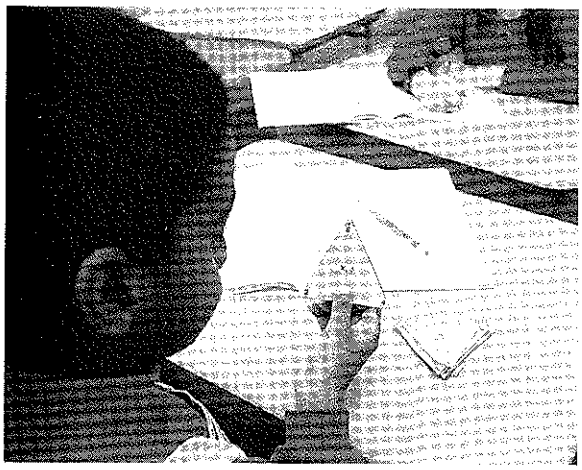
Name Date Time

HOME LINK 1•1

Unit 1: Family Letter

Introduction to Third Grade Everyday Mathematics®



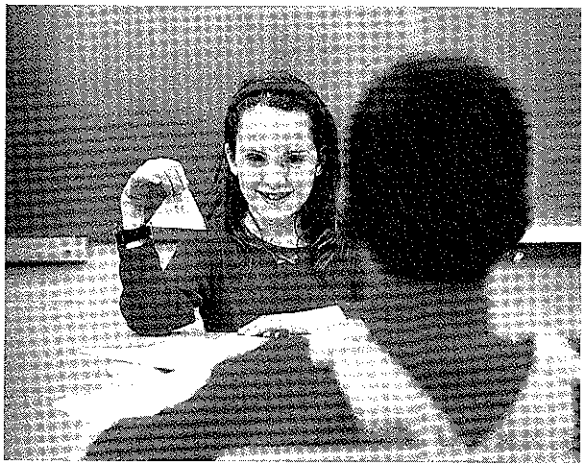
Welcome to *Third Grade Everyday Mathematics*. It is part of an elementary school mathematics curriculum developed by the University of Chicago School Mathematics Project. *Everyday Mathematics* offers children a broad background in mathematics.

Several features of the program are described below to help familiarize you with the structure and expectations of *Everyday Mathematics*.

A problem-solving approach based on everyday situations By making connections between their own knowledge and their experiences, both in school and outside of school, children learn basic math skills in meaningful contexts so that the mathematics becomes real.

Frequent practice of basic skills Instead of practice presented in a single, tedious drill format, children practice basic skills in more engaging ways. In addition to completing daily review exercises covering a variety of topics, children work with patterns on a number grid, and solve addition and subtraction fact families in different formats. Children will also play games that are specifically designed to develop basic skills.

An instructional approach that revisits concepts regularly To enhance the development of basic skills and concepts, children regularly revisit concepts and repeatedly practice skills encountered earlier. The lessons are designed to build on previously learned concepts and skills throughout the year instead of treating them as isolated bits of knowledge.



A curriculum that explores mathematical content beyond basic arithmetic Mathematics standards around the world indicate that basic arithmetic skills are only the beginning of the mathematical knowledge children will need as they develop critical thinking skills. In addition to basic arithmetic, *Everyday Mathematics* develops concepts and skills in the following topics—number and numeration; operations and computation; data and chance; geometry; measurement and reference frames; and patterns, functions, and algebra.

Third Grade Everyday Mathematics emphasizes the following content:

Number and Numeration Counting patterns; place value; reading and writing whole numbers through 1,000,000; fractions, decimals, and integers

Operations and Computation Multiplication and division facts extended to multidigit problems; working with properties; operations with fractions and money

Data and Chance Collecting, organizing, and displaying data using tables, charts, and graphs; using basic probability terms

Geometry Exploring 2- and 3-dimensional shapes and other geometric concepts

Measurement Recording equivalent units of length; recognizing appropriate units of measure; finding the areas of rectangles by counting squares

Reference Frames Using multiplication arrays, coordinate grids, thermometers, clocks, calendars; and map scales to estimate distances

Patterns, Functions, and Algebra Finding patterns on the number grid; solving Frames-and-Arrows puzzles having two rules; completing variations of "What's My Rule?" activities; exploring the relationship between multiplication and division; using parentheses in writing number models; naming missing parts of number models

Everyday Mathematics will provide you with ample opportunities to monitor your child's progress and to participate in your child's mathematics experiences.

Throughout the year, you will receive Family Letters to keep you informed of the mathematical content your child will be studying in each unit. Each letter will include a vocabulary list, suggested Do-Anytime Activities for you and your child, and an answer guide to selected Home Link (homework) activities.

You will enjoy seeing your child's confidence and comprehension soar as he or she connects mathematics to everyday life. We look forward to an exciting year!

Routines, Review, and Assessment

The first purpose of Unit 1 is to establish routines that children will use throughout the school year. The second purpose is to review and extend mathematical concepts that were developed in previous grades.

In Unit 1, children will look for examples of numbers for the Numbers All Around Museum. Examples of numbers might include identification numbers, measures, money, telephone numbers, addresses, and codes. Children will also look at number patterns in a problem-solving setting by using number-grid puzzles and Frames-and-Arrows diagrams. (*See examples on the next page.*)

Throughout Unit 1, children will use numbers within the context of real-life situations. After reviewing place-value concepts, children will work with money and pretend to purchase items from a vending machine and a store. The emphasis on applying numbers to the real world is also reflected in the yearlong Length-of-Day Project, a weekly routine that involves collecting, recording, and graphing sunrise/sunset data.

Vocabulary

Important terms in Unit 1:

digits Any of the symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 in the base 10 numeration system.

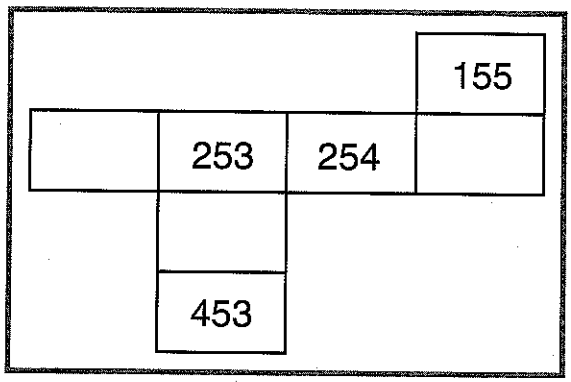
estimate An answer close to, or approximating, an exact answer.

tool kits In *Everyday Mathematics,* a bag or box containing a calculator, measuring tools, and manipulatives often used by students of the program.

number grid In *Everyday Mathematics,* a table in which consecutive numbers are arranged, usually in 10 columns per row. A move from one number to the next within a row is a change of 1; a move from one number to the next within a column is a change of 10.

									0
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

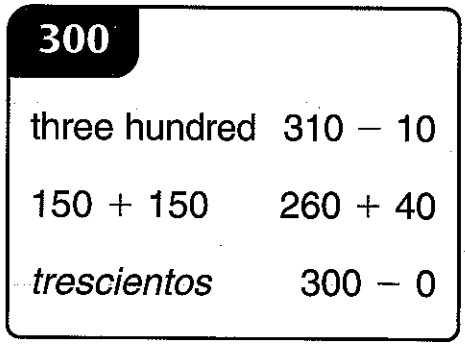
number-grid puzzle In *Everyday Mathematics,* a piece of the number grid in which some, but not all, of the numbers are missing. Children use number-grid puzzles to practice place-value concepts.



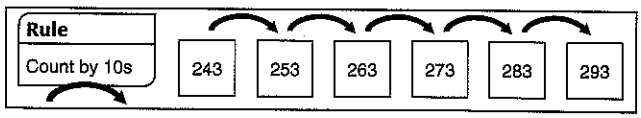
range The difference between the *maximum* and the *minimum* in a set of data. Used as a measure of the spread of data.

mode The value or values that occur most often in a set of data.

name-collection box In *Everyday Mathematics,* a diagram that is used for collecting equivalent names for a number.



Frames-and-Arrows In *Everyday Mathematics,* diagrams consisting of frames connected by arrows used to represent number sequences. Each frame contains a number and each arrow represents a rule that determines which number goes in the next frame. There may be more than one rule, represented by different colored arrows.



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 1•1

1. Answers vary **2.** 7; 7; 7; 7

Home Link 1•2

1. 21; 41 **2.** 164; 166; 184; 186
3. Sample answers: 97; 98; 99; 100; 108; 119; 127; 128; 129; 130
4. 1,372; 1,383; 1,392; 1,393; 1,394

Home Link 1•3

Sample answers:

1. ②, 4 ~~6~~ 7 **2.** 2,567 **3.** 2,367 **4.** 899; 908; 910
5. 1,044; 1,055; 1,065 **6.** 9 **7.** 4 **8.** 9 **9.** 5

Home Link 1•4

1. Answers vary. **2.** 8:00 **3.** 3:30 **4.** 6:15
5. 11:45 **6.** 7:10 **7.** 5:40 **8.** Answers vary.

Home Link 1•5

1.

Time Spent Watching TV	
Hours	Children
0	/
1	//
2	//
3	////
4	/
5	/

2. 0 **3.** 5 **4.** 5 **5.** 3 **6.** 3

Home Link 1•6

1.

18	Sample answers:
9 + 9	2 × 9
6 + 6 + 6	~~////-////-////~~
dieciocho	4 × 5 − 2 36 ÷ 2
number of days in two weeks + 4 days	

2.

12	~~////-////~~ one dozen
	7 + 5
	number of months in 1 year
	15 − 3 10 + 2
	~~10~~ ~~9~~

3. Answers vary.

Home Link 1•7

Sample answers:

1. sure to happen **2.** sure not to happen
3. may happen, but not sure
4. may happen, but not sure **5.** 7 **6.** 3
7. 4 **8.** 7

Home Link 1•8

1.

131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180

2. 154; 23 **3.** 148; 29 **4.** 22
5. Sample answer: I counted 2 tens from 180 and then 2 ones. **6.** 6 **7.** 7 **8.** 13 **9.** 13

Home Link 1•9

1. , **2.** Answers vary. **3.** 3 **4.** 3 **5.** 5 **6.** 3

Home Link 1•10

5. 6; 6; 5; 10 **6.** 6; 5; 2; 8

Home Link 1•11

3. 4 **4.** 11 **5.** 4 **6.** 11

Home Link 1•12

1. Rule +3¢ → 12¢, 15¢, 18¢, 21¢, 24¢, 27¢

2. Rule −100 → 1,000, 900, 800, 700, 600, 500

3. Rule +6 → 24, 30, 36, 42, 48, 54

4. 1.46 **5.** 0.87 **6.** 12.06
7. Sample answers: 3Ⓠ1Ⓓ4Ⓟ; 2Ⓠ3Ⓓ1Ⓝ4Ⓟ

Home Link 1•13

4. 4 **5.** 4 **6.** 7 **7.** 7

Name Date Time

HOME LINK 1•14

Unit 2: Family Letter

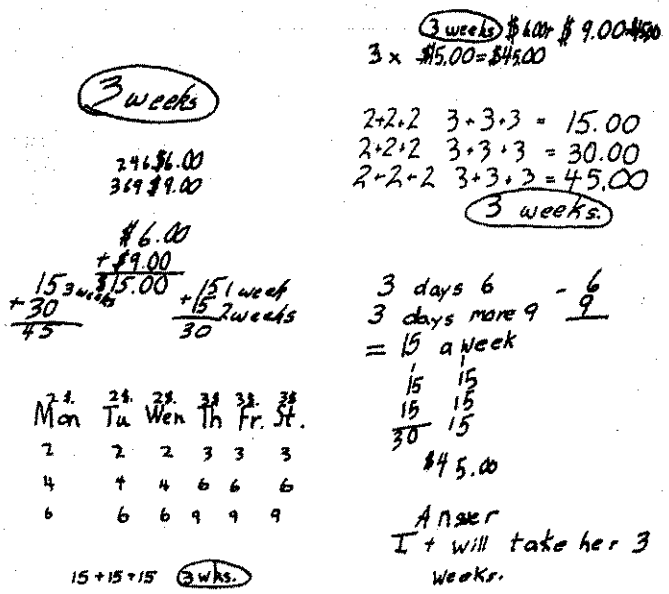
Adding and Subtracting Whole Numbers

Unit 2 will focus on addition and subtraction of whole numbers, emphasizing problem-solving strategies and computational skills. In *Second Grade Everyday Mathematics*, children used shortcuts, fact families, Fact Triangles, and games to help them learn basic addition and subtraction facts. Such devices will continue to be used in third grade. Knowledge of the basic facts and their extensions is important. Knowing that $6 + 8 = 14$, for example, makes it easy to solve such problems as $56 + 8 = ?$ and $60 + 80 = ?$ Later, knowing that $5 \times 6 = 30$ will make it easy to solve $5 \times 60 = ?$, $50 \times 60 = ?$, and so on.

In Unit 2, children will learn new methods for solving addition and subtraction problems. *Everyday Mathematics* encourages children to choose from any of these methods or to invent their own computation methods. When children create—and share—their own ways of doing operations instead of simply learning one method, they begin to realize that any problem can be solved in more than one way. They are more willing and able to take risks, think logically, and reason analytically.

Blair Chewning, a teacher in Richmond, Virginia, gave her Everyday Mathematics *students this problem to solve. Here are just a few of the strategies her students used.*

Jill needs to earn $45.00 for a class trip. She earns $2 per day on Mondays, Tuesdays, and Wednesdays. She earns $3 each day on Thursdays, Fridays, and Saturdays. She does not work on Sundays. How many weeks will it take her to earn $45?



Finally, Unit 2 introduces another yearlong project—the National High/Low Temperatures Project. Children will calculate, record, and graph differences in temperatures from cities around the United States.

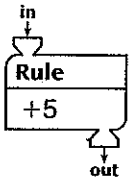
Vocabulary

ballpark estimate A rough estimate. A ballpark estimate can be used when you don't need an exact answer or to check if an answer makes sense.

fact family A collection of 4 related addition and subtraction facts, or multiplication and division facts, relating 3 numbers.

$3 + 8 = 11$
$8 + 3 = 11$
$11 - 3 = 8$
$11 - 8 = 3$

function machine In *Everyday Mathematics,* an imaginary machine that processes numbers and pairs them with output numbers according to a set rule. A number (input) is put into the machine and is transformed into a second number (output) through the application of the rule.



in	out
3	8
5	10
8	13
10	15
16	21

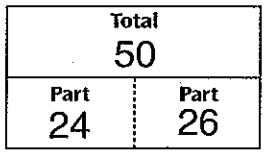
"What's My Rule?" problems A problem in which number pairs are related to each other according to the same rule. Sometimes the rule and one number in each pair are given, and the other number is to be found. Sometimes the pairs are given and the rule is to be found.

number family Same as a fact family.

number model A number sentence that shows how the parts of a number story are related. For example, $5 + 8 = 13$ models the number story: *5 children skating. 8 children playing ball. How many children in all?*

parts-and-total diagram A diagram used to represent problems in which two or more quantities are combined to form a total quantity. Sometimes the parts are known and the total is unknown. Other times the total and one or more parts are known, but one part is unknown.

For example, the parts-and-total diagram here represents this number story: *Leo baked 24 cookies. Nina baked 26 cookies. How many cookies in all?*

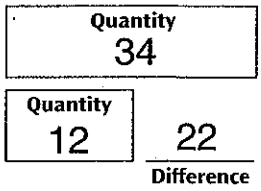


change diagram A diagram used to represent addition or subtraction problems in which a given quantity is increased or decreased. The diagram includes the starting quantity, the ending quantity, and the amount of the change.

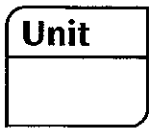
For example, the change diagram here represents this subtraction problem: *Rita had $28 in her wallet. She spent $12 at the store. How much money is in Rita's wallet now?*

comparison diagram A diagram used to represent problems in which two quantities are given and then compared to find how much more or less one quantity is than the other.

For example, the comparison diagram here represents this problem: *34 children ride the bus to school. 12 children walk to school. How many more children ride the bus?*



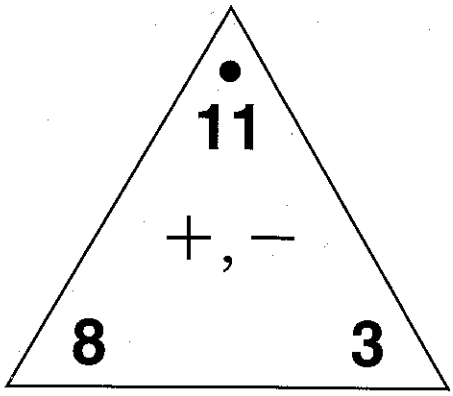
unit box In *Everyday Mathematics,* a box displaying the unit for numbers in the problems at hand.



Unit box

Math Tools

Your child will be using **Fact Triangles** to practice and review addition and subtraction facts. Fact Triangles are a new and improved version of flash cards; the addition and subtraction facts shown are made from the same three numbers, and this helps your child understand the relationships among those facts.



Do-Anytime Activities

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

1. Review addition and subtraction facts. Make +,− Fact Triangles for facts that your child needs to practice.

2. Practice addition and subtraction fact extensions. *For example:*

6 + 7 = 13	13 − 7 = 6
60 + 70 = 130	23 − 7 = 16
600 + 700 = 1,300	83 − 7 = 76

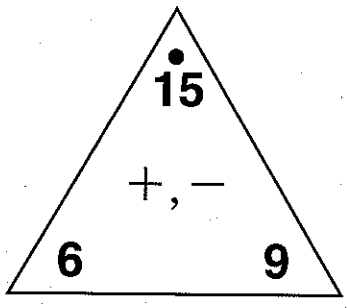
3. When your child adds or subtracts multidigit numbers, talk about the strategy that works best. Try not to impose the strategy that works best for you! Here are some problems to try:

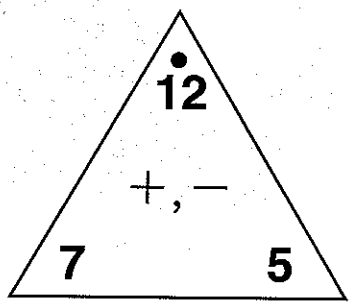
267 + 743 = _____

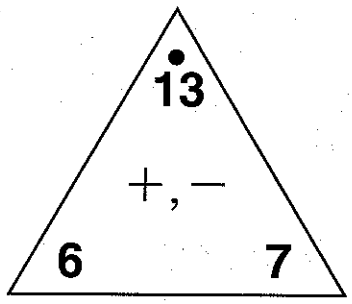
794 − 554 = _____

_____ = 851 + 697

840 − 694 = _____







As You Help Your Child with Homework

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Home Link 2•1

1. 9 + 6 = 15; 6 + 9 = 15; 15 − 9 = 6; 15 − 6 = 9

2. 25 + 50 = 75; 50 + 25 = 75; 75 − 25 = 50; 75 − 50 = 25 **3.** Answers vary.

4. 10 **5.** 12 **6.** 4 **7.** 10

Home Link 2•2

1. 16; 26; 76; 106 **2.** 12; 22; 62; 282

3. 8; 28; 58; 98 **4.** 5; 15; 115; 475

5. 13; 130; 1,300; 13,000

Home Link 2•3

1.

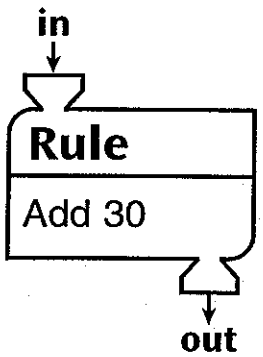
in	out
14	7
7	0
12	5
15	8
10	3
21	14

2.

in	out
7	16
9	18
37	46
77	86
49	58

Answers vary.

3.



in	out
70	100
20	50
30	60
90	120
50	80

Answers vary.

Home Link 2•4

1. 55 minutes; 25 + 30 = 55

2. 700 cans; 300 + 400 = 700

Home Link 2•5

1. $9; 25 − 16 = 9 or 16 + 9 = 25 **2.** $49; 35 + 14 = 49

Home Link 2•6

1. $29; 42 − 13 = 29 or 13 + 29 = 42 **2.** 9 days; 28 − 19 = 9 or 19 + 9 = 28

3. 15 children; 40 − 25 = 15

Home Link 2•7

1. 337 **2.** 339 **3.** 562

4. 574 **5.** 627 **6.** 1,214

Home Link 2•8

1. 194 **2.** 202 **3.** 122

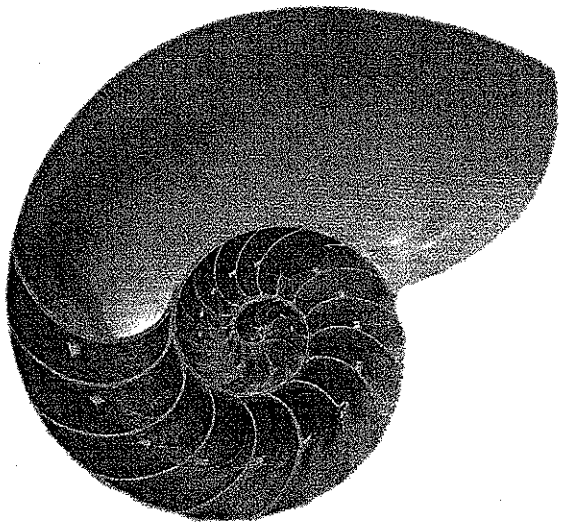
4. 206 **5.** 439 **6.** 487

Home Link 2•9

1. 38 **2.** 213 **3.** 40

4. 70 **5.** 915 **6.** 55; 18 + 15 + 22 = 55

7. 19; 17 + 22 + 19 = 58



Name Date Time

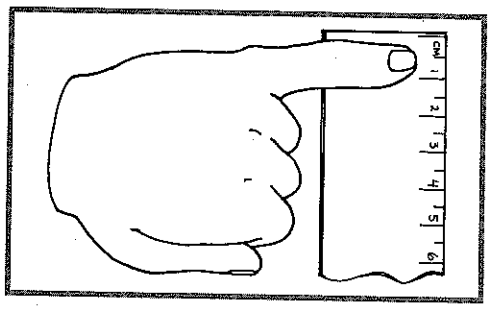
HOME LINK 2·10

Unit 3: Family Letter

Linear Measures and Area

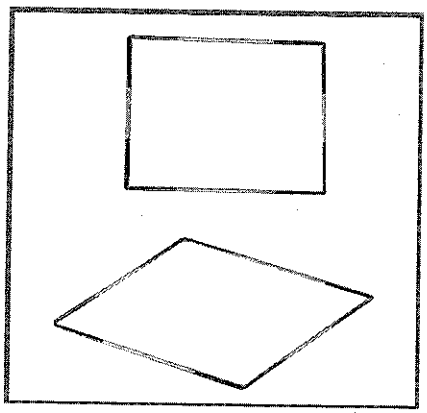
In Unit 3, children will develop their measurement sense by measuring lengths with standard units—in both the **U.S. customary system** and the **metric system.**

Children will practice reading a ruler to the nearest inch, nearest $\frac{1}{2}$ inch, nearest $\frac{1}{4}$ inch, and nearest centimeter as they measure a variety of objects, including parts of their own bodies, such as their hand spans, wrists, necks, and heights. In addition to the inch and centimeter, children will also measure with other standard units, such as the foot, yard, and meter. Children will begin to use certain body measures or the lengths of some everyday objects as **personal references** to estimate the lengths of other objects or distances. For example, a sheet of notebook paper that is about 1 foot long can help children estimate the length of a room in feet.



Using personal references: The width of my little finger is about one centimeter.

The concept of **perimeter** is also investigated in this unit. Children will use straws and twist-ties to build **polygons,** or 2-dimensional figures having connected sides. Then children will measure the distance around each polygon to find the perimeter.



Children will also discover the meaning of **area** by tiling small rectangles with blocks and counting how many blocks cover the rectangles. Children see how to calculate area by tiling larger surfaces, such as tabletops and floors, with square feet and square yards.

In the last part of this unit, children will explore the **circumference** and **diameter** of circles. They will learn the *about 3 times* rule—that the circumference of a circle is a little more than 3 times the length of its diameter.

Please keep this Family Letter for reference as your child works through Unit 3.

Vocabulary

Important terms in Unit 3:

unit An agreed-upon unit of measure, for example foot, pound, gallon, meter, kilogram, liter.

length The distance between two points.

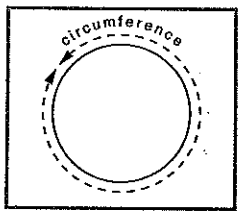
U.S. customary system The measurement system used in the United States. For example, inches, feet, yards, and miles are used to measure length.

metric system of measurement A measurement system based on the base-ten numeration system. It is used in most countries around the world. For example, millimeters, centimeters, meters, and kilometers are used to measure length.

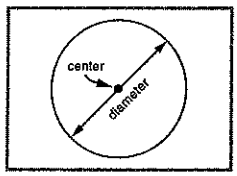
benchmark A well-known count or measure that can be used to check whether other counts, measures, or estimates make sense. For example, a benchmark for land area is that a football field is about one acre. A benchmark for length is that the width of a man's thumb is about one inch. Benchmarks are also called *personal-measurement references.*

perimeter The distance around the boundary of a 2-dimensional shape. The perimeter of a circle is called its *circumference.* A formula for the perimeter P of a rectangle with length l and width w is $P = 2 \times (l + w)$.

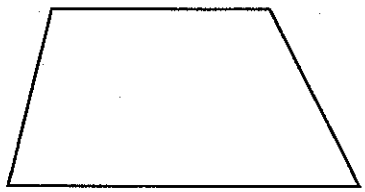
circumference The perimeter of a circle.



diameter A line segment that passes through the center of a circle or sphere. The length of such a segment.



polygon A 2-dimensional figure formed by 3 or more line segments (sides) that meet only at their endpoints (vertices) to make a closed path. The line segments of a polygon may not cross.



a polygon

tiling The covering of a surface with shapes so that there are no gaps or overlaps.

area The amount of surface inside a 2-dimensional figure. Area is measured in square units, such as square inches or square centimeters.

square unit A unit used to measure area; a square that measures 1 inch, 1 centimeter, 1 yard, or 1 other standard measure of length on each side.

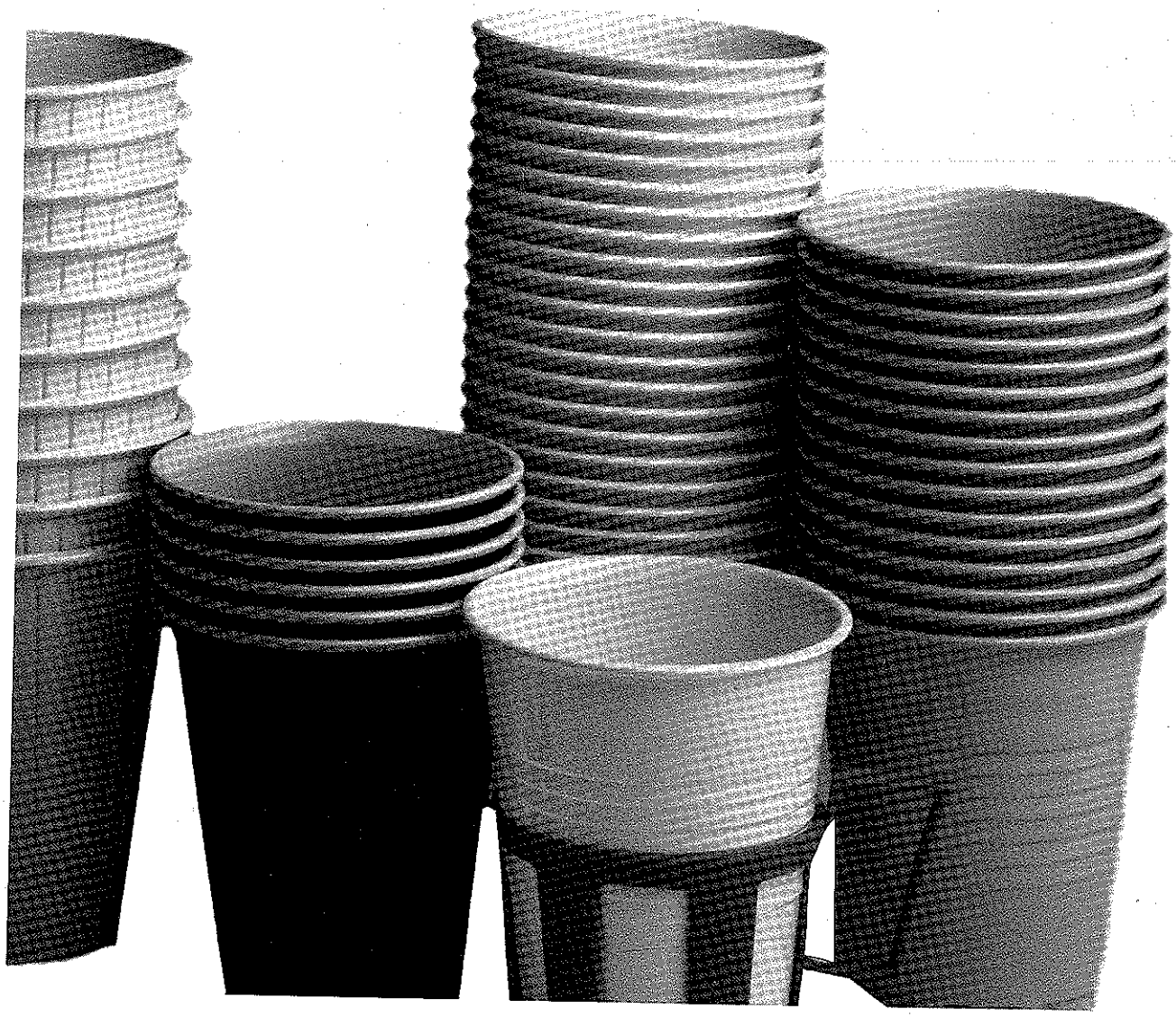
1 square centimeter

1 square inch

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. Encourage your child to find some personal references for making several measurements of length at home.
2. Practice using the personal references by *estimating* some lengths, and then practice using a ruler by *measuring* the actual lengths.
3. Practice finding perimeters of objects and circumferences of circular objects around your home.



As You Help Your Child with Homework

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Home Link 3•4

2. perimeter of polygon A = 20 cm

perimeter of polygon B = 20 cm

3. a. 12 ft **3. b.** 60 in.

Home Link 3•5

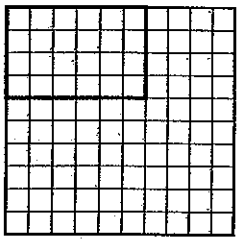
1. 6 **2.** 2 **3.** 4 **4.** 3

5. 3 **6.** 95 **7.** 62

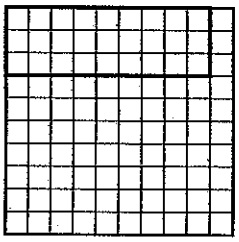
Home Link 3•7

1. Area = 24 square units **2.** Area = 27 square units

Sample answer:



Sample answer:



3. This is a 2-by-6 rectangle. Area = 12 square units

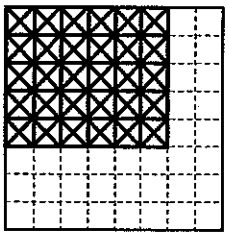
4. This is a 5-by-4 rectangle. Area = 20 square units

5. 307 **6.** 119

Home Link 3•8

1. 80 tiles **2.** $160

3.



4. 30 plants

5. 489

6. 673

7. 307

Building Skills through Games

In Unit 3, your child will practice addition skills by playing the following games. For detailed instructions, see the *Student Reference Book.*

Addition Top-It

Each player turns over two cards and calls out their sum. The player with the higher sum then takes all the cards from that round.

Subtraction Top-It

Each player turns over two cards and calls out their difference. The player with the larger difference then takes all the cards from that round.

Name Date Time

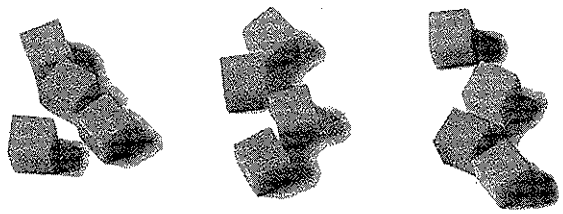
HOME LINK 3•10

Unit 4: Family Letter

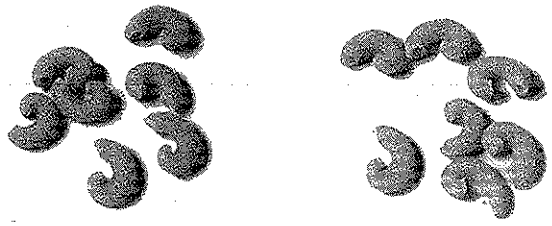
Multiplication and Division

Unit 4 focuses on the most common uses of multiplication and division—problems that involve equal sharing and equal grouping. In *Second Grade Everyday Mathematics,* children were exposed to multiplication and division number stories and multiplication and division facts. To solve multiplication and division number stories, children will refer to familiar strategies introduced in second grade:

◆ **Acting out problems using concrete objects, such as counters** (below)



$3 \times 4 = 12$



$2 \times 7 = 14$

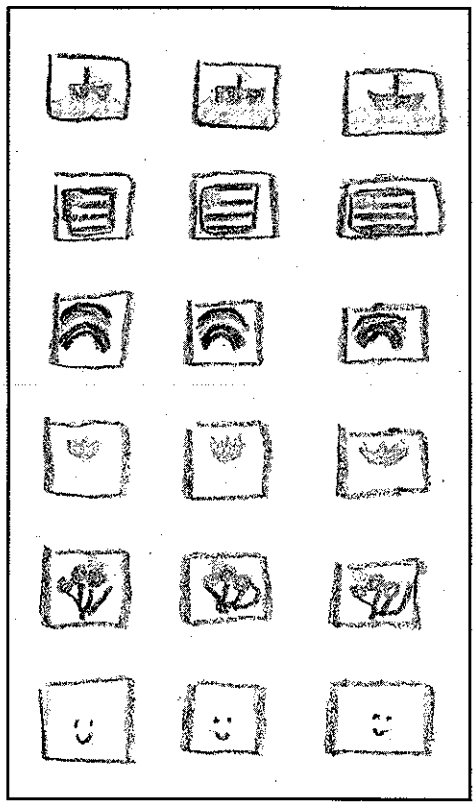
◆ **Using diagrams to sort out quantities** (below)

children	pennies per child	pennies in all
4	?	28

◆ **Using number models to represent solution strategies** (below)

Problem:	Solution strategies:
Each child has 2 apples. There are 16 apples. How many children have apples?	*2 × ? = 16, or I know that 16 ÷ 2 = 8. If there are 16 apples and each child has 2, then there must be 8 children.*

◆ **Representing problems with pictures and arrays** (below)



A sheet of stamps has 6 rows. Each row has 3 stamps. How many stamps are on a sheet?

$6 \times 3 = 18$

Vocabulary

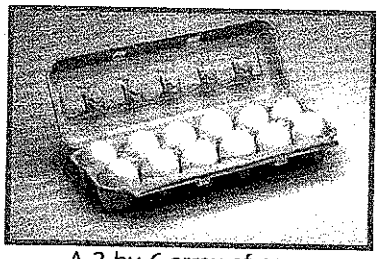
Important terms in Unit 4:

multiples of a number The product of the number and a counting number. For example, multiples of 2 are 2, 4, 6, and 8....

multiplication/division diagram In *Everyday Mathematics*, a diagram used to represent problems in which the total number of objects in several equal groups is being considered. The diagram has three parts: number of groups, number in each group, and total number. For example, the multiplication/division diagram here represents this number story: There are 3 boxes of crayons. Each box has 8 crayons. There are 24 crayons in all.

boxes	crayons per box	crayons
3	**8**	**24**

rectangular array A group of objects placed in rows and columns.



A 2-by-6 array of eggs

factor Each of the two or more numbers in a product.

In **4 × 3 = 12**, **4** and **3** are the **factors**, and **12** is the **product.**

product The result of multiplying two numbers.

equal groups Sets with the same number of elements, such as tables with 4 legs, rows with 6 chairs, boxes of 100 paper clips, and so on.

dividend The number in division that is being divided.

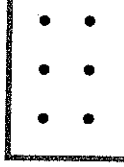
divisor In division, the number that divides another number, the *dividend*.

quotient The result of division.

In **28 ÷ 4 = 7**, **28** is the **dividend**, **4** is the **divisor**, and 7 is the **quotient.**

remainder An amount left over when one number is divided by another number. In the division number model 16 ÷ 3 → 5 R1, the remainder is 1.

square number The product of a number multiplied by itself; any number that can be represented by a square array of dots or objects. A square array has the same number of rows as columns.



3 × 3 = 9
The number 9 is a **square number.**

Building Skills through Games

In Unit 4, your child will practice division and multiplication by playing the following games. For detailed instructions, see the *Student Reference Book*.

Division Arrays

Players make arrays with counters. They use number cards to determine the number of counters and a toss of a die to establish the number of rows.

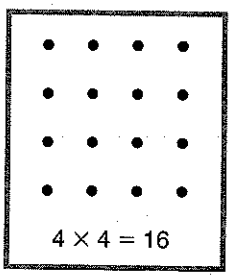
Beat the Calculator

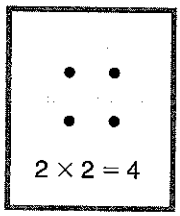
A Calculator (a player who uses a calculator) and a Brain (a player who solves the problem without a calculator) compete to see who will be first to solve multiplication problems.

Do-Anytime Activities

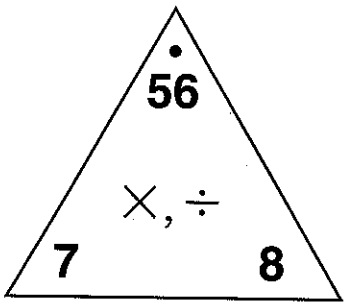
To work with your child on concepts taught in this unit and in previous units, try these interesting and rewarding activities:

1. Together with your child, sort objects into equal groups. Discuss what you could do with any leftover objects.
2. Review multiplication-fact shortcuts:
   - **turn-around facts** The order of the factors does not change the product. Thus, if you know $3 \times 4 = 12$, you also know $4 \times 3 = 12$.
   - **multiplication by 1** The product of 1 and another number is always equal to the other number. For example, $1 \times 9 = 9$; $1 \times 7 = 7$.
   - **multiplication by 0** The product of 0 and another number is always 0. For example, $4 \times 0 = 0$; $0 \times 2 = 0$.
   - **square numbers** Arrays for numbers multiplied by themselves are always squares. For example, 2×2 and 4×4 are square numbers.





3. Use the ×, ÷ Fact Triangles (a set will be sent home later) to practice the basic facts. Act as a partner by covering one number on the card and then asking your child to create a multiplication or division number model using the other two numbers.



$7 \times 8 = 56$
$8 \times 7 = 56$
$56 \div 8 = 7$
$56 \div 7 = 8$

4. Write any number–for example, 34,056. Then ask questions like the following: How many are in the thousands place? *(4)* What is the value of the digit 5? *(50)*
5. Ask questions like the following:
   Is $467 + 518$ more or less than 1,000? *(less)* Is $754 - 268$ more or less than 500? *(less)*

As You Help Your Child with Homework

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

Home Link 4•1

1. 30 apples

Home Link 4•2

1. 24 counters **2.** 24 counters

3. 24 counters **4.** 358

5. 204 **6.** 428

Home Link 4•3

1. 5 counters per person; 0 counters remaining

2. 2 counters per person; 5 counters remaining

3. 4 weeks in January; 3 days remaining

4. 4 teams; 2 children remaining

5. 2 pencils; 4 pencils left over

6. 11 jelly beans; 0 jelly beans left over

7. 577 **8.** 31 **9.** 801

Home Link 4•4

1. 6 marbles; 0 marbles left over

2. 2 cookies; 1 cookie left over

3. 4 complete rows; 6 stamps left over

Home Link 4•5

1. 10; 10 **2.** 15; 15 **3.** 20; 20 **4.** 9; 9

5. 90; 90 **6.** 365; 365 **7.** 0; 0 **8.** 0; 0

9. 0; 0 **10.** 20 **11.** 20 **12.** 18

13. 14 **14.** 15 **15.** 50

Home Link 4•6

1. 10; 10; 10; 10 **2.** 12; 12; 12; 12

3. $2 \times 7 = 14$; $7 \times 2 = 14$;
$14 \div 2 = 7$; $14 \div 7 = 2$

4. $2 \times 8 = 16$; $8 \times 2 = 16$;
$16 \div 2 = 8$; $16 \div 8 = 2$

5. $5 \times 4 = 20$; $4 \times 5 = 20$;
$20 \div 5 = 4$; $20 \div 4 = 5$

6. $10 \times 6 = 60$; $6 \times 10 = 60$;
$60 \div 10 = 6$; $60 \div 6 = 10$

Home Link 4•7

1. $5 \times 6 = 30$; $6 \times 5 = 30$;
$30 \div 6 = 5$; $30 \div 5 = 6$

2. $8 \times 3 = 24$; $3 \times 8 = 24$;
$24 \div 3 = 8$; $24 \div 8 = 3$

3. $2 \times 9 = 18$; $9 \times 2 = 18$;
$18 \div 2 = 9$; $18 \div 9 = 2$

4. $4 \times 7 = 28$; $7 \times 4 = 28$;
$28 \div 7 = 4$; $28 \div 4 = 7$

5. $9 \times 8 = 72$; $8 \times 9 = 72$;
$72 \div 9 = 8$; $72 \div 8 = 9$

6. $6 \times 7 = 42$; $7 \times 6 = 42$;
$42 \div 7 = 6$; $42 \div 6 = 7$

Home Link 4•8

1. 7; 5; $7 \times 5 = 35$; 35 square units

2. 6; 7; $6 \times 7 = 42$; 42 square units

3. $4 \times 8 = 32$

4. $9 \times 5 = 45$

Home Link 4•9

The following answers should be circled:

1. more than the distance from Chicago to Dallas; about 2,400 miles

2. about 600 miles;
less than the distance from Chicago to Denver

3. more than the distance from New York to Chicago

4. less than the distance from Denver to Atlanta; more than the distance from New York to Portland; about 750 miles

Name Date Time

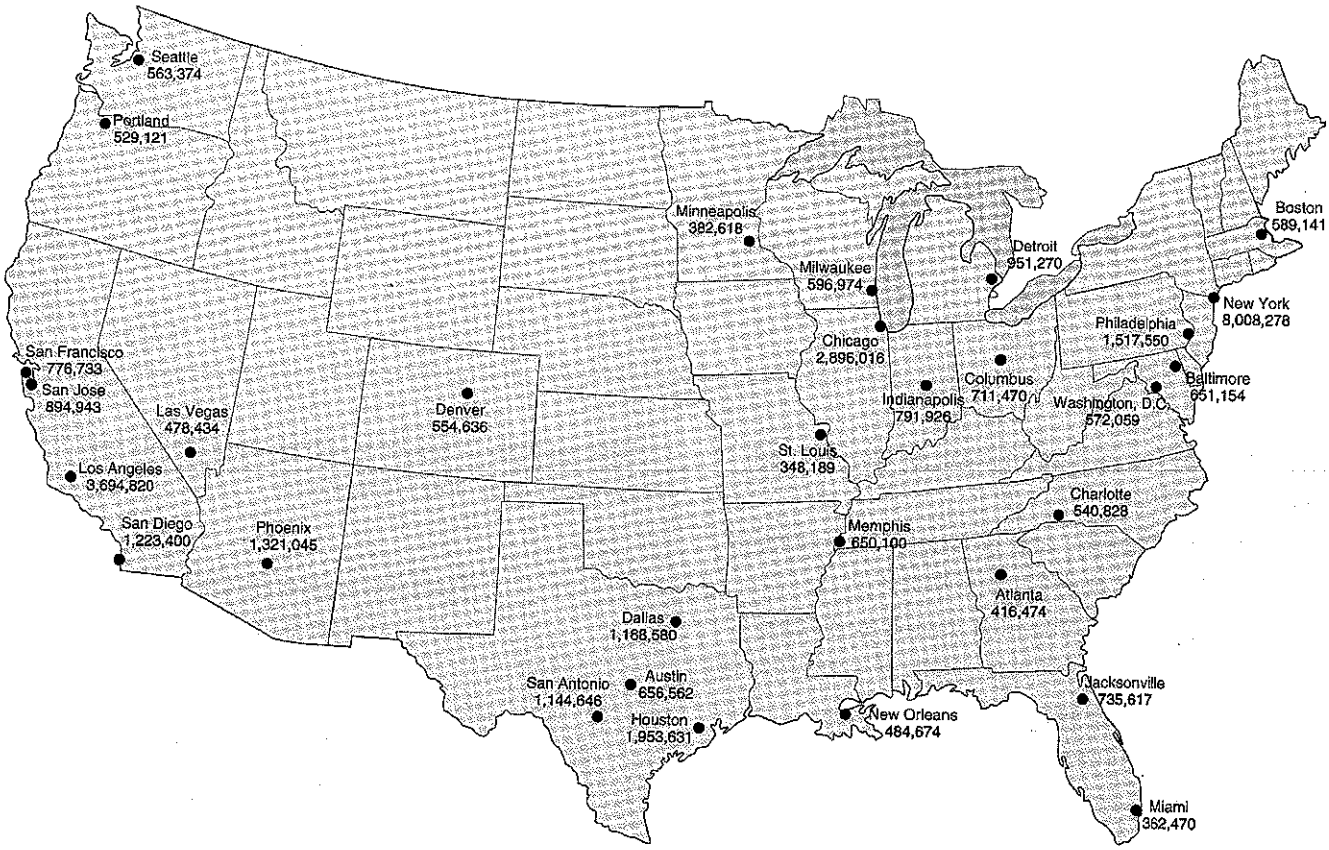
HOME LINK 4•11

Unit 5: Family Letter

Place Value in Whole Numbers and Decimals

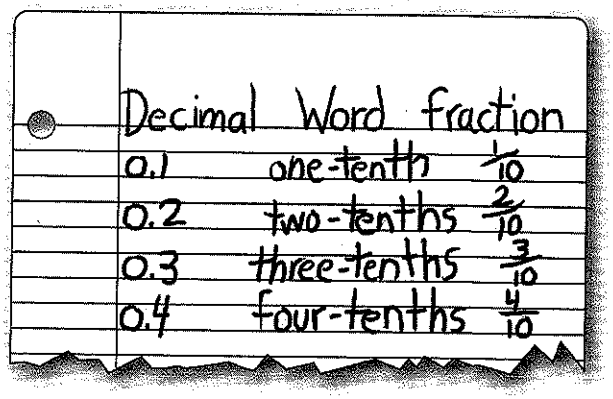
In Unit 5, children will review place value up to 5-digit whole numbers. They will read, write, compare, and order these numbers before they begin to explore larger numbers.

To understand real-life applications of larger numbers, children will study population data about U.S. cities. They will also approximate their own ages to the minute.



In second grade, children studied decimals by working with money. In this unit, they will gradually extend their knowledge of decimals in the following ways:

- through concrete models, such as base-10 blocks.
- by writing decimal values in three ways (0.1, one-tenth, $\frac{1}{10}$).
- by comparing and ordering numbers with symbols (<, >, =).



Please keep this Family Letter for reference as your child works through Unit 5.

Vocabulary

Important terms in Unit 5:

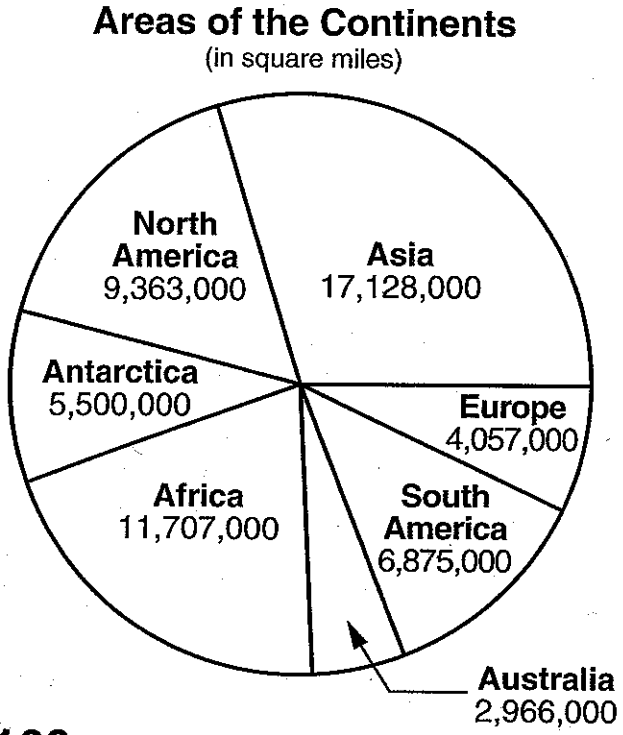
place value A system that gives a digit a value according to its position, or place, in a number. The value of each digit in a numeral is determined by its place in the numeral. This chart demonstrates the value of each digit in the numeral 4,815.904 (read as *four thousand, eight hundred fifteen, and nine hundred four thousandths*):

thousands	hundreds	tens	ones		tenths	hundredths	thousandths
4	8	1	5	.	9	0	4
Each thousand is equal to one thousand times the unit value.	Each hundred is equal to one hundred times the unit value.	Each ten is equal to ten times the unit value.	Each one is equal to the unit value.		Each tenth is equal to $\frac{1}{10}$ of the unit value.	Each hundredth is equal to $\frac{1}{100}$ of the unit value.	Each thousandth is equal to $\frac{1}{1{,}000}$ of the unit value.
4,000	800	10	5		$\frac{9}{10}$	$\frac{0}{100}$	$\frac{4}{1{,}000}$

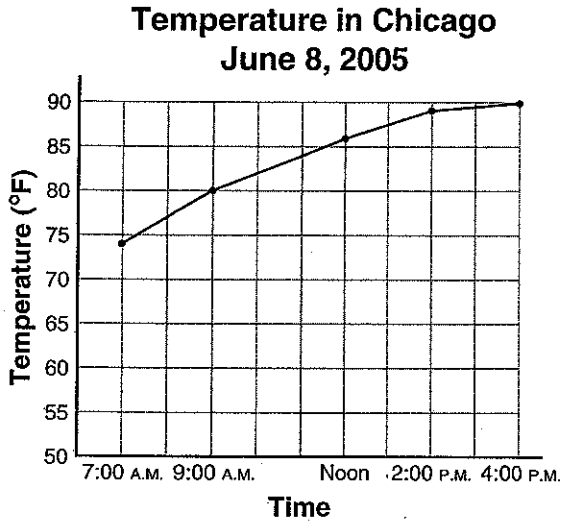
maximum The largest amount, or the greatest number in a set of data.

millimeter A metric unit of length equivalent to $\frac{1}{10}$ of a centimeter and $\frac{1}{1{,}000}$ of a meter.

pie graph A graph in which a circle is divided into regions corresponding to parts of a set of data.



line graph A graph in which data points are connected by line segments.



Do-Anytime Activities

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

1. Dictate large numbers for your child to write. *Examples:* 4,123; 10,032; 2,368,502.
2. Display similar multidigit numbers on a calculator for your child to read.
3. Together, write 5 multidigit numbers in order from smallest to largest.
4. Start at any whole number and, using a calculator, count on by increments of 0.01 or 0.1.
5. Use money on a family shopping trip; practice making change.

Building Skills through Games

In Unit 5, your child will practice numeration and computation skills by playing the following games. For detailed instructions, see the *Student Reference Book.*

Baseball Multiplication

Players use multiplication facts to score runs. Team members take turns pitching by rolling two dice to get two factors. Then players on the batting team take turns multiplying the two factors and saying the product.

Number Top-It

As players pick each card, they must decide in which place-value box (from ones to ten-thousands at first, and then on to hundred-thousands) to place the card so that they end up with the largest number.

Beat the Calculator

A Calculator (a player who uses a calculator) and a Brain (a player who solves the problem without a calculator) race to see who will be first to solve multiplication problems.

Division Arrays

Players make arrays with counters using number cards to determine the number of counters and a toss of a die to determine the number of rows.

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 5•1

1. 8,879; 8,889; 8,899; 8,909; 8,919; 8,929

2. 8,789; 8,889; 8,989; 9,089; 9,189; 9,289

3. 7,889; 8,889; 9,889; 10,889; 11,889; 12,889

Home Link 5•2

1. < **2.** > <

4. < **5.** > **6.** <

7. 3,689 **8.** 9,863 **9.** Answers vary.

10. 51,100; 52,100 **11.** 56

12. 163 **13.** 796 **14.** 484

Home Link 5•3

1. largest: 7,654,321; smallest: 1,234,567
total: 8,888,888

3. 7,037,562; 7,000,007; 4,056,211; 104,719; 42,876; 25,086; 9,603; 784

4. 42,876 **5.** 7,037,562

6. 4,056,211 **7.** 7,000,007

Home Link 5•4

1. 7 continents **2.** Asia **3.** Australia

4. Antarctica, North America, and South America

5. Europe **6.** North America

7. Africa

Home Link 5•5

3,358	5,338
3,385	5,383
3,538	5,833
3,583	8,335
3,835	8,353
3,853	8,533

Home Link 5•7

1. $\frac{3}{10}$ or $\frac{30}{100}$; 0.3 or 0.30 **2.** $\frac{9}{100}$; 0.09

3. $\frac{65}{100}$; 0.65 **4.** 0.3; 0.65; 0.65

8. 0.04, 0.53, 0.8

Home Link 5•8

1. 57 hundredths; 5 tenths 7 hundredths

2. 70 hundredths; 7 tenths 0 hundredths

3. 4 hundredths; 0 tenths 4 hundredths

4. 0.23 **5.** 8.4 **6.** 30.20 **7.** 0.05

8. 0.4; 0.5; 0.6; 0.7; 0.8; 0.9

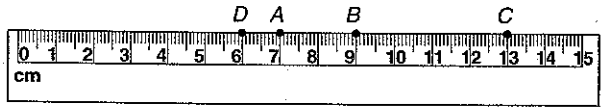
9. 0.04; 0.05; 0.06; 0.07; 0.08; 0.09

10. 503 **11.** 603

Home Link 5•9

1. 0.01; 0.02; 0.03; 0.04; 0.05; 0.06; 0.07; 0.08

2. 0.8; 0.9; 1.0; 1.1; 1.2; 1.3; 1.4



7. 27 **8.** 40 **9.** 0

10. 12 **11.** 9 **12.** 15

Home Link 5•10

1. **a.** 2 **b.** 10 **c.** 20 **d.** 100 **e.** 200 **f.** 600

2. **a.** 30 cm **b.** 0.3 m **c.** 300 mm

3. 49 **4.** 56 **5.** 63 **6.** 42

Home Link 5•11

1. < **2.** < **3.** > **4.** =

5. > **6.** < **7.** = **8.** <

9. hundredths, or 0.09 **10.** ones, or 3

11. 6.59; 6.60; 6.61 **12.** 1.03; 1.13; 1.23

13. 4.4 **14.** 4.17 **15.** 8.1 **16.** 5.53

17. 243 **18.** 782 **19.** 509

Home Link 5•12

1. 455 **2.** 455

Name Date Time

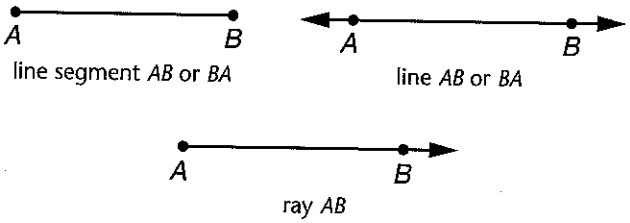
HOME LINK 5•13

Unit 6: Family Letter

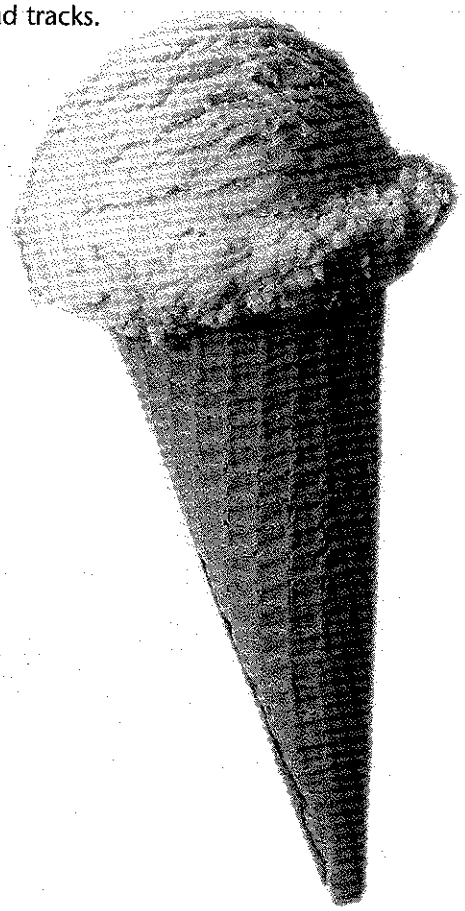
Geometry

Everyday Mathematics uses children's experiences with the everyday world to help them envision 3-dimensional (3-D) shapes. In previous grades, children were asked to identify 2-dimensional (2-D) shapes and their parts, such as sides and corners (vertices). They had several hands-on experiences with pattern blocks, geoboards, and templates. They also classified and named polygons, or closed figures consisting of line segments (sides) connected endpoint to endpoint.

In Unit 6, children will explore points, line segments, rays, lines, and the relationships among them, along with the geometric shapes that can be built from them. Children will construct angles, polygons, prisms, and pyramids.



Children will also explore similarities and differences among 3-D shapes and regular polyhedrons within the context of a Shapes Museum. They will discover real-life examples of lines that are parallel, or lines that never meet, such as railroad tracks.



There is a great deal of vocabulary involved when working with geometry. However, the emphasis in this unit is not on memorizing the vocabulary, but rather on using it to examine relationships among classifications of geometric figures.

Please keep this Family Letter for reference as your child works through Unit 6.

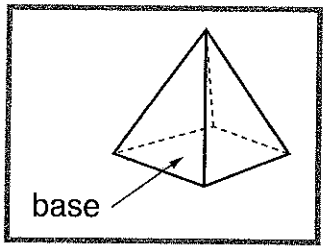
Vocabulary

Important terms in Unit 6:

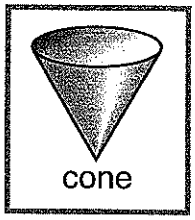
2-dimensional (2-D) shape A shape whose points are all in one plane, or flat surface, but not all on one line. A shape with length and width, but no thickness.

3-dimensional (3-D) shape A shape that does not lie completely within a plane, or flat surface; a shape with length, width, and thickness.

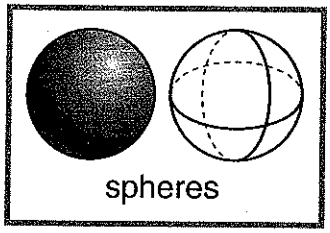
base of a 3-D shape A flat surface or face whose shape is the basis for naming some 3-dimensional objects.



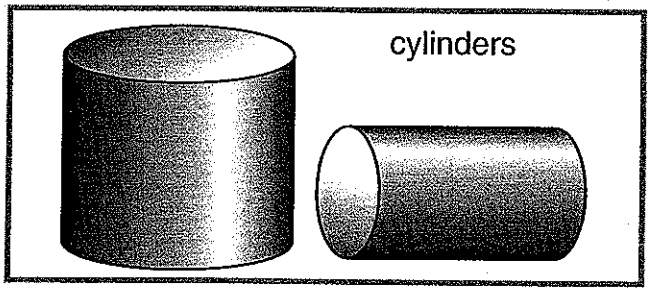
cone A 3-dimensional shape with a circular base, a curved surface, and one vertex, called the apex. An ice-cream cone is shaped like a cone.



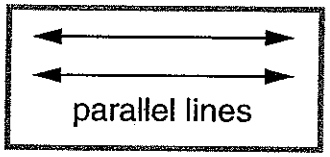
sphere A 3-dimensional shape whose curved surface is, at all points, a given distance from its center point. A ball is shaped like a sphere.



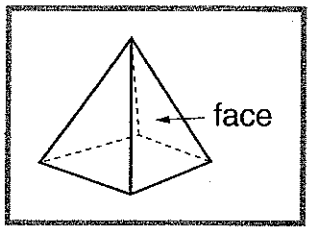
cylinder A 3-dimensional shape with two circular bases that are parallel and congruent and are connected by a curved surface. A soup can is shaped like a cylinder.



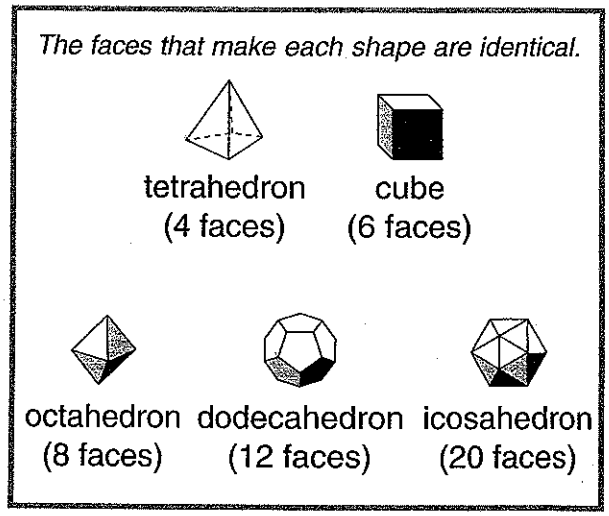
parallel Lines in a plane that never meet. Two parallel lines are always the same distance apart.



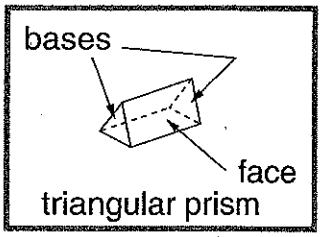
face In *Everyday Mathematics*, a flat surface on a 3-dimensional shape.



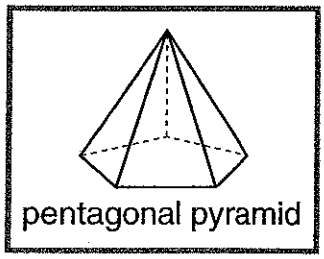
polyhedron A *3-dimensional shape* with polygons and their interiors for *faces*. Polyhedrons don't have any holes. Below are five regular polyhedrons, so called because all faces in each shape are identical.



prism A *polyhedron* with two parallel *bases* that are the same size and shape. A prism is named for the shape of its base, and the other faces are all parallelograms.

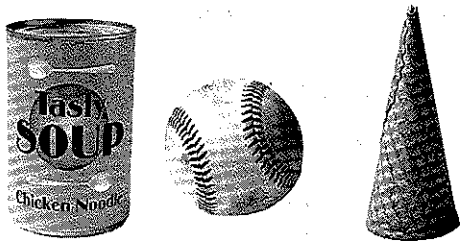


pyramid A *polyhedron* with a polygon for a *base* and the other faces are all triangles with a common vertex called the apex. A pyramid is named for the shape of its base.



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. Together, read the book *The Greedy Triangle,* by Marilyn Burns.
2. Begin a Shapes Museum at home. Label the shapes that your child collects.
3. Ask your child to identify 2-dimensional and 3-dimensional shapes inside and outside your home.
4. Measure objects to the nearest $\frac{1}{2}$ inch.

Building Skills through Games

In Unit 6, your child will practice numeration, multiplication, and geometry skills by playing the following games. For detailed instructions, see the *Student Reference Book.*

Number Top-It (Decimals)

As players pick each card, they must decide in which place-value box (from ones to thousandths) to place the card so that they end up with the largest number.

Beat the Calculator

A "Calculator" (a player who uses a calculator to solve the problem) and a "Brain" (a player who solves the problem without a calculator) race to see who will be first to solve multiplication problems.

Baseball Multiplication

Players use multiplication facts to score runs. Team members take turns "pitching" by rolling two dice to get two factors. Then players on the "batting" team take turns multiplying the two factors and saying the product.

Angle Race

Players build angles with rubber bands and "race" to see who will be first to complete the last angle exactly on the 360° mark.

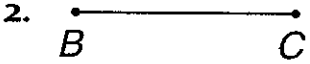
As You Help Your Child with Homework

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.

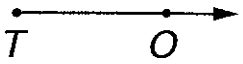
Home Link 6•1

1. b, e, d, a, e or c

2.



3.

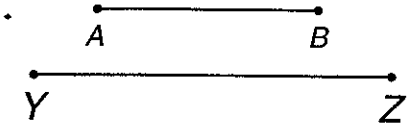


4. 568 **5.** 346

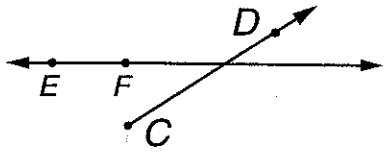
Home Link 6•2

Sample answers:

1.



2.



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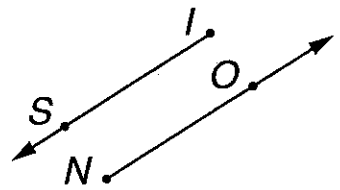
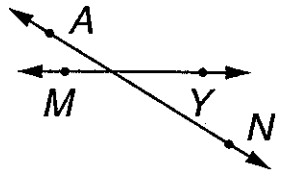
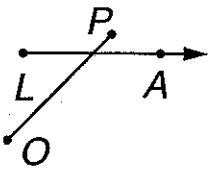


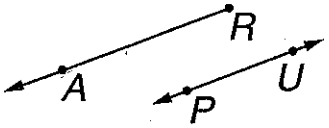
4.



5.



6.



Home Link 6•4

5. 491 **6.** 289 **7.** 9

Home Link 6•5

1. right angles; equal; parallel

2. equal; parallel

3. equal; parallel

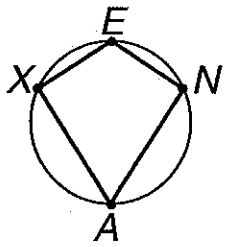
4. equal

5. 18 **6.** 12 **7.** 36

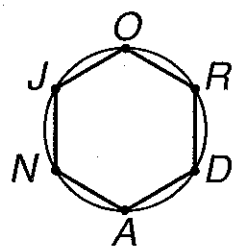
Home Link 6•6

Sample answers:

1. 4; kite; *XENA*



2. 6; hexagon; *JORDAN*



Home Link 6•8

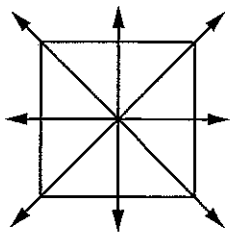
1. *A* **2.** *D* **3.** *E*

4. *C* or *D* **5.** *A* or *B*

Home Link 6•9

1. a. triangle **b.** 2 sides **c.** 2 angles **d.** no

2. a. square **b.** yes **c.**



Home Link 6•11

1. (from left to right) prism; sphere; cylinder; cone; pyramid

4. 379 **5.** 25

Home Link 6•12

1. pentagonal prism **2.** pentagon

3. rectangle **4.** 15 edges

5. 10 vertices

Name Date Time

HOME LINK 6•13

Unit 7: Family Letter

Multiplication and Division

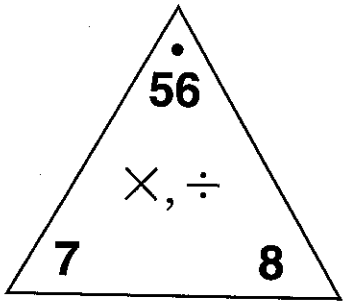
In Unit 7, children will focus on learning the multiplication and division facts. Many of the same strategies that were used in previous grades for addition and subtraction will also be used for multiplication and division.

Children will review multiplication by 0, by 1, and by 10; multiplication facts having square products, such as $5 \times 5 = 25$ and $2 \times 2 = 4$; and the turn-around rule, which shows that $2 \times 5 = 10$ is the same as $5 \times 2 = 10$.

Children will also continue to work with fact families and Fact Triangles as they learn the multiplication and division facts.

$7 \times 8 = 56$
$8 \times 7 = 56$
$56 \div 7 = 8$
$56 \div 8 = 7$

Fact family for the numbers 7, 8, and 56



Fact Triangle

The goal is for children to demonstrate automaticity with × 0, × 1, × 2, × 5, and × 10 multiplication facts and to use strategies to compute remaining facts up to 10 × 10 by the end of the year.

Please keep this Family Letter for reference as your child works through Unit 7.

$0 \times 9 = 0$
$2 \times 2 = 4$
$2 \times 1 = 2$
$3 \times 10 = 30$

Vocabulary

Important terms in Unit 7:

factor Each of 2 or more numbers in a product. For example, $4 \times 3 = 12$; so 12 is the product, and 4 and 3 are the factors.

$$\underset{\text{factors}}{4 \times 3} = \underset{\text{product}}{12}$$

product The result of multiplying 2 numbers, called factors. For example, in $4 \times 3 = 12$, the product is 12.

square number The product of a counting number and itself. For example, 25 is a square number, because $5 \times 5 = 25$.

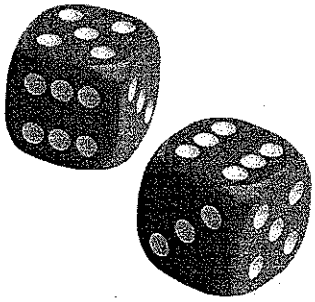
estimate (1) An answer close to, or approximating, an exact answer. (2) To make an estimate.

parentheses ( ) Grouping symbols used to indicate which parts of an expression should be done first.

extended multiplication fact A multiplication fact involving multiples of 10, 100, and so on. In an extended multiplication fact, each factor has only one digit that is not 0. For example, 60×7, 70×6, and 60×70 are extended facts.

Building Skills through Games

In Unit 7, your child will practice multiplication and division skills by playing the following games. For detailed instructions, see the *Student Reference Book*.



Baseball Multiplication

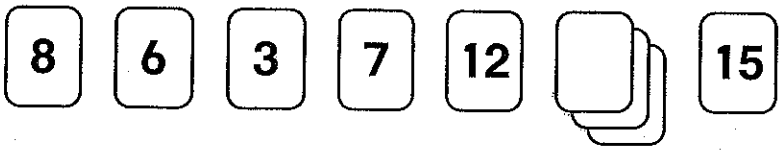
Players use multiplication facts to score runs. Team members take turns pitching by rolling two dice to get two factors. Then players on the batting team take turns multiplying the two factors and saying the product.

Multiplication Bingo

Players take turns calling out the product of two numbers. If that number appears on their *Multiplication Bingo* cards, they put a penny on that number. The first player to get 4 pennies in a row, column, or diagonal calls out "Bingo!" and wins the game.

Name That Number

Players turn over a card to find a number they must rename using any combination of five faceup cards. They may add, subtract, multiply, or divide the numbers on 2 or more of the 5 cards that are number-side up.



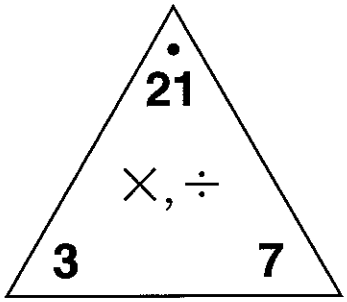
The number 15 can be renamed using 3 cards as $\mathbf{3} \times \mathbf{7} = 21$

$21 - \mathbf{6} = 15$

Do-Anytime Activities

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

1. Practice multiplication facts by playing games and by working with Fact Triangles.



Fact Triangle

$3 \times 7 = 21$

$7 \times 3 = 21$

$21 \div 7 = 3$

$21 \div 3 = 7$

Fact families for the numbers 3, 7, and 21

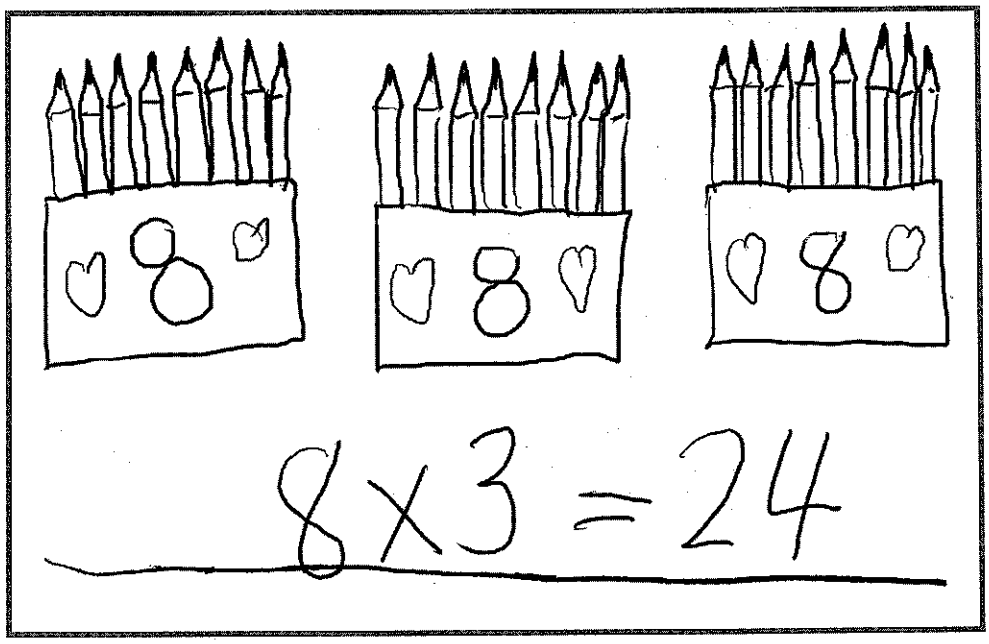
2. Ask your child to count by certain intervals.
For example: Start at zero and count by 6s.

3. Provide your child with problems with missing factors for multiplication practice.
For example: 6 times what number equals 18?

4. Ask your child to estimate costs at the store.
For example: One loaf of bread costs $1.49. Two loaves are about $3.00.

5. Ask questions that involve equal sharing.
For example: Eight children share 64 paperback books. How many books does each child get?

6. Ask questions that involve equal groups.
For example: Pencils are packaged in boxes of 8. There are 3 boxes. How many pencils are there in all?



Child's drawing of equal groups

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 7•2

1.

Factor	Factor	Product
3	5	15
7	2	14
4	10	40
8	8	64
9	5	45
864	1	864
10	10	100
0	999	0
1	48	48
243	0	0

5. 14,189

6. 3,166

Home Link 7•4

1a. $(17 - 10) + 3 = 10$ **1b.** $17 - (10 + 3) = 4$

2a. $(26 - 7) \times 2 = 38$ **2b.** $26 - (7 \times 2) = 12$

3a. $(24 - 17) - 6 = 1$ **3b.** $24 - (17 - 6) = 13$

4a. $3 \times (6 + 13) = 57$ **4b.** $(3 \times 6) + 13 = 31$

7. The parentheses are placed incorrectly.
The number model should be $(8 \times 4) + 4 = 36$.

Home Link 7•5

Scoring 15 Basketball Points

Number of 3-point baskets	Number of 2-point baskets	Number of 1-point baskets	Number models
5	0	0	$(5 \times 3) + (0 \times 2) + (0 \times 1) = 15$
0	5	5	$(0 \times 3) + (5 \times 2) + (5 \times 1) = 15$
3	3	0	$(3 \times 3) + (3 \times 2) + (0 \times 1) = 15$
4	0	3	$(4 \times 3) + (0 \times 2) + (3 \times 1) = 15$
2	3	3	$(2 \times 3) + (3 \times 2) + (3 \times 1) = 15$
1	6	0	$(1 \times 3) + (6 \times 2) + (0 \times 1) = 15$

1. 186 **2.** 509 **3.** 24

Home Link 7•6

1. $8 \times 200 = 1{,}600$
$200 \times 8 = 1{,}600$
$1{,}600 \div 8 = 200$
$1{,}600 \div 200 = 8$

2. $9 \times 30 = 270$
$30 \times 9 = 270$
$270 \div 9 = 30$
$270 \div 30 = 9$

3. $6 \times 40 = 240$
$40 \times 6 = 240$
$240 \div 6 = 40$
$240 \div 40 = 6$

Home Link 7•7

2. b. 1,750 **c.** 1,251 **f.** 545 **g.** 614
i. 522

Home Link 7•8

5. a. 1,200 **b.** 1,400 **c.** 400 **d.** 800
e. 2,000 **f.** 200 **g.** 2,000 **h.** 1,000
i. 0 Total = 9,000

Sample answers:

6. a. 10×10 **b.** 3×50
c. 30×3 **d.** 40×4

a 100 + b 150	= 250
c 90 + d 160	= 250
	Total 500

Home Link 7•9

Mystery Numbers:

100; 199; 70; 44; 1,000; and 998

Name Date Time

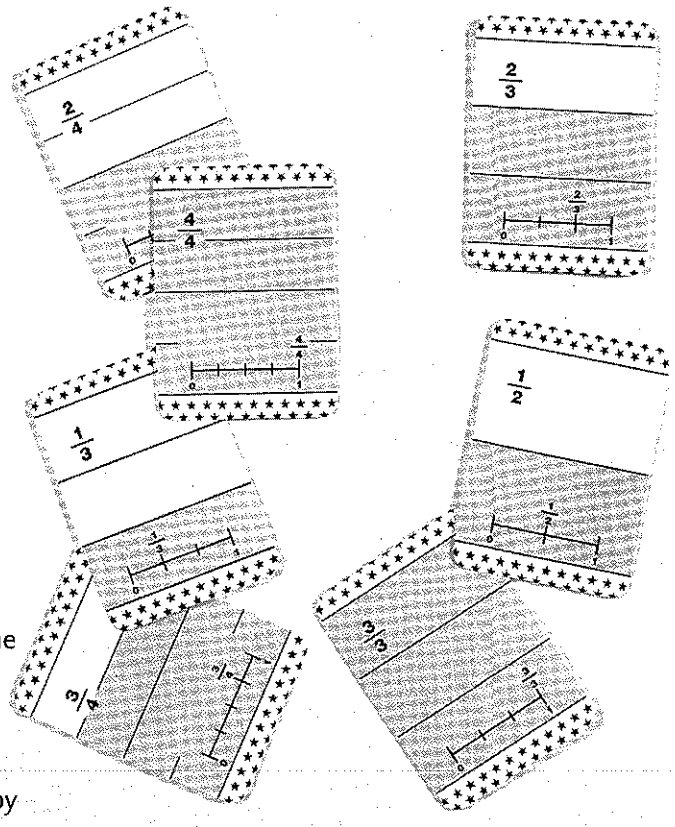
HOME LINK 7•10

Unit 8: Family Letter

Fractions

Unit 8 has two primary objectives:

- to review the uses of fractions and fraction notation
- to help children develop a solid understanding of equivalent fractions, or fractions that have the same value

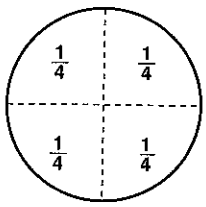


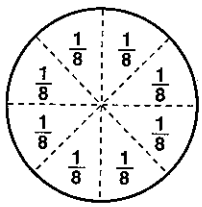
The second objective is especially important, because understanding equivalent fractions will help children compare fractions and, later, calculate with fractions.

Children will build their understanding of equivalent fractions by working with Fraction Cards and name-collection boxes. Fraction Cards are shaded to show a variety of fractions.

Name-collection boxes contain equivalent names for the same number. For example, a $\frac{1}{2}$ name-collection box can contain fractions such as $\frac{2}{4}$, $\frac{3}{6}$, and $\frac{4}{8}$ and the decimal 0.50.

Children will also generate lists of equivalent fractions by folding circles and rectangles into different numbers of equal parts.





$\frac{1}{2}$	
$\frac{1}{4} + \frac{1}{4}$	$\frac{3}{6}$
$1 - \frac{1}{2}$	$\frac{5}{10}$
$1 \div 2$	$\frac{3}{4} - \frac{1}{4}$

Throughout this unit, children will make up and solve number stories involving fractions in everyday contexts. They will solve number stories about collections of real-world objects such as crayons, books, and cookies.

Finally, children will begin to name quantities greater than 1 with fractions such as $\frac{3}{2}$ and $\frac{5}{4}$ and with mixed numbers such as $2\frac{1}{3}$.

Please keep this Family Letter for reference as your child works through Unit 8.

Vocabulary

Important terms in Unit 8:

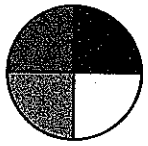
fraction A number in the form $\frac{a}{b}$ where a and b are whole numbers and b is not 0. A fraction may be used to name part of a whole, to compare two quantities, or to represent division. For example, $\frac{2}{3}$ can be thought of as 2 divided by 3.

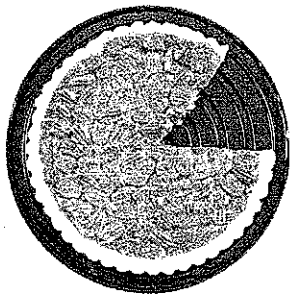
denominator The number below the line in a fraction. A fraction may be used to name part of a whole. If the whole is divided into equal parts, the denominator represents the number of equal parts into which the whole (the ONE or unit whole) is divided. In the fraction $\frac{a}{b}$, b is the denominator.

numerator $\frac{3}{4}$ denominator

number of parts shaded

number of equal parts





numerator The number above the line in a fraction. A fraction may be used to name part of a whole. If the whole (the ONE or unit whole) is divided into equal parts, the numerator represents the number of equal parts being considered. In the fraction $\frac{a}{b}$, a is the numerator.

equivalent fractions Fractions with different denominators that name the same number. For example, $\frac{1}{2}$ and $\frac{4}{8}$ are equivalent fractions.

mixed number A number that is written using both a whole number and a fraction. For example, $2\frac{1}{4}$ is a mixed number equal to $2 + \frac{1}{4}$.

Building Skills through Games

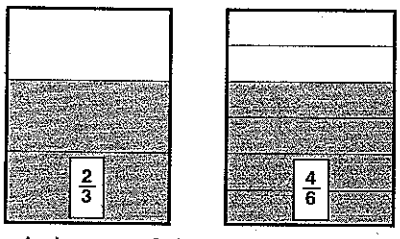
In Unit 8, your child will practice multiplication skills, build his or her understanding of fractions, and practice skills related to chance and probability by playing the following games. For detailed instructions, see the *Student Reference Book.*

Baseball Multiplication

Players use multiplication facts to score runs. Team members take turns pitching by rolling two dice to get two factors. Then players on the batting team take turns multiplying the two factors and saying the product.

Equivalent Fractions Game

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



Fraction Top-It

Players turn over two Fraction Cards and compare the shaded parts of the cards. The player with the larger fraction keeps all the cards. The player with more cards at the end wins!

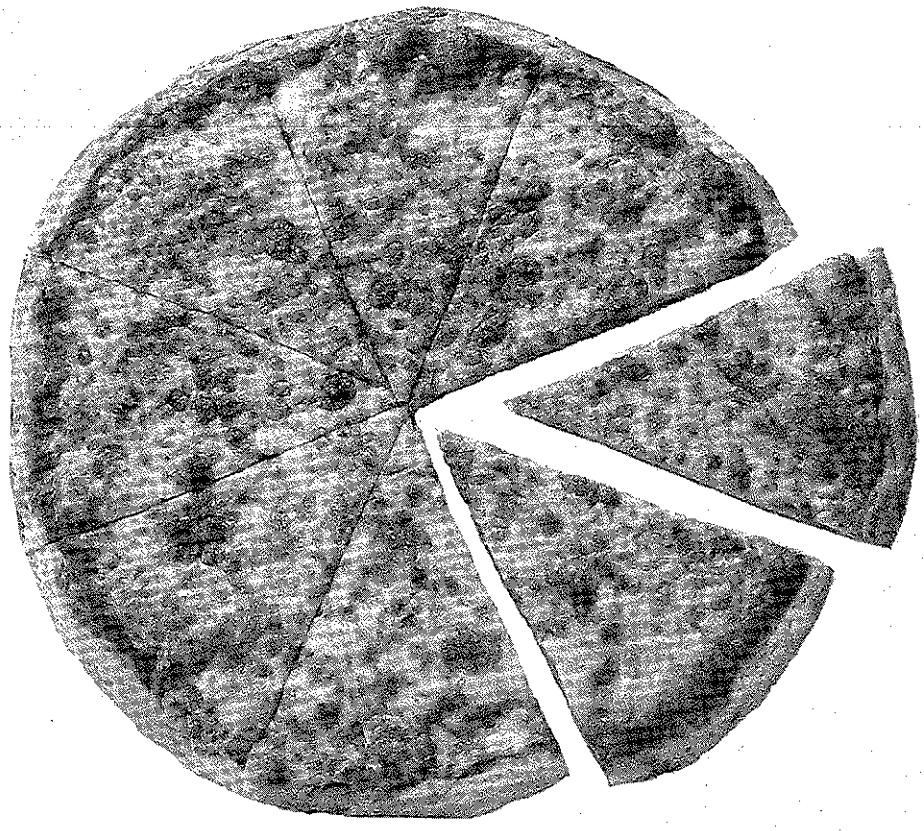
The Block-Drawing Game

Without letting the other players see the blocks, a Director puts five blocks in a paper bag and tells the players how many blocks are in the bag. A player takes a block out of the bag. The Director records the color of the block for all players to see. The player replaces the block. At any time, a player may say *Stop!* and guess how many blocks of each color are in the bag.

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. Help your child find fractions in the everyday world—in advertisements, on measuring tools, in recipes, and so on.
2. Count together by a 1-digit number. For example, start at 0 and count by 7s.
3. Dictate 5-, 6-, and 7-digit numbers for your child to write, such as *thirteen thousand, two hundred forty-seven* (13,247) and *three million, two hundred twenty-nine thousand, eight hundred fifty-six* (3,229,856). Also, write 5-, 6-, and 7- digit numbers for your child to read to you.
4. Practice extended multiplication and division facts such as $3 \times 7 =$ __, $30 \times 7 =$ __, and $300 \times 7 =$ __, and $18 \div 6 =$ __, $180 \div 6 =$ __, and $1{,}800 \div 6 =$ __.



As You Help Your Child with Homework

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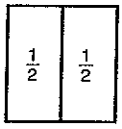
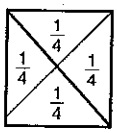
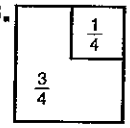
Home Link 8•1

1. 

2. 

3. 

4. $\frac{5}{7}$ **5.** $\frac{2}{7}$

6. 187 **7.** 587 **8.** 192

Home Link 8•2

1. 0 **2.** 3 **3.** 6

4. 4

5. 198, 198, 198

Home Link 8•3

1. 7

2. 3

3. $\frac{1}{4}$, or $\frac{10}{40}$

4. $\frac{1}{5}$, or $\frac{10}{50}$

5. ○○○○○○○○○○○○○○○

6. ⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠○○○

Home Link 8•4

1. 9 pieces of fruit, $\frac{4}{9}$, $\frac{2}{9}$, $\frac{3}{9}$, $\frac{0}{9}$

2. $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$ **3.** 46

4. 1,269 **5.** 210 **6.** 999

Home Link 8•5

4. $\frac{2}{4}$; $\frac{1}{2}$ **5.** $\frac{3}{6}$; $\frac{1}{2}$ **6.** $\frac{4}{8}$; $\frac{1}{2}$

8. 4 cats **9.** $\frac{4}{16}$

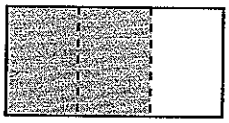
10.

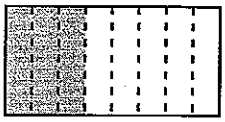
$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$
$\frac{4}{8}$, $\frac{2}{4}$, or $\frac{1}{2}$		

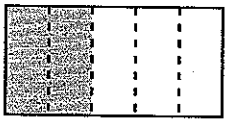
11.

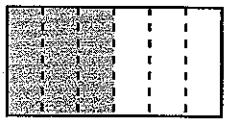
$\frac{2}{6}$ or $\frac{1}{3}$	$\frac{1}{6}$	$\frac{1}{6}$
	$\frac{2}{6}$ or $\frac{1}{3}$	

Home Link 8•6

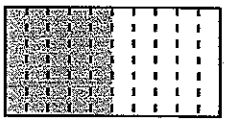
1. 

2. 

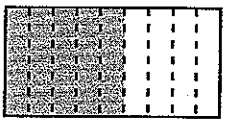
3. 

4. 

5. 

6. 

7. 

8. 

9. $\frac{2}{3}$, $\frac{7}{8}$, $\frac{5}{9}$ **10.** $\frac{3}{6}$, $\frac{5}{10}$ **11.** >

12. < **13.** > **14.** = **15.** 56

16. 9 **17.** 3 **18.** 72

Home Link 8•7

1. 6; $\frac{6}{4}$; $1\frac{2}{4}$ or $1\frac{1}{2}$ **2.** 9; $\frac{9}{5}$; $1\frac{4}{5}$ **3.** 7; $\frac{7}{3}$; $2\frac{1}{3}$

4. $\frac{1}{12}$ **5.** $\frac{28}{12}$; $2\frac{4}{12}$ or $2\frac{1}{3}$ **6.** 13

7. 46 **8.** 124 **9.** 230

Home Link 8•8

1. 8 eggs **2.** $\frac{1}{4}$ of the lawn

3. 2 miles **4.** $1\frac{1}{4}$ trays

5. $\frac{1}{4}$ gallon **6.** 6,761

7. 2,908 **8.** 9,524

Name Date Time

HOME LINK 8•9

Unit 9: Family Letter

Multiplication and Division

In Unit 9, children will develop a variety of strategies for multiplying whole numbers. They will begin by using mental math (computation done by counting fingers, drawing pictures, making diagrams, and computing in one's head). Later in this unit, children will be introduced to two specific algorithms, or methods, for multiplication: the partial-products algorithm and the lattice method.

Partial-Products Algorithm

The partial-products algorithm is a variation of the traditional multiplication algorithm that most adults learned as children. Note that the multiplication is done from left to right and emphasizes place value in the numbers being multiplied.

		28 × 4	
Multiply 4 × 20.	→	80	First, calculate 4 [20s].
Multiply 4 × 8.	→	+ 32	Then calculate 4 [8s].
Add the two partial products.	→	112	Finally, add the two partial products.

It is important that when children verbalize this method, they understand and say *4 [20s]*, not *4 × 2*. In doing so, they gain a better understanding of the magnitude of numbers along with better number sense.

		379 × 4	
Multiply 4 × 300.	→	1,200	First, calculate 4 [300s].
Multiply 4 × 70.	→	280	Second, calculate 4 [70s].
Multiply 4 × 9.	→	+ 36	Then calculate 4 [9s].
Add the three partial products.	→	1,516	Finally, add the three partial products.

Check that when your child is verbalizing this strategy, he or she says *4 [300s]*, not *4 × 3;* and *4 [70s]*, not *4 × 7*. Using this strategy will also help to reinforce your child's facility with the basic multiplication facts and their extensions.