Time



Name

Using Measurement



- Talk with people at home about how they use measurements at home, at their jobs, or in other activities.
- Ask people at home to show you the tools they use for measuring. Write the names of some of these tools. Be ready to talk about your list in class.

- 3. Look for measures in pictures in newspapers or magazines. For example, an ad might name the height of a bookcase or tell how much a container holds. Ask an adult if you may bring the pictures to school for our Measures All Around Museum. Circle the measures.
- 4. Bring one or two small boxes shaped like rectangular prisms to school. The boxes should be small enough to fit on a sheet of paper. You will need these for Lesson 9-4.

Practice				
5. 86	6. 770	7. 60	8. 350	
+ 29	<u>+ 21</u>	<u>- 14</u>	<u>- 25</u>	



Measuring Length with Paper Clips

- Materials 🛛 🗆 small paper clips
 - \Box large paper clips

Directions

1. Use small paper clips to measure the line below.

About how many small paper clips? _____ Now, use large paper clips to measure the same line. About how many large paper clips? _____

2. Try again. Measure this line with small and large paper clips.

About how many small paper clips? _____

About how many large paper clips? _____

3. Why are the measurements different for the same line?

q.





Describe your plan below.

2.	Carry out your plan. Compare the lengths of the crooked	
	paths. Write the letter for the path that is	

the longest path: _____

the shortest path: _____

3. Estimate the length of each path in yards. Use words like about, a little more than, a little less than.

•
•
•
-



256

Object <i>or</i> Distance	Nearest Foot	Nearest Inch
	about ft	about in.
	about ft	about in.

2. Cut out the 10-centimeter ruler on the next page. Measure the same objects or distances. Measure to the nearest decimeter. Then measure again to the nearest centimeter.

Object <i>or</i> Distance	Nearest Decimeter	Nearest Centimeter	
	about dm	about cm	
	about dm	about cm	

Linear Measurements

Family Today your child reviewed how to use a ruler to measure objects and distances in inches and feet and in centimeters and decimeters. Your child's class also began making a Table of Equivalent Measures for the U.S. customary and metric systems. Ask your child to show you how to measure some of the objects or distances that he or she selects to complete the tables below.

Date

Please return this Home Link to school tomorrow.

1. Cut out the 6-inch ruler on the next page. Measure two objects or distances. Measure to the nearest foot. Then measure again to the nearest inch. Some things you might measure are the width of the refrigerator door, the length

of the bathtub, or the height of a light switch from the floor.

Note



HOME LINK







Linear Measurements continued

Complete each sentence.

- **3.** One foot is equal to _____ inches.
- **4.** One yard is equal to _____ feet.
- **5.** One decimeter is equal to _____ centimeters.
- **6.** One meter is equal to _____ centimeters.
- 7. Two feet are equal to _____ inches.
- 8. Three yards are equal to _____ feet.
- **9.** Four decimeters are equal to _____ centimeters.
- **10.** Seven meters are equal to _____ centimeters.

Practice

- **11.** 23 + 46 = _____
- **12.** 38 + 47 = _____
- **13.** 84 36 = _____
- **14.** 76 39 = _____





Date

Time









A Centimeter



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Date

Time



Name

Family Today your child measured life-size pictures of objects to the nearest half-inch and half-centimeter. Take turns with your child measuring objects to the nearest half-inch and Note half-centimeter. Check to see if your measurements are the same. Please return this Home Link to school tomorrow.

Cut out the 6-inch ruler on the next page. Measure each line segment to the nearest half-inch. Write the measurement in the blank to the right of each segment.

Cut out the 15-centimeter ruler on the next page. Measure each line segment to the nearest half-centimeter. Write the measurement in the blank to the right of each segment.

3. centimeters

4 centimeters

Measure some objects in your home to the nearest half-inch or half-centimeter. List the objects and their measurements below.

Object	Measurement
5	
6	
7.	
0	
0	·





Measuring Lengths continued

9. Draw pictures of two things you measured. Mark the parts you measured. Record the measurements under the pictures.



Comparing Lengths of Objects

Take a paper strip from your teacher. Use your 12-inch ruler to measure the paper strip to the nearest inch. Record the length on the paper strip, including the units.

Find 5 objects in the room that are about the same length as the paper strip. List the names or draw pictures of your objects.

Are all your objects **about** the same size?

Are all your objects **exactly** the same size? _____

Write 5 sentences that compare the objects. Use words like *longer, shorter, about, a little more than,* and so on.

Example:

1.

2.

4.

5. 264

The crayon and the eraser are **about** 3 inches long. The eraser is **a little shorter than** the crayon.

3.



LESSON





Metric Units of Linear Measure

Work with 1 or 2 people.

- **Materials** \Box tope measure
 - □ meterstick
 - \Box string or ribbon from your teacher

Directions

- **1.** Check your measuring tools. Look for these units:
 - 1 meter (100 centimeters)
 - decimeters (10 centimeters each)

If the units are hard to see, mark them with a crayon.

2. Measure the string or ribbon you get from your teacher. Measure it 3 times.

Use meters the first time you measure. Use decimeters the next time. Use centimeters the last time.

meters decimeters centimeters



Name

Metric Units continued

- 3. Choose a different item to measure, such as:
 - the width of a door, the classroom, or a window
 - the length of someone's arm or leg
 - the length and width of a rug, a table, or the hall

Measure the item 3 times. Use meters the first time you measure, decimeters the next time, and centimeters the last time.

_____ meters

_____ decimeters

_____ centimeters

4. Discuss the measurements in Problems 2 and 3. Can anyone see any patterns among the 3 measurements? Explain the patterns you see.

5. Name some things that would best be measured in these units:

- a. meters _____
- **b.** centimeters _____
- c. decimeters _____



Name	Date Time	
HOME LINK 9+4	Perimeter	
Family Note	Today your child found the perimeter of different shapes and the distance around his or her thumb, wrist, neck, and ankle. Perimeter is the measure around something. Finding perimeters also gives your child practice in measuring to the nearest inch and centimeter. <i>Please return this Home Link to school tomorrow.</i>	

Cut out the 6-inch ruler on the next page. Measure the side of each figure to the nearest inch. Write the length next to each side. Then find the perimeter.





Perimeter *continued*

Solve the number story. Write a number model.

3. Mr. Lopez is putting a fence around his vegetable garden. The garden is shaped liked a rectangle. The longer sides are 14 feet long, and the shorter sides are $9\frac{1}{2}$ feet long. How much fencing should Mr. Lopez buy?

Answer: f	eet
-----------	-----

Number model: ____

4. Draw a quadrangle below. Measure the sides to the nearest $\frac{1}{2}$ -inch. Write the length next to each side. Find the perimeter.

The perimeter of my quadrangle is _____ inches.

0 inches	1	2	3	4	5	6

Date

Measuring Perimeter in Paces

Your teacher will put two lines of tape on the floor that are 18 feet apart.

 Start with your toes on one line. Count the number of paces you take to reach the other line. Each time your foot hits the floor counts as 1 pace.

Number of paces: ____

2. Use this table to find out how long your pace is.

Number of Steps Taken	Length of Your Pace Is About
15 or more	1 foot
11 to 14	$1\frac{1}{2}$ feet
8 to 10	2 feet
7	$2\frac{1}{2}$ feet
6	3 feet

The length of my pace is about _____ feet.



LESSON

Q•4



NE LINK	Travel	Interview

Name

HON



Family Our class is studying measurement of longer distances. If the traveler your child talks to had experiences with the metric system in another country, have your child include this information to share with the class.

Please return this Home Link to school tomorrow.

Ask someone at home to tell you about the longest trip he or she ever took. Write about the trip. Here are some questions you might want to ask that person:

- When did you take the trip?
- Where did you go?
- What interesting or unusual things did you see or do?
- How did you travel? By car? By plane? By train?
- How long did the trip take?
- How far did you travel?

Practice

1. 136 + 78 = _____

2. 172 - 59 = _____



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How Many Days?

Use the map on journal page 218. Solve the problem below. Explain your work.

The Chang family drove from Seattle to Los Angeles by way of Butte, Billings, Cheyenne, Denver, and Albuquerque. They drove about 400 miles per day. About how many days did the trip take them?

Name

LESSON

9•5

Units of Measure

All the items below may be measured with any of the given units. Some units are best for measuring short distances, and some units are better for measuring long distances.

Decide which unit is best for each situation.

Circle the unit that you would use to measure each of them.

1. distance from Orlando, Florida, to Boston, Massachusetts inch foot mile 2. length of a paper clip kilometer centimeter meter 3. height of your teacher mile yard foot 4. perimeter of your bedroom kilometer centimeter meter **5.** width of a deck of cards foot yard inch 6. length of a bus mile inch foot





Which Cylinder Holds More?

Work with a small group.

Materials

Math Journal 2, p. 221

🗆 rulers; masking tape; macaroni

 \Box pieces of cardboard

 \Box 2 sheets of 8 $\frac{1}{2}$ " by 11" construction paper

Directions

- **1.** Draw a line 1 inch from a long edge on one construction paper rectangle.
 - Roll the rectangle into a long cylinder and tape the paper along the line.
 - Then tape the cylinder to a piece of cardboard.
- **2.** Draw a line 1 inch from a short edge on the other rectangle.
 - Roll the rectangle into a short cylinder and tape the paper along the line.
 - Then tape the cylinder to a piece of cardboard.







Which Cylinder Holds More? continued

- **3.** Talk about these questions with your group.
 - Suppose that you fill both containers with macaroni.
 Will one of the cylinders hold more macaroni than the other?
 - If so, which one? Why? Record your prediction on journal page 221.
- **4.** Find out. Fill the tall cylinder with macaroni.

Then carefully pour the macaroni from the tall cylinder into the short cylinder.

Record what happened on journal page 221.



Measuring Area

Work in a small group.

- Materials 🗌 centimeter grid paper
 - \Box inch grid paper
 - \Box Everything Math Deck, if available
 - ☐ for tracing: slate, Pattern-Block Template, crayon box, and other objects
 - ☐ *Math Journal 2,* p. 221

Directions

1. Place the deck of cards on the centimeter grid paper.

Trace around the deck. The tracing shows the border of the deck.

- **2.** Count the squares that cover the space inside the border.
 - If more than half of a square is inside the border, count the whole square.
 - If less than half of a square is inside the border, do not count the square at all.
- **3.** The amount of space inside the border is called the **area**.

The number of squares you counted is a measurement of the area in **square centimeters.**

278

Measuring Area continued

- **4.** Repeat Steps 1 and 2 using inch grid paper.
- **5.** Find the area of four or five more objects.

You might trace things like ...

- a Pattern-Block Template
- pattern blocks
- a crayon box
- objects from the Measures All Around Museum
- 6. Record the areas you measured on journal page 221.

Follow-Up

Work together as a group. Explain why your results are estimates and not exact measurements. How are the units used to measure area different from those used to measure perimeter?

LESSON

9.6



Time



9.6 Things to Measure

Work with a small group.

- Materials 🗌 Math Masters, p. 280
 - ruler; tape measure; meterstick; yardstick; scale; measuring cup; measuring spoon

Directions

- **1.** Explore and discuss how to use each of the measuring tools.
- 2. Sort the measuring tools into the following three groups:

linear measures: tools that measure length, width, height, distance between, distance around (perimeter)

measures of weight: how heavy a thing is; how hard it is to move

measures of volume and capacity: how much of something there is; how much a container will hold

3. Complete *Math Masters,* page 280. List things you can measure with tools from each group. Write the unit that would be used to measure each item.

Follow-Up

Discuss other measuring tools you know about.

List them on the back of Math Masters, page 280.

lam	e	Date	Time
LES: 9.	6 Things to Mea	Sure continue	d
1.	List 4 things you can meas measure, a meterstick, or a you would use to make ea	ure with a ruler, a yardstick. Writ ch measuremer	a tape e the unit that it.
	Object	Unit	
	Example: <u>Math Journal</u>	Inches	
2.	List 4 things you can weigh	with a scale.	
	Object	Unit	
3.	List 4 things you can meas	ure with a meas	suring cup,
	a measuring spoon, or son	ne other contain	er.
	Object	Unit	

Name

Date

Time



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3. 459 - 100 = ____ 5. 350 460 6.

+ 50

59

9•6 Area

Guess how many cubes are needed to cover each square with no gaps or overlaps. Cover each square with cubes to check your guess.

1. I think it will take	
cubes to cover this square.	
It took cubes to cover this square.	
2. I think it will take	
cover this square.	
It took cubes	
to cover this square.	

4•

Date

Time



HOME LINK **Area and Perimeter**

Today children discussed the concept of finding the area of a surface. Area is measured by Family finding the number of square units needed to cover the surface inside a shape. Make sure Note your child understands that, when he or she is finding the perimeter of the letters in Problem 4, he or she is finding the distance around the outside of the letters.

Please return this Home Link to school tomorrow.

Find the area of each letter.



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Find the area of each letter.



Try This

An 8-by-8 checkerboard has 64 squares. Some squares on a checkerboard are white. Some are black. Squares of the same color are never next to each other.

7. How many white squares are in each row? _____
B. If the square in one corner is black, what color is the square in the diagonal corner? _____



Name	Date Time	
HOME LINK 9+8	Capacity	
Family Note	Y Today children discussed units of capacity. Capacity is a measure of the amount of space something occupies or contains. Your child recorded equivalent U.S. customary units of cap (cup, pint, quart, half-gallon, gallon) and equivalent metric units of capacity (milliliter, liter) Please help your child pick out a recipe and identify the units of capacity in the list of ingree <i>Please return this Home Link to school tomorrow.</i>	oacity dients.

Ask someone at home to help you find a recipe that uses units of capacity. Copy those ingredients and the amounts that are used in the recipe. Bring your list to school.

Example: $\frac{3}{4}$ cup of milk

"What's My Rule?"



Date

LESSON 9-8

Measuring Capacity

- Materials 🛛 half-gallon container
 - 🗆 tape
 - □ measuring cup
 - \Box pitcher of water
 - 1. Make a measuring container.
 - Attach a piece of tape from the bottom to the top of an empty half-gallon container.
 - Fill a measuring cup with a half-cup of water.
 - Pour the water into the container.
 Do all of your pouring on a tray to catch the drips.
 - Mark the tape to show how high the water is inside the container.



- Write $\frac{1}{2}$ **c** next to the mark.
- Pour another half-cup of water into the container.
- Mark the tape and write **1 c** next to the mark.
- Continue. Mark the tape 1¹/₂ c to show 3 half-cups,
 2 c for 4 half-cups, and so on. Fill the container.
- Pour the water back into the pitcher.

Date

Time



Measuring Capacity continued

2. In the first column of the table below, write the names or draw pictures of several containers in the Measures All Around Museum. In the second column, estimate the capacity of each container.

Container (description or picture)	Estimated Capacity	Measured Capacity
	c	C
	c	C
	c	C
	c	c

- 3. Measure the capacity of each container.
 - Fill the container with water.
 - Pour the water into your measuring container.
 - See how high the water is on the tape. Write the number of the nearest mark in the third column above.
 - Pour the water back into the pitcher.

	Dule
HOME LINK 9+9	Weight
Family Note	Today children discussed U.S. customary units of weight (pounds, ounces) and metric units of weight (grams, kilograms). Your child weighed different objects using a variety of scales. Help your child weigh items using scales in your home or find items with weights written on them.
	Please return this Home Link to school tomorrow.

Data

Timo

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Find out what kinds of scales you have at home—for example, a bath scale, a letter scale, or a package scale. Weigh a variety of things on the scales, such as a person, a letter, or a book. Record your results below.

If you don't have any scales, look for cans and packages of food with weights written on them. Record those weights below. Remember that ounces (oz) measure weight and that fluid ounces (fl oz) measure capacity.

Object	Weight (include unit)
Practice	
1. 86 + 73 =	2. 132 + 45 =

Namo



Time



Unit 10: Family Letter

Decimals and Place Value

In this unit, children will review money concepts, such as names of coins and bills, money exchanges, and equivalent amounts. They will pretend to pay for items and to make change.

The unit also focuses on extending work with fractions and money by using decimal notation. Children will use calculators for money problems and estimation.

Later in this unit, children will work with place-value notation for 5-digit numbers. Here, as previously, the focus remains on strategies that help children automatically think of any digit in a numeral in terms of its value as determined by its place. For example, children will learn that in a number like 7,843, the 8 stands for 800, not 8, and the 4 for 40, not 4.







Please keep this Family Letter for reference as your child works through Unit 10.



Vocabulary

Important terms in Unit 10:

decimal point A mark used to separate the ones and tenths places in decimals. A decimal point separates dollars from cents in money notation. The mark is a dot in the U.S. customary system and a comma in Europe and some other countries.

flat In *Everyday Mathematics*, the base-10 block consisting of one hundred 1-centimeter cubes.



long In Everyday

Mathematics, the base-10

block consisting of ten 1-centimeter cubes.

cube In *Everyday Mathematics,* the smaller cube of the base-10 blocks, measuring 1 centimeter on each edge.



place value A system that gives a digit a value according to its position in a number. In our standard *base-10* (decimal) system for writing numbers, each place has a value 10 times that of the place to its right and one-tenth the value of the place to its left. The chart below illustrates the place value of each digit in 7,843.

thousands	,	hundreds	tens	ones
7	,	8	4	3

Building Skills through Games

In Unit 10, your child will build his or her understanding of fractions and money by playing the following games:

Fraction Top-It

Players turn over two fraction cards and compare the shaded parts of the cards. The player with the larger fraction keeps both cards. The player with more cards wins.

Money Exchange Game

Players roll a die and put that number of \$1 bills on their Place-Value Mats. Whenever possible, they exchange ten \$1 bills for one \$10 bill. The first player to make an exchange for one \$100 bill wins.

Pick-a-Coin

Players create coin collections based on rolls of a die. Players try to get the largest possible values for their collections.

Spinning for Money

Players "spin the wheel" to find out which coins they will take from the bank. The first player to exchange his or her coins for a dollar wins.

Equivalent Fractions Game

Players take turns turning over Fraction Cards and try to find matching cards that show equivalent fractions.



Unit 10: Family Letter cont.

Do-Anytime Activities

To work with your child on the concepts taught in this unit and in previous units, try these interesting and rewarding activities:

1. Collect a variety of coins and help your child count them. Discuss what other coin combinations would equal the same amount. For example, each group of coins shown on this page equals \$1.00.



- 2. Write a 4-digit number, such as 2,581. Have your child tell you the place value of each digit. Rearrange the digits several times, pointing out the change in place value for each of the new number's digits. In 2,581, the 2 stands for 2,000; the 5, 500; the 8, 80; and the 1, 1.
- 3. Ask your child to add up grocery receipts by using a calculator.



Unit 10: Family Letter cont.

As You Help Your Child with Homework

As your child brings home assignments, you may want to go over the instructions together, clarifying them as necessary. The answers listed below will guide you through this unit's Home Links.

Home Link 10+1

1. 10 pennies = 10c, or \$0.10 10 nickels = 50c, or \$0.50 10 dimes = \$1.00 10 quarters = \$2.50 10 half-dollars = \$5.00 Total = \$9.10

Home Link 10+2

1.	\$3.57	2. \$3.55	3. \$0.52	4. \$0.08
5.	Sample ar	nswers: \$1 \$1	Q Q D P	P P P or
	\$1 Q Q	$Q \ Q \ D \ D \ D$	\mathbb{D} \mathbb{N} \mathbb{N} \mathbb{N} \mathbb{Q}	
6.	180	7. 55		

Home Link 10+3

\$0.06; \$0.50; \$1.30; \$1.50; \$3.36
 303
 4. 197

Home Link 10+4

1. 1.09; 2	.5; 0.98; 3.18	; 0.06	
3. 76	4. 72	5. 44	6. 18

Home Link 10+5

1. \$0.70	2. \$2.60	3. \$1.00
4. \$1.30	5. \$4.00	6. \$1.20
7. \$2.30	8. \$1.30 +	\$0.50 = \$1.80
9. \$0.80 +	\$0.40 = \$1.	20
10. \$0.70 +	\$0.90 = \$1.	60
11. \$1.40 +	\$0.80 = \$2.	20

Home Link 10+7

1. 17 sq cm	2. 23 cm ²	3. 10 square cm
4. 9 cm ²	5. 85	6. 29

Home Link 10+8

1. ④62	2. <u>1</u> ,③26	3. <u>5</u> ,@06	4. ⑧69
5. <u>2</u> ,304	6. <u>4</u> , 5 67	9. 1,183	10. 1,204
11. 158	12. 188	13. 29	

Home Link 10+9

- **1.** 0; 100; 200; 300; 400; 500; 600; 700; 800; 900; 1,000
- **2.** 0; 1,000; 2,000; 3,000; 4,000; 5,000; 6,000; 7,000; 8,000; 9,000; 10,000

3.	Number	10 More	100 More	1,000 More
	32	42	/32	1,032
	146	156	246	1,146
	309	319	409	1,309
	1,468	1,478	1,568	2,468
	10,037	10,047	10,137	11,037

Home Link 10+10

3. 72,469	4. 72,56	9; 75,469; 72	,369; 69,469
5. 76	6. 49	7. 225	8. 170

Home Link 10+11

1. 9**2.** 15**3.** 13**4.** 6**5.** 13 - (9 + 2) = 2**6.** (28 - 8) - 4 = 16**7.** (150 - 70) - 40 = 40**8.** 800 - (200 + 300) = 300

9. 15 $25 (15 \pm 5)$ (25 - 15) + 5 (17 - 9) + 7 $17 (9 \pm 7)$ (3 + 6) + 6 3 + (6 + 6)10. 100 (50 + 5)(400)

10	
50 + 150) - 100	
50 + (150 - 100)	
100 = (300 = 200)	
400 - 300) + 200	

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