanded Form

Read and write each number in expanded form.

- 1. 32,568 _____
- 2. 820,149 ____
- 3. 405,763 ____
- 4. 703,070 _
- Read and write each number in standard form.
- 5. 20,000 + 4,000 + 800 + 10 + 7
- 700,000 + 50,000 + 3,000 + 200 + 90 +σ
- 7. 300,000 + 3,000 + 10 + 9
- 8.800,000 + 40,000 + 400 + 80

Read and write each number in word form.

9. 90,000 + 7,000 + 300 + 20 + 4 _____

10. 600,000 + 30,000 + 4,000 + 700 + 30

- 11. 200,000 + 3,000 + 80 + 6 _____
- 12. 500,000 + 20,000 + 400 + 1 ____

Read and write each number in standard form.

13. seventy-eight thousand, one hundred five

- 14. one million _____
- 15. five hundred sixty-three thousand, fifty-two



Discuss and Summarize

Patterns to Millions

		1
	00,000,000	Hundred Millions
millions	100,000,000 10,000,000 1,000,000 100,000	Ten Millions
	1,000,000	Millions
	100,000	Hundred Thousands
thousands	10,000	Ten Thousands
	1,000	Hundred Ten Millions Thousands Thousands Thousands Hundreds Tens Ones
lo]	100	Hundreds
[ones]	10	Tens
	_	Ones

name. We say the group name place value name. When we read a number, we do not say the place value The Patterns to Millions chart shows that each digit in the number has a

We say the word million after the digits in the millions group.

We say the word thousand after the digits in the thousands group.

We do not say the word ones after the digits in the ones group.

hundreds, tens, and ones places and then add the special name for that group. To read greater numbers, say each group of digits as if they were in the

Read Numbers

below to read them. as shown below. Put them in the spaces on the Reading Millions Frame Use your Whole Number Secret Code cards to make the groups of digits

© Houghton Milflin Harcourt Publishing Company 28,374

123,456

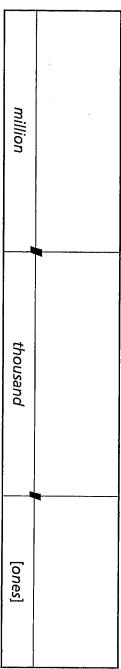
458,726

654,321

92,148

789,321

Reading Millions Frame





Discuss the Steps of the Problem

step to solve a problem. The steps can be shown in one or more equations Sometimes you will need to work through more than one

Solve.

- fourth-graders bought lunch in the cafeteria on Friday? of the students bought lunch in the cafeteria. How many 23 fourth-graders brought lunch from home and the rest classes with 17 students in each class. On Friday, At Parkes Elementary School, there are 6 fourth-grade
- N Solve and how they are different. methods. Then discuss how the two methods are alike the problem again by finishing Tommy's and Lucy's

Tommy's Method	Lucy's Method
Write an equation for each step.	Write an equation for the whole problem.
Find the total number of students who are in fourth grade.	Let $n =$ the number of students who bought lunch.
6 × 17 =	Students in Students who
Subtract the number of students who brought lunch from home.	grade class. from home.
102 – 23 =	6 × = n

U Use an equation to solve. Discuss the steps you used

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Susan need to buy so she has one bun for each hot dog? packages of 8. How many packages of hot-dog buns does package contains 12 hot dogs. Hot-dog buns are sold in Susan buys 16 packages of hot dogs for a barbecue. Each



Share Solutions

Use an equation to solve

Admission to the theme park is \$32 for each adult. theme park? the theme park. How much is a child's ticket to the A group of 5 adults and 1 child pays \$182 to enter

<u>U</u> Kenny collects CDs and DVDs. He has a total of 208 How many more CDs does Kenny have than DVDs? He also has 8 shelves with 24 DVDs on each shelf. CDs

Q) Carla plants 14 tomato plants. Her gardening book says that each plant should grow 12 tomatoes. She plans to divide the tomatoes equally among herself and 7 friends How many tomatoes would each person get?

How many miles do they have left to drive to reach drive 279 miles. Their destination is 1,043 miles away. day, they drive 228 miles. On the second day, they Alex and their destination? his family go on a roadtrip. On the first

ÖO A public library has more than 50,000 books. There with 6 books on each shelf. How many shelves will sorts the science and technology books on shelves 249 science books and 321 technology books. Mary Mary fill with science and technology books?

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Show your work.



Discuss 5 0 Steps

Mr. Stills makes bags of school supplies for the 9 students each bag of school supplies? into each bag. How many more pencils than erasers are in same number of pencils and the same number of erasers in his class. He has 108 pencils and 72 erasers. He puts the

Discuss what is alike and what is different about the methods Solve the problem by finishing Nicole's and David's methods

Nicole's Method

Write an equation for each step.

Divide to find the number of pencils that Mr. Stills puts in each bag

of school supplies

of school supplies Divide to find the number of erasers that Mr. Stills puts in each bag

pencils in each bag. Subtract the number of erasers 12 in each bag from the number of ∞

There are more pencils than erasers in each bag of school supplies

David's Method

Write an equation for the whole problem

school supplies \parallel how many more pencils than erasers are in each bag of

each bag of school supplies The number of pencils in

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bag The number of erasers in each of school supplies

$$12 - 8 = p$$
 $= p$

9

9

Q

There are more pencils than erasers in each bag of school supplies



Discuss the Steps (continued)

N John is selling bags of popcorn for a school fundraiser. So far, John has sold 45 bags of popcorn for \$5 each. His goal bags of popcorn must John sell to reach his goal? is to earn \$300 for the school fundraiser. How many more

Solve the problem by writing an equation for each step. whole problem. Then solve the problem by writing one equation for the

Write an equation for each step.

Multiply to find how much money John has earned so far selling popcorn.

Subtract to find how much money John has left to earn to reach his goal

his goal Divide to find the number of bags of popcorn John must sell to reach

John must sell more bags of popcorn to reach his goal.

Write an equation for the whole problem

Let 0 = the number of bags of popcorn John must sell to reach his goal.

John's fundraiser Amount of money John has goal amount. raised so far.

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John must sell more bags of popcorn to reach his goal

6

Name



Multistep Word Problems

Use an equation to solve

3. Sara bought some bags of beads. Each bag had she made? did Sara pay for the beads for all of the necklaces that 9 beads and cost \$2. Sara used the beads to make 18 necklaces, each with 25 beads. How much money

There are 5 fourth-grade classes going on a field trip. they have to transport all the students? vans that hold 9 students each. How many vans must classes have 17 students each. They are travelling in Two of the classes have 16 students each and 3 of the

Þ

5. A movie theater has 13 screens. On weekends, each screen shows a movie 7 times in one day. On weekdays, Tuesdays? many more showings are there on Saturdays than on each screen shows a movie 5 times in one day. How

He gives the cashier \$100. How much change does Justin goes to the store and buys 3 T-shirts for \$14 each. He also buys 2 pairs of jeans for \$23 each. Justin receive?

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model cars in all do they have? in equal rows of 3 model cars. How many rows of 6 model cars. Natalie has 18 model cars arranged Terrence has 24 model cars arranged in equal rows of



What's the Error?

Dear Math Students,

the ninth day to reach Point C. 28 miles. Then we will hike from Point B to Point from point A to point B, which is a distance of My friend and I are planning a hike. We will hike figure out how many miles we need to walk on 7 miles each day for 8 days. We are trying to C, which is a distance of 34 miles. We will walk



I wrote and solved this equation.

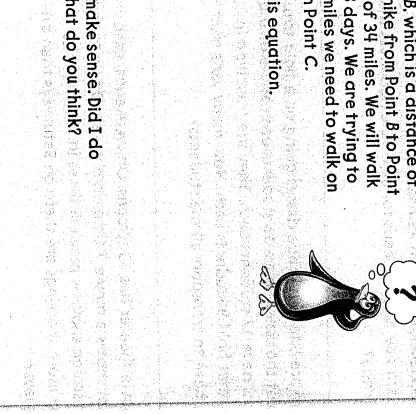
$$28 + 34 - 7 \times 8 = t$$

62 -

× , II

something wrong? What do you think? This answer doesn't make sense. Did I do

Puzzled Penguin Your friend,



<u>0</u>0 Write a response to Puzzled Penguin.

Solve Multistep Problems

148 UNIT 4 LESSON 8



Discuss Multistep Word Problems

Use equations to solve,

Eli reads 6 pages in a book each night. Shelby altogether will Eli and Shelby read in one week? reads 8 pages each night. How many pages

- pizza is Min Soo ordering for the party? be plain cheese. How many slices of plain cheese will have multiple toppings, and the others will Min Soo is ordering 5 pizzas for a party. Each pizza will be cut into 8 slices. Three pizzas
- 'n Jasmine and Mori each received the same party favor bags did they each receive? Mori received a total of 48 favors, how many Each bag contained 8 favors. If Jasmine and number of party favor bags at a friend's party.
- In art class, Ernesto made some fruit bowls for his How many fruit bowls did Ernesto make? placed 36 apples in the bowls she was given. the bowls he was given, and Ernesto's mother each bowl. Ernesto's brother placed 18 apples in mother and brother. Nine apples can be placed in

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U On Tuesday, a bicycle shop employee replaced number of tires that were replaced on those days? tires on 5 tricycles were replaced. What is the total of the tires on 6 bicycles. On Wednesday, all of the



Solve Multistep Word Problems

Use equations to solve.

Show your work.

- 6. Mrs. Luong bought 9 trees for \$40 each. She paid change did she receive? for her purchase with four \$100 bills. How much
- Chan Hee is carrying a box that weighs 37 pounds. a book that weighs 2 pounds. What is the weight of each container? In the box are five containers of equal weight, and
- ©0 A pet shop is home to 6 cats, 10 birds, 3 dogs, and 18 tropical fish. Altogether, how many legs do those pets have?
- Ö Dan has 7 fish in his aquarium. Marilyn has fish do Dan and Marilyn have altogether? 4 times as many fish in her aquarium. How many
- 10. Write a problem that is solved using more than one step. Then show how to solve the problem.

150 UNIT 4 LESSON 9

Metric Prefixes

1,000 mm = 1 m	100 cm = 1 m	10 dm = 1 m		1 dam = 10 m	1 hm = 100 m	1 km = 1,000 m
$10 \times 10 \times 10 \times$ smaller	$10 \times 10 \times$ smaller	10 × smaller	. -	10 × larger	$10 \times 10 \times$ larger	$10 \times 10 \times 10 \times$ larger
mm	cm	dm	3	dam	hm	km
millimeter	centimeter	decimeter	meter	decameter	hectometer	kilometer
		gth	Units of Length	Unit		

14. What words do you know that can help you remember what the prefixes mean in the metric system?

Ü How do the lengths of the different units relate to each other?

16. How many meters are in 1 kilometer?

17. How many millimeters are in 1 m?

O Houghton Mifflin Harcourt Publishing Company <u>co</u> How many centimeters are in 1 m?

19. What makes the metric system easy to understand?

Convert Metric Units of Measure

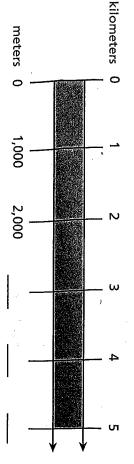
You can use a table to convert measurements.

- 20. How many decimeters are in one meter? _____
- 21. Complete the equation.1 meter = _____ decimeters
- 22. Complete the table. Explain how you found the number of decimeters in 8 meters

8	6	4	2	Meters
	6 ×	× 10	2 × 10	Decin
		=	= 20	Decimeters

You can also use a number line to convert measurements

- 23. Complete the equation. 1 kilometer = meters
- 24. Label the double number line to show how kilometers (km) and meters (m) are related.



Solve each problem. Label your answers with the correct units.

- 25. Marsha drove her car 6,835 kilometers last year. How many meters did Marsha drive last year?
- 26. John's television is 160 cm wide.
 How many millimeters wide is the television?

Solve.

- **27.** 5 m =_____ cm
- 28. $3 \text{ hm} = _$
- m | Z)



Measure Liquid Volume

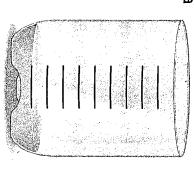
The base metric unit of **liquid volume** is a **liter**.

liter kiloliter milliliter liquid volume VOCABULARY

1,000 mL = 11	100 cL	10 dL		1 daL	1 hL	= 1 kL
$10 \times 10 \times 10 \times$ smaller	$10 \times 10 \times$ smaller	10 × smaller		10 × larger	10 × 10 × larger	$10 \times 10 \times 10 \times$ larger
3	C	dL		daL	hL	kL
milliliter	centiliter	deciliter	liter	decaliter	hectoliter	kiloliter
		Volume	Units of Liquid Volume	Units o	٠.	

one-liter jar. They marked the outside to show equal parts. Ms. Lee's class cut a two-liter plastic bottle in half to make

1. How many milliliters of water will fit in the jar?



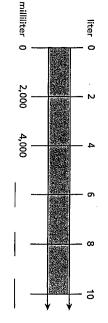
N container? Explain why. How many of these jars will fill a kiloliter

of liquid measure You can use a table or a double number line to convert units

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12	7	5	ω	Liters
	7 ×	× 10	3 × 10	Deciliters
=======================================	_ =] 	= 30	iters

show how liters (L) and milliliters (mL) are related Label the double number line to



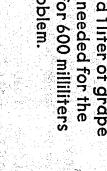
What's the Error?

Dear Math Students,

Control of the contro

Today I had to solve this problem.

of juice. Here is how I solved the problem recipe? I said that the recipe calls for 600 milliliters juice. How many milliliters of juice is needed for the fruit juice, 2 liters of apple juice, and 1 liter of grape Meredith wanted to make some punch for a party. The recipe to make the punch called for 3 liters of



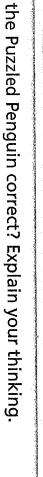
$$3L+2L+1L=6L\times100=600$$
 mL

understand why it is wrong. Is my answer correct? If not, please help me

Puzzled Penguin Your friend,

Ų7

S



g Draw a table to show the conversion from liters to milliliters for each type of juice needed for the recipe

		Liters
		Milliliters

Name another way that you could show the conversion from liters to milliliters for each type of juice.



Measure Mass

The basic unit of mass is the gram.

gram milligram kilogram VOCABULARY

1,000 mg = 1 g	100 cg = 1 g	10 dg = 1 g		1 dag = 10 g	1 hg = 100 g	1 kg = 1,000 g
$10 \times 10 \times 10 \times$ smaller	٦ ×	10 × smaller	1 g	10 × larger	10 × 10 × larger	$10 \times 10 \times 10 \times$ 1 larger
mg	යු	dg	် (ထ	dag	hg	kg
milligram	centigram	decigram	gram	decagram	hectogram	kilogram
		SS	Units of Mass	Un		71. 31. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.

- ço How many milligrams are equal to 1 gram?
- ö How many grams are equal to 1 kilogram?

its mass would be one gram (1 g). If you weighed 1 mL of water, you would find that

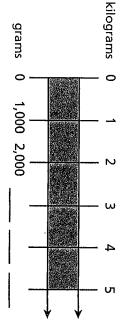
9 Is the gram a small or large unit of measurement? Explain your thinking.

units of mass You can use a table or a double number line to convert

© Houghton Mifflin Harcourt Publishing Company 11. Complete the table

	<u> </u>	<u> </u>	<u> </u>	
15	12	∞	4	Grams
	12 × =	× 100 =	$4 \times 100 = 400$	Centigrams

Ņ Label the double number line grams (g) are related to show how kilograms (kg) and





Practice Converting Metric Units

Solve.

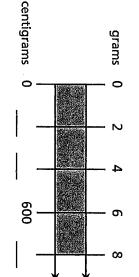
13. Martin measured the mass in grams of four different objects and recorded the information in the table below. Complete the table to find the mass of each object in milligrams.

15	11	7	4	Grams
			4,000	Milligrams

- 15. Hayden has a crayon with a mass of 8 grams. Complete the double number line to find the mass of the crayon in centigrams.
- 16. Jennifer buys a 2-liter bottle of apple juice and a 3-liter bottle of orange juice at the market. How many deciliters of juice does Jennifer buy in all?

14. Olivia bought four different-sized containers and filled them each with water. She recorded the liquid volume of each container in liters below. Complete the table to find the liquid volume of each container in centiliters.

6	4	3	1	Liters
	400			Centiliters



17. Elena has a cat with a mass of 4 kilograms. Ginger's cat has a mass that is 2 times as much as Elena's cat. What is the mass of Ginger's cat in grams?

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Name



Basic Units of Time

Complete the table.

Units o	Units of Time
1. 1 minute = seconds	5. 1 year = days
2. 1 hour = minutes	6. 1 year = weeks
3. 1 day = hours	7. 1 year = months
4. 1 week = days	8. 1 leap year = days

Convert Units of Time

Complete the table.

	4	ω .	2	1	Days
Company of the last of the las	٠	`,		24	Hours

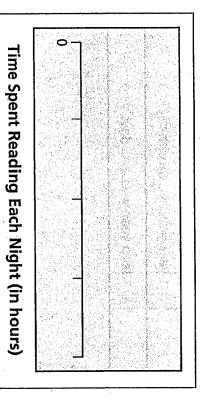
	,			musi #
12	9	6	3	Years
			36	Months

)					Ş
3	2		Hours		7	5	3		Hours
		3,600	Seconds				,	60	Minutes

Make a Line Plot

spend reading. He organized the answers in the table. Jamal asked his classmates about the time they A line plot displays data above a number line.

19. Use the table to complete the line plot.



1 hour	$\frac{3}{4}$ hour	$\frac{1}{2}$ hour	$\frac{1}{4}$ hour	0 hour	Time Spent Reading
4	4	. 5	2	0	Number of Students

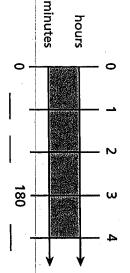
- 20. How many classmates did Jamal ask about time spent reading? _____
- 21. What amount of time had the most responses? _____

Practice

Solve.

- 22. Fiona asked her friends how much time they spend using a computer at home each night. Use the information in the table to make a line plot.
- 23. Marissa wants to know how many minutes she has practiced the piano. Label the double number line to show how hours and minutes are related. How many minutes has she practiced if she practiced for 4 hours?

1 hour	$\frac{3}{4}$ hour	$\frac{1}{2}$ hour	$\frac{1}{4}$ hour	0 hour	Time Spent on Computer
9	ω	7	4	4	Number of Students



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Name



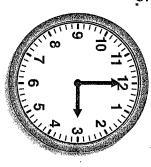
Read Elapsed Time

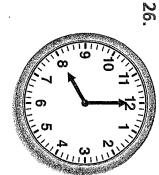
You can imagine the hands moving to tell how much time has passed.

How many minutes? How many hours have passed since 12:00 on each clock?

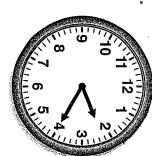


25





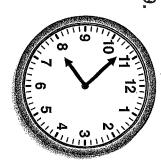
show? Write the time that the clock shows. How many hours and how many minutes does the clock



200



29



hours

minutes

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hours

minutes

hours

minutes

How many hours and minutes have passed between the times shown in:

30. Exercises 27 and 28

31. Exercises 28 and 29

32. Exercises 27 and 29

UNIT 5 LESSON 3

Solve Elapsed-Time Problems

Solve.

Show your work.

- w The school store is open for 1 hour and 45 minutes in the afternoon. The store closes at 2:55 P.M. What time does the school store open?
- Ä Hannah's practice starts are 9:45 A.M. and ends at 12:35 P.M. How long is Hannah's practice?
- W W1 Bella's dance class starts at 3:05 and lasts 1 hour class end? 35 minutes. At what time does Bella's dance
- Ŝ Lynn goes to the mall with her mom. They get to the mall at 6:20 and leave at 8:25. How long were Lynn and her mom at the mall?
- 37. It takes Reese 32 minutes to walk to school. She gets to school at 7:55 A.M. What time did Reese leave her house to walk to school?
- . (2) Kevin is baking a cake. finish making the cake. At what time was Kevin at 8:03 P.M. It takes him 1 hour 17 minutes to finished making the cake? He starts making the cake



Units of Length

This line segment is 1 inch long. Name an object that is about

> foot inch VOCABULARY mile yard

w One yard is equal to 3 feet or 1 inch long.

> ~ long. One foot is equal to 12 inches Name an object that is about 1 foot

36 inches. Name an object that is about 1 yard long.

Þ Longer distances are measured in that is about 1 mile long. miles. One mile is equal to 5,280 feet or 1,760 yards. Name a distance

Convert Customary Units of Length

Ų٦ Complete the table.

6. Complete the table.

ъ	4	ω	2	1	Feet
				12	· Inches

10	8	6	4	2	Yards
				6	Feet

@ Houghton Mifflin Harcourt Publishing Company Solve.

$$I. 9 \text{ yards} = \underline{\qquad}$$
 Inches

4 miles =

feet

Glass/Acquirity

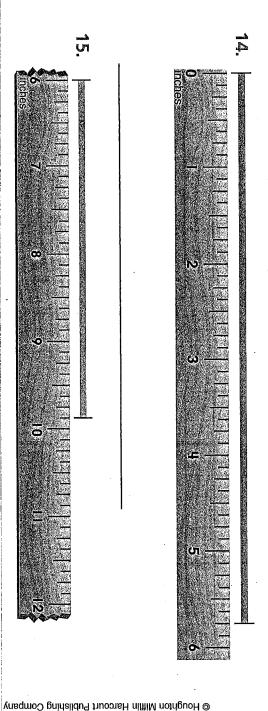
Measure Length

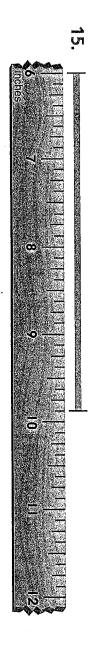
Write the measurement of each line segment to the nearest $\frac{1}{8}$ inch.











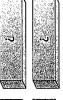


Pounds and Ounces

VOCABULARY pound ounce

customary system. One **pound** is equal to 16 **ounces** The pound is the primary unit of weight in our

that contain four separately wrapped sticks. Butter and margarine are sold in 1-pound packages





- 1. What is the weight in ounces of one box?
- 2. What is the weight in ounces of one stick?
- 'n the table. How many ounces are equal to 5 pounds? Kimba buys a bag of flour that weighs 5 pounds. Complete

5	4	3	2	1	Pounds
				16	Ounces

Þ Describe how to convert pounds to ounces without using a table.

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UT1 dog weighed 432 ounces. How many ounces did Martin's When Martin weighed his dog in April, the dog weighed 384 ounces. When he weighed the dog in August, the dog gain between April and August?

ton VOCABULARY

Tons

equal to 2,000 pounds. elephants, and whales is measured in tons. One ton is The weight of heavy items such as cars, trucks, boats,

A ship weighs 12,450 tons. In pounds, the ship weighs to describe the weight of the ship? Why? 24,900,000 pounds. Which measure would you use

- A trailer can carry 2 tons of cargo. How many pounds of cargo can the trailer carry?
- 00 One cargo container weighs 4 ounces. A shipment of cargo containers are in the shipment? Show your work. cargo containers weighs a total of 1 ton. How many

Practice

Solve.

- 9. 3 tons = pounds
- Ö 7 pounds = ounces

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- 5 tons = pounds
- Ņ 12 pounds = ounces
- Ü 9 tons =pounds
- 19 pounds = ounces

Liquid Volume

cup quart fluid ounce VOCABULARY gallon pint

liquid volume is a cup. In the customary system, the primary unit of

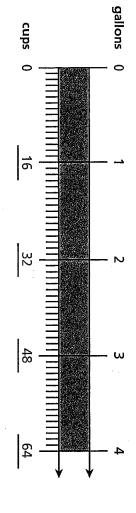
- 1 cup $\Box = 8$ fluid ounces
- 4 cups = 1 quart
- 2 cups $\bigcirc = 1$ pint

'n. Complete the table

4
quarts
<u> </u>
gal

6	5	. 4	3 ·	2		Quarts
					32	Fluid Ounces

رن س Label the double number line to show how gallons (gal) and cups (c) are related.



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18.
$$10 c =$$
 fl oz

 \cap

Solve Real World Problems

Show your work.

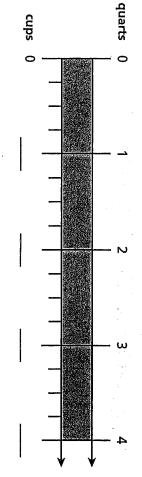
Solve.

20. A race is 5 miles long. Complete the table. How many feet are equal to 5 miles?

ъ	4	3	2	1	Miles
				5,280	Feet

of watermelon weigh? the same weight. How many ounces does each piece DeShawn has a watermelon that weighs 64 ounces. He cuts the watermelon into 8 pieces that each have

22 water are A container has 4 quarts of water left in it. Complete between quarts and cups. How many cups of the double number line to show the relationship left in the container?

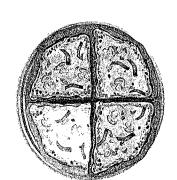


23 Melinda has 2 yards of fabric to make a banner.

How many feet of fabric does she have? How many inches of fabric does she have?

➤ A Whole Number Multiplied by a Unit Fraction

every week. Friday. Each slice is $\frac{1}{4}$ of a pizza. Mandy eats one slice The lunchroom at Mandy's school serves pizza every



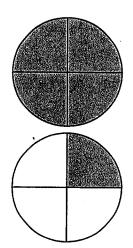
you can add or multiply. To find the fraction of a pizza she eats in three weeks,

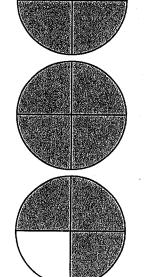
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$$

or
$$3 \cdot \frac{1}{4} = \frac{3}{4}$$

Show your work. Solve each problem, first by adding and then by multiplying.

- 1. What fraction of a pizza does she eat in five weeks?
- 2. What fraction of a pizza does she eat in eleven weeks?





Draw a model for each problem. Then solve.

$$4.6 \cdot \frac{1}{5} =$$

5.
$$10 \cdot \frac{1}{8} =$$

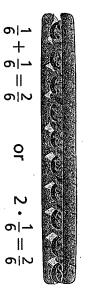
as the product of a whole number and a unit fraction. Draw a model for each fraction. Then write each fraction

$$7.\frac{8}{3} =$$
 .

8.
$$\frac{12}{7} = \frac{12}{12}$$

A Whole Number Multiplied by a Non-Unit Fraction

sandwich, every week. of a sub. Joe eats two pieces, or $\frac{2}{6}$ of a sandwiches every Thursday. Each slice is $\frac{1}{6}$ The lunchroom at Joe's school serves sub

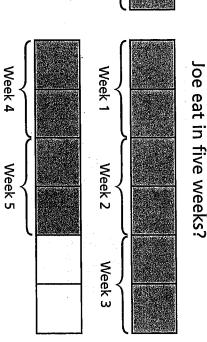


multiplying. Write your answer as a fraction. Solve each problem, first by adding and then by

Show your work.

What fraction of a sandwich does Joe eat in three weeks?

10. What fraction of a sandwich does



Week 1

Week 2

Week 3

Draw a model for each problem. Then solve.

11.
$$4 \cdot \frac{3}{8} =$$

12.
$$2 \cdot \frac{4}{5} =$$

13.
$$5 \cdot \frac{2}{3} =$$

Solve. Write your answer as a fraction.

$$14.8 \cdot \frac{3}{4} =$$

15.
$$18 \cdot \frac{2}{3} =$$

16.
$$10 \cdot \frac{5}{6} =$$

17.
$$4 \cdot \frac{5}{7} =$$

18.
$$15 \cdot \frac{3}{10} =$$

Ö

 $\omega | \omega$

II



Real World Problems

Draw a model for each problem. Then solve

20. The five members of the Sanchez family each drank did the family drink for breakfast altogether? $\frac{3}{4}$ cup orange juice for breakfast. How much juice

2 Stella ran $\frac{1}{2}$ mile. Brian ran 7 times as far as Stella How far did Brian run?

Write an equation. Then solve.

ow your work.

- 22 A banner has a length of 3 yards and a width of $\frac{2}{3}$ yard. What is the area of the banner?
- @ Houghton Mifflin Harcourt Publishing Company N The eat altogether? ate 3 slices. What fraction of a pizza did the team Each pizza 12 members of a volleyball team had was divided into 8 equal slices and each player a pizza party.
- 24 It took Eli's mother took Alex 4 times as long as this to walk to school. How long did it take Alex to walk to school? တ|hour to drive him to school. It



Real World Problems (continued)

Write an equation. Then solve.

Show your work.

25 Ami has building bricks that are $\frac{5}{8}$ inch thick. She

makes a stack of 15 bricks. How tall is the stack?

- 20 A crepe recipe calls for $\frac{3}{4}$ cups of flour. A much flour is in the bread recipe? recipe calls for four times this much flour. How bread
- 27. The path around a park is $\frac{7}{12}$ mile long. Nicolas ran around the park 6 times along the path. How far did he run?

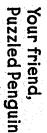
What's the Error?

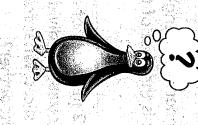
Dear Math Students,

take $\frac{1}{2}$ hour. I tried to multiply to find the total time math, science, and reading. I think each subject will I have so much homework! I have assignments in

That can't be right! I know $\frac{3}{6}$ is the same as $\frac{1}{2}$, so that is only $\frac{1}{2}$ hour.

What did I do wrong? How long will my homework really take?





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28. Write a response to Puzzled Penguin

<u>လ</u> ပ

Glass/Ag

Multiplication Practice

product of a whole number and a unit fraction. Write each fraction as a sum of unit fractions and as the

1.
$$\frac{4}{7} =$$

$$2. \frac{5}{2} =$$

$$\frac{4}{7} =$$

Draw a model for each problem. Then solve.

$$5.6 \cdot \frac{1}{4} =$$

6.
$$6 \cdot \frac{2}{3} =$$

$$7.3 \cdot \frac{2}{9} =$$

8.
$$4 \cdot \frac{4}{5} =$$

a whole number, when possible. Multiply. Write your answer as a mixed number or

9.
$$20 \cdot \frac{3}{10} =$$

10.
$$36 \cdot \frac{5}{9} =$$

11.
$$2 \cdot \frac{2}{12} =$$

12.
$$21 \cdot \frac{1}{3} =$$

13.
$$16 \cdot \frac{3}{8} =$$

4.
$$11 \cdot \frac{7}{10} =$$

Real World Problems

Show your work.

as a mixed number or a whole number, when possible. Draw a model for each problem. Then solve. Write your answer

- 15. Michelle has three textbooks. Each weighs $\frac{5}{8}$ pound What is the total weight of her textbooks?
- <u>က</u> Mark lived in a house in the suburbs with $\frac{2}{3}$ acre of land. this much land. How much land is on Mark's farm? Then he moved to a farm in the country that had 6 times

a mixed number or a whole number, when possible. Write an equation. Then solve. Write your answer as

- 17. A restaurant served quiche for lunch today. Each quiche was cut into six pieces. The restaurant sold 59 pieces. How many quiches is this?
- <u>0</u> Zahra's dog Brutus weighed $\frac{7}{8}$ pound when he was does Brutus weigh now? born. Now he weighs 60 times this much. How much
- 9 Calvin made posters to advertise the school play What is the area of each poster? The posters are 2 feet long and $\frac{11}{12}$ foot wide.

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Practice Comparing Fractions

Circle the greater fraction. Use fraction strips if you need to

- 7 6 2 2 -
- 9

- 81W 70 51-1 81-1

Write > or < to make each statement true.

- 70 ≈ 70 w 72 ∞ ∞ 1ω

- 0 100 4

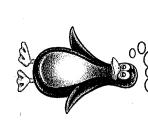
What's the Error?

Dear Math Students,

My mother told me I made a mistake. because 6 is greater than 4, so $\frac{2}{6}$ is greater than $\frac{2}{4}$. mother that we ate more fish yesterday than today of the fish. Today, we ate $\frac{2}{4}$ of the fish. I told my Yesterday, my family caught a large fish. We ate $\frac{2}{6}$



Puzzled Penguin Your friend,



Ü Write a response to Puzzled Penguin.



Make Sense of Problems

16. Explain how to compare fractions with the same denominator but different numerators.

Explain how to compare fractions with the same numerator but different denominators

Solve.

18. Bao kept a list of the birds that visited his bird feeder in one day. He noticed that $\frac{2}{5}$ were finches and $\frac{2}{6}$ were wrens. Did more finches or more wrens visit the bird feeder? Tell how you know.

19. Mariel had a box of baseball cards. She kept $\frac{3}{8}$ of the cards to Javier. Who had more of the cards? Explain.

20. Write the fractions $\frac{10}{12}$, least to greatest. $\frac{5}{12}$, and $\frac{7}{12}$ in order from

Discuss Number Lines

bar above it. Discuss how the number line is like and unlike the fraction The number line below shows the fourths between 0 and 1

41-4 -4-14 4-

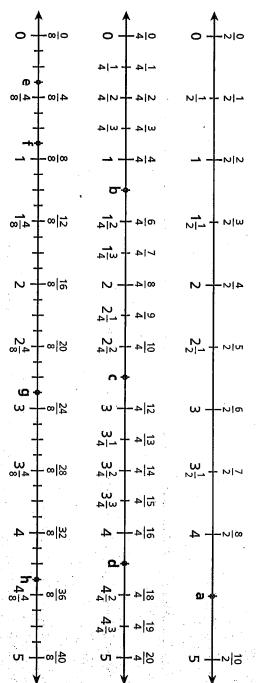
These number lines are divided to show different fractions

0|4

4

2|4

 $\omega | 4$



Write > or < to make each statement true

$$\cdot \frac{15}{4} \bigcirc \frac{20}{8}$$

$$3. \frac{10}{4} \bigcirc \frac{24}{8}$$

$$1.2\frac{4}{8} \bigcirc 1\frac{3}{4}$$

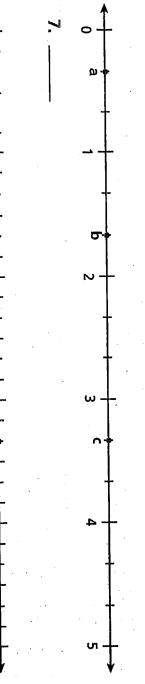
Identify Points

UT Write the fraction or mixed number for each lettered point above

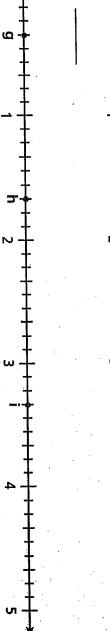
Number Lines for Thirds and Sixths

Then write fraction labels above the equal parts. Tell how many equal parts are between zero and

g



00



Write > or < to make each statement true

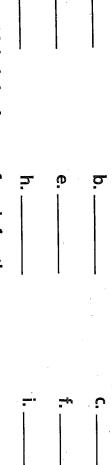
9.
$$\frac{4}{3}$$
 \bigcirc $\frac{7}{6}$

10. 8 o|2

11.
$$3\frac{5}{6}$$
 $3\frac{2}{3}$

Identify Points

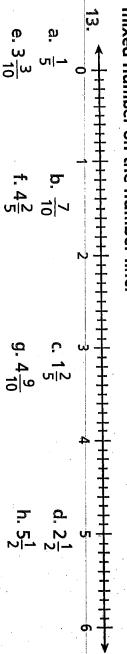
12. Write the fraction or mixed number for each lettered point above. Describe any patterns you see with the class.



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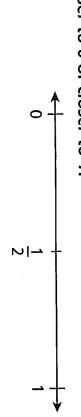
Ω.

Mark and label the letter of each fraction or mixed number on the number line.



Fractions and Benchmarks

Write closer to 0 or closer to 1. Decide if each fraction is closer to 0 or closer to 1.



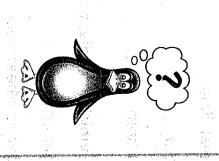
<u>ن</u>

∞|**√**

Ö

 ω

0 -



What's the Error?

Dear Math Students,

I am baking cookies. My recipe calls for $\frac{5}{8}$ pound of walnuts. Walnuts come in $\frac{1}{2}$ -pound bags and 1-pound bags. My friend says that $\frac{5}{8}$ is closer to $\frac{1}{2}$ than it is to 1, so I should buy a $\frac{1}{2}$ -pound bag. I think my friend is wrong.

Do you agree with me or with my friend? Can you help me decide what size bag of walnuts I should buy?

Your friend, Puzzled Penguin

20.	
Write a response to	
a Te	
spor	
nse i	
to	
uzzled	
ed	
Penguin.	,

Use Benchmarks

and amounts. The list below shows a variety of cooking ingredients

wheat flour- $1\frac{5}{8}$ c sugar- $1\frac{1}{8}$ c oat bran- $1\frac{4}{5}$ c
- C

Decide if each amount is closer to $\frac{1}{2}$ cup, $1\frac{1}{2}$ cups, or 2 cups. Write closer to $\frac{1}{2}$ c, closer to $1\frac{1}{2}$ c, or closer to 2 c.

- 21. wheat flour
- 22. white flour

23. sugar

25. oat bran

- 24. cornstarch
- 26. water

Decide which ingredient represents a greater amount.

- 27. sugar or water
- 28. sugar or wheat flour
- 29. cornstarch or sugar
- 30. wheat flour or white flour
- 31. sugar or oat bran
- 32. oat bran or white flour

Compare Fractions of Different-Size Wholes

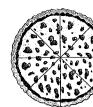
sandwiches: one on a short loaf of bread and one on a think the pieces are not the same size. longer loaf. Jon cuts each sandwich into 6 pieces. His friends Jon and his five friends want sandwiches. They make two

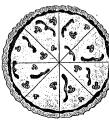


- Are Jon's friends correct? Explain. 2. What can Jon do to make sure amount of food? everyone gets the same

 $\frac{1}{8}$ of the small pizza and her friend takes $\frac{1}{8}$ of the large pizza pizza. He divides each pizza into 8 equal pieces. Hattie takes Hattie's dad orders one small, one medium, and one large







Hattie says she has less pizza than her friend. Is she correct? Explain.

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What do these problems tell us about fractions?



Fraction Word Problems

Solve

Show your work.

UT A shelter had 4 spaniel puppies and 6 beagle puppies. Jack adopted $\frac{1}{2}$ of the spaniel puppies, and Carmen adopted $\frac{1}{2}$ of the beagle puppies. Who adopted more puppies? How do you know?

6. Julio planted 16 daisies and 10 sunflowers. His the sunflowers? Explain. the goat eat a greater fractional part of the daisies or neighbor's goat ate 5 daisies and 5 sunflowers. Did

A fruit market sells two different packages of

oranges. Bags contain 12 oranges, and boxes contain

is a better buy? Why? 15 oranges. Both packages cost \$3.00. Which package

00 at the first water stop at that time? Explain. at the same time. Which team had the most runners team has 12 runners. In a race, $\frac{1}{4}$ of Team A, $\frac{1}{3}$ of The fourth grade has three running teams. Each Team B, and $\frac{1}{6}$ of Team C passed the first water stop

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