

# 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.

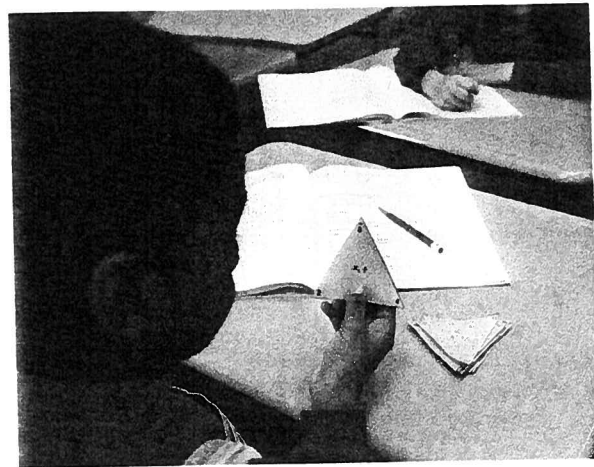
Several features of the program are described below to help familiarize you with the structure and expectations of *Everyday Mathematics*.

**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.

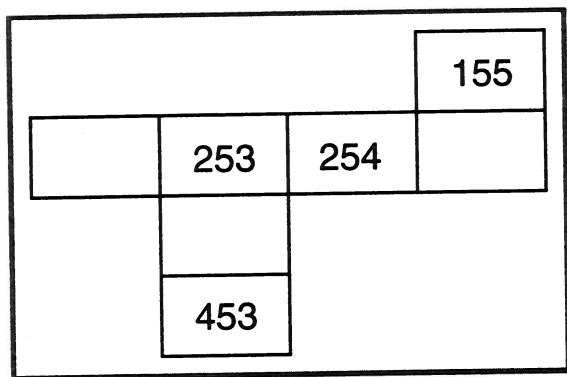
**estimate** An answer close to, or approximating, an exact answer.

**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

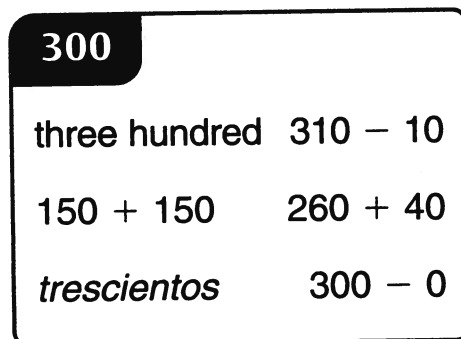
**number-grid puzzle** In *Everyday Mathematics*, a piece of the number grid in which some, but not all, of the numbers are missing. Children use number-grid puzzles to practice place-value concepts.



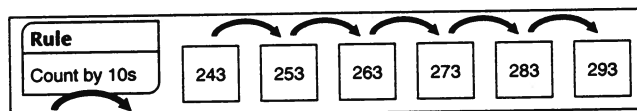
**range** The difference between the *maximum* and the *minimum* in a set of data. Used as a measure of the spread of data.

**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 ~~X~~ Z      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:

$9 + 9$        $2 \times 9$   
 $6 + 6 + 6$       ~~HHH-HHH-HHH-III~~  
*dieciocho*       $4 \times 5 - 2$        $36 \div 2$   
 number of days in two weeks + 4 days

2. **12** ~~HHH~~ one dozen

$7 + 5$   
 number of months in 1 year  
 $15 - 3$        $10 + 2$   
~~HHH~~      ~~HHH~~

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

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

1. 4      2. 11      3. 4      4. 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

HOME LINK

1·1

# Numbers All Around Museum *continued*



## Family Note

Numbers on advertisements show quantities and prices (3 cans of soup for \$1.00); food containers show weight or capacity (a  $15\frac{1}{2}$ -oz can of black beans or 1-quart carton of milk); and telephone books show addresses and phone numbers. By helping your child find examples of numbers in everyday life, you will reinforce the idea that numbers are all around us and are used for many reasons. Help your child recognize numbers by filling in the table.

*Please return this Home Link to school within the next few days.*

1. Find as many different kinds of numbers as you can. Record the numbers in the table below. Be sure to include the unit if there is one.

Number	Unit (if there is one)	Where you found the number
14	oz	cereal box

Find objects or pictures with numbers on them to bring to school. Check with an adult at home first. Do not bring anything valuable.

## Practice

2. Solve.

$$\begin{array}{r} 5 \\ +2 \\ \hline \square \end{array}$$

$$\begin{array}{r} \square \\ -2 \\ \hline 5 \end{array}$$

$$\begin{array}{r} \square \\ -5 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 2 \\ +5 \\ \hline \square \end{array}$$

**HOME LINK**  
**1·2**

# Number-Grid Puzzles


**Family Note**

Today your child reviewed patterns on a number grid and completed number grid puzzles. On this Home Link, your child may use either the number grid or its patterns to complete the number grid puzzles. Ask your child to explain how he or she filled in the puzzles.



-9	-8	-7	-6	-5	-4	-3	-2	-1	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
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

When you move right, the numbers increase by 1.

When you move left, the numbers decrease by 1.

When you move down, the numbers increase by 10.

When you move up, the numbers decrease by 10.

Fill in the missing numbers. Explain the patterns to someone at home.

1.

	22
31	

2.

	175	

3. Make up your own.


**Try This**

4.

1,382		

**HOME LINK**  
**1•3**

# Place-Value Practice



**Family Note** In the last lesson, children learned how to use a number grid and how to solve number-grid puzzles. The **Try This** problems below give children more practice with what they have learned. For information about number grids and number-grid puzzles, see pages 7–9 in the *Student Reference Book*.

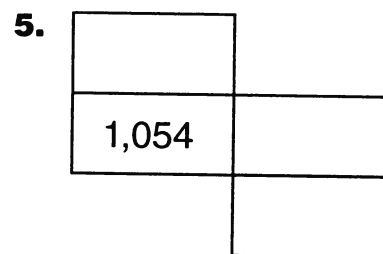
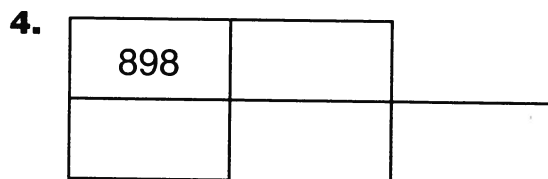
*Please return this Home Link to school tomorrow. Also bring a clean sock tomorrow to use as an eraser with your slate.*



- Have someone at home tell you a four-digit number to write down.
  - Write the the number. \_\_\_\_\_
  - Circle the digit in the thousands place.
  - Put an X through the digit in the tens place.
  - Underline the digit in the ones place.
- Write the number that is 100 more than your number in Problem 1. \_\_\_\_\_
- Write the number that is 100 less than your number in Problem 1. \_\_\_\_\_

## Try This

Use the filled-in grid on page 7 of your *Student Reference Book* to help.



## Practice

Solve.

6.  $4 + 5 =$  \_\_\_\_\_

7. \_\_\_\_\_  $= 9 - 5$

8. \_\_\_\_\_  $= 5 + 4$

9.  $9 - 4 =$  \_\_\_\_\_

## Unit

# Telling Time

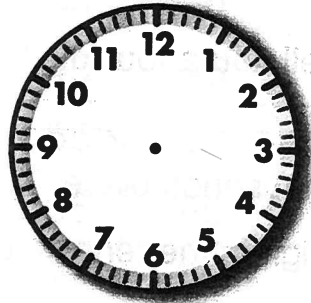


## Family Note

Today we discussed some of the tools used in mathematics. We reviewed how to read a ruler to the nearest inch and nearest centimeter and how to read a clock face to tell time to the nearest half-hour, nearest quarter-hour, and nearest 5 minutes. Help your child read and write each time.

*Please return this Home Link to school tomorrow.*

1. Draw the hour hand and the minute hand to show the time right now. Write the time.



\_\_\_\_\_ : \_\_\_\_\_

Write the time shown.

2.



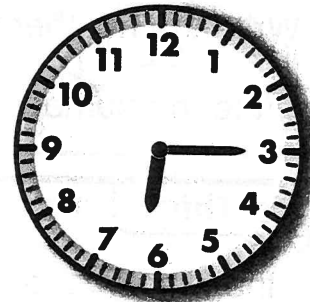
\_\_\_\_\_ : \_\_\_\_\_

3.



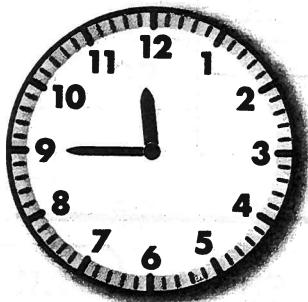
\_\_\_\_\_ : \_\_\_\_\_

4.



\_\_\_\_\_ : \_\_\_\_\_

5.



\_\_\_\_\_ : \_\_\_\_\_

6.



\_\_\_\_\_ : \_\_\_\_\_

7.



\_\_\_\_\_ : \_\_\_\_\_

8. Show someone at home how you solved the hardest problem on this page.



# How Much TV Did They Watch?

**Family Note**

You can find information about tally charts on pages 76–78 in the *Student Reference Book*.  
You can find information about the minimum, maximum, range, mode, and median of a set of data on pages 79 and 81.

Please return this Home Link to school tomorrow.



Paul asked some of his classmates how many hours they watched television over the weekend. His classmates reported the following number of hours:

1 hour    3 hours    1 hour    5 hours    0 hours    2 hours  
4 hours    3 hours    2 hours    3 hours    3 hours

1. Make a tally chart for the data.

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

- What was the least (minimum) number of hours watched? \_\_\_\_\_ hours
- What was the greatest (maximum) number of hours watched? \_\_\_\_\_ hours
- What is the range for the data? \_\_\_\_\_ hours (Remember that *range* is the difference between the greatest number and the least number.)
- What is the mode for the data? \_\_\_\_\_ hours (Remember that the *mode* is the number that occurs most often.)
- What is the median for the data? \_\_\_\_\_ hours (Remember that the *median* is the number in the middle.)

**HOME LINK**  
**1•6**

# Name-Collection Boxes



**Family Note** You can find an explanation of name-collection boxes on pages 14 and 15 in the *Student Reference Book*.

*Please return this Home Link to school tomorrow.*



- Write at least 10 names for the number 18 in the name-collection box. Then explain to someone at home how the box works. Have that person add another name for 18.

**18**

- Three of the names do not belong in this box. Cross them out. Then write the name of the box on the tag.

~~###~~ ~~###~~ one dozen  
 $7 + 5$   
 number of months in 1 year  
 $15 - 3$      $10 + 2$   
 $18 - 4$      $9 - 3$

- Make up a problem like Problem 2. Choose a name for the box but do not write it on the tag. Write 4 names for the number and 2 names that are not names for the number.

To check if the problem makes sense, ask someone at home to tell you which 2 names do not belong in the box. Have that person write the name of the box on the tag.

HOME LINK  
1-7**Likely and Unlikely Events****Family Note**

During the next two weeks, please help your child find and cut out items in newspapers and magazines that discuss events that might or might not happen. Have your child bring these items to school to share with the class.

*Please return this Home Link to school tomorrow.*



For the next two weeks, look for items in newspapers and magazines that tell about events that **might** or **might not** happen. Get permission to cut them out and bring them to school. You might look for items like the following:

- ◆ a weather forecast (What are the chances that it will rain tomorrow?)
- ◆ the sports page (Which team is favored to win the baseball game?)
- ◆ a news story (What are the chances that people will explore distant planets in the next 20 years?)

Tell whether each event below is sure to happen, sure not to happen, or may happen, but not sure. Circle the answer.

1. You will grow taller next year.  
     sure to happen      sure not to happen      may happen, but not sure
2. You will live to be 200 years old.  
     sure to happen      sure not to happen      may happen, but not sure
3. You will watch TV next Saturday.  
     sure to happen      sure not to happen      may happen, but not sure
4. You will travel to the moon.  
     sure to happen      sure not to happen      may happen, but not sure

**Practice****Unit**

Solve.

5.  $3 + 4 = \underline{\quad}$

6.  $\underline{\quad} = 7 - 4$

7.  $\underline{\quad} = 7 - 3$

8.  $4 + 3 = \underline{\quad}$

HOME LINK  
1-8**Finding Differences****Family Note**

It is not expected that your child knows how to use a traditional method of subtraction to solve these problems. Formal methods will be covered in the next unit. You can find an explanation of how to find differences on a number grid on page 8 in the *Student Reference Book*.

Please return this Home Link to school tomorrow.



1. Fill in the numbers on the number grid below.

	132								
									150
			154						
						177			

Use the number grid above to help you answer the following questions.

2. Which is more, 154 or 131? \_\_\_\_\_ How much more? \_\_\_\_\_
3. Which is less, 177 or 148? \_\_\_\_\_ How much less? \_\_\_\_\_
4. The difference between 180 and 158 is \_\_\_\_\_.

**Try This**

5. Explain how you found your answer in Problem 4.
- \_\_\_\_\_

**Practice**

Solve.

6.  $13 = 7 + \underline{\quad}$

7.  $13 = 6 + \underline{\quad}$

8.  $6 = \underline{\quad} - 7$

9.  $7 = \underline{\quad} - 6$

HOME LINK  
1•9

# Large and Small Numbers



**Family Note** We have been reviewing place-value concepts in this lesson. For more information about place value, see pages 18 and 19 in the *Student Reference Book*.

Please return this Home Link to school tomorrow.



You will need a die or a deck of cards numbered from 0–9, or slips of paper numbered 0–9.

1. Roll a die 4 times (or draw 4 cards).

a. Record the digit for each roll (or each card) in a blank.

\_\_\_\_\_

b. Make the largest 4-digit number you can using these digits.

\_\_\_\_\_, \_\_\_\_\_

c. Make the smallest 4-digit number you can using these digits. The number may not begin with a zero.

\_\_\_\_\_, \_\_\_\_\_

2. Roll a die 5 times (or draw 5 cards).

a. Record the digit for each roll (or each card) in a blank.

\_\_\_\_\_

b. Make the largest 5-digit number you can using these digits.

\_\_\_\_\_, \_\_\_\_\_

c. Make the smallest 5-digit number you can using these digits. The number may not begin with a zero.

\_\_\_\_\_, \_\_\_\_\_

## Practice

Solve.

3.  $8 = \underline{\quad} + 5$

4.  $8 = 5 + \underline{\quad}$

5.  $\underline{\quad} = 8 - 3$

6.  $\underline{\quad} = 8 - 5$

Unit

HOME LINK  
1•10

# Ad Hunt



**Family Note** The children have been working on dollars-and-cents notation (for example, \$4.95). Help your child locate ads that clearly show prices.

*Please return this Home Link to school tomorrow.*

1. Cut out four small advertisements from newspapers or magazines. Each ad must show the price of an item.
2. Put the ads in order from the least expensive item to the most expensive item.
3. Tape or glue your four ads in order on this page.
4. Bring extra ads to school to add to the Numbers All Around Museum.

## Practice

Unit

5. Solve.

$$\begin{array}{r} \phantom{+} \phantom{0} 6 \\ + \phantom{0} \square \\ \hline \phantom{0} 12 \end{array}$$

$$\begin{array}{r} \phantom{-} \phantom{0} 12 \\ - \phantom{0} \square \\ \hline \phantom{0} 6 \end{array}$$

$$\begin{array}{r} \square \\ + 5 \\ \hline 10 \end{array}$$

$$\begin{array}{r} \square \\ - 5 \\ \hline 5 \end{array}$$

6.  $13 - 7 = \underline{\quad}$      $\underline{\quad} + 9 = 14$      $11 = 9 + \underline{\quad}$      $12 - 4 = \underline{\quad}$

**HOME LINK**  
**1•11**

# Shopping in the Newspaper


**Family Note**

In this activity, your child will be looking for at least five different items to buy with \$100. If any money is left over, your child can find something else to buy. If your child buys something in quantity (for example, 4 CDs), list each item and price on a separate line.

*Please return this Home Link to school tomorrow.*



1. Pretend that you have \$100 to spend. Have someone at home help you find ads for at least five different items that you can buy. List the items and their prices below. **DO NOT CALCULATE** your total. Instead, estimate the total. You do not need to spend exactly \$100.

Item	Actual Price	Estimated Price
CD	\$15.75	\$16

2. Explain to someone at home how you estimated the total price of your items.

**Practice**

Solve.

$$\begin{array}{r} 3. \quad 11 \\ - \square \\ \hline 7 \end{array}$$

$$\begin{array}{r} 4. \quad 4 \\ + 7 \\ \hline \square \end{array}$$

$$\begin{array}{r} 5. \quad 7 \\ + \square \\ \hline 11 \end{array}$$

$$\begin{array}{r} 6. \quad \square \\ - 7 \\ \hline 4 \end{array}$$

**Unit**

HOME LINK  
1-12

## Frames-and-Arrows



**Family Note** You can find information about Frames-and-Arrows diagrams on pages 200 and 201 in the *Student Reference Book*.

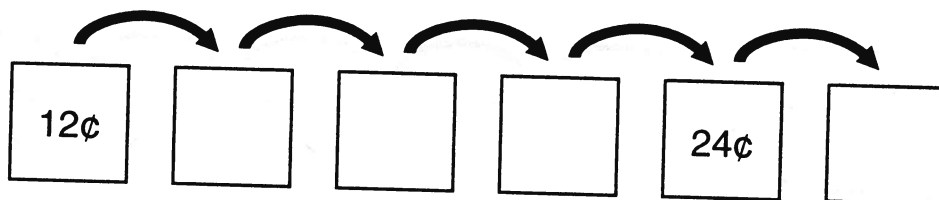
Please return this Home Link to school tomorrow.



Show someone at home how to complete these Frames-and-Arrows diagrams.

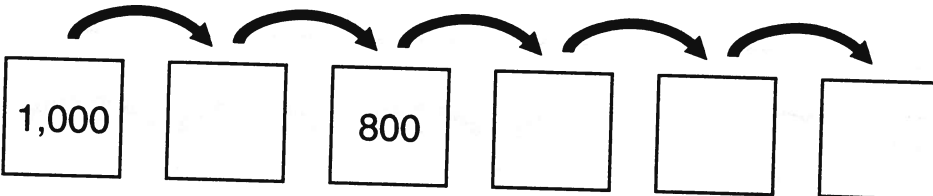
1. 

Rule
+3¢



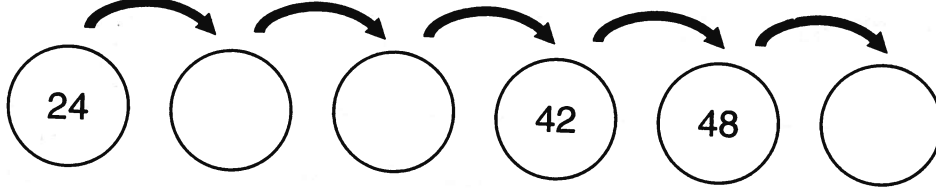
2. 

Rule
-100



3. 

Rule



## Practice

Write each amount in dollars-and-cents notation.

4.  $\$1 \text{ Q } \text{D } \text{N } \text{N } \text{P} = \$$  \_\_\_\_\_

5.  $\text{D } \text{D } \text{Q } \text{N } \text{P } \text{D } \text{Q } \text{P} = \$$  \_\_\_\_\_

6.  $\$10 \text{ } \$1 \text{ } \$1 \text{ } \text{N } \text{P} = \$$  \_\_\_\_\_

7. Draw coins to show \$0.89 in at least two different ways.

---



---



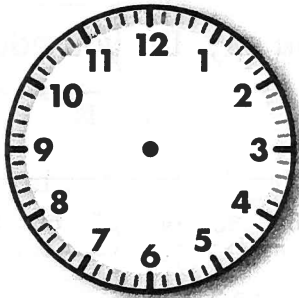
HOME LINK  
1-13**Time Practice**

**Family Note** Your child has been learning about elapsed time in this lesson.  
Please return this Home Link to school tomorrow.

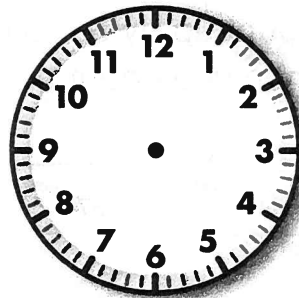


Pretend you are setting your watch. Draw the hour hand and minute hand on the clock face to show the time. Use a real watch or clock to help you.

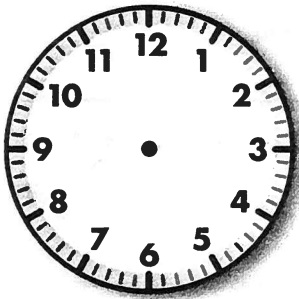
1. a. Show a quarter to 6.



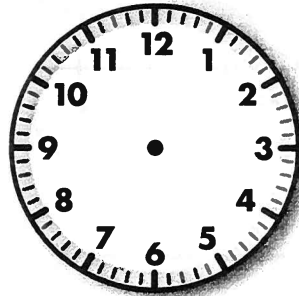
b. Show the time 2 hours and 15 minutes later.



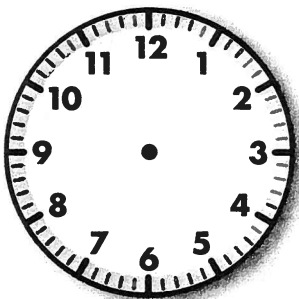
2. a. Show half-past 8.



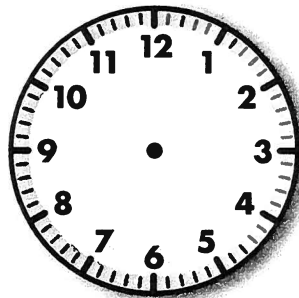
b. Show the time 4 hours and 20 minutes earlier.



3. a. Show 25 minutes past 11.



b. Show the time 3 hours and 40 minutes later.

**Practice**

Solve.

4.  $4 + \underline{\quad} = 8$

5.  $\underline{\quad} = 8 - 4$

6.  $14 = \underline{\quad} + 7$

7.  $14 - \underline{\quad} = 7$