

Buying Art Supplies





Note

Family In today's lesson, your child solved number stories involving money amounts. Ask your child to explain to you how he or she solved each of the addition problems below. Challenge your child to find the total cost of 3 or 4 items. Encourage your child to use estimation before solving each problem. Ask such questions as: Is the total cost of the crayons and glitter more or less than \$3.00? (less)

Please return this Home Link to school tomorrow.



Crayons



Glitter



Coloring Pencils



Glue Stick

Find the total cost of each pair of items.

1. crayons and glitter

2. glitter and coloring pencils

Total cost:

Total cost:

- 3. crayons and coloring pencils
- 4. glue stick and crayons

Total cost: _____

Total cost: _____



Estimating Money with Ten Frames



Use \$1 bills, dimes, and a ten frame (*Math Masters,* page 422) to solve these problems.

Example: Is \$1.43 closer to \$1.00 or \$2.00?

- ◆ Forget about the pennies.
- ◆ Make \$1.40 with \$1 bills and dimes.
- Place the dimes in the ten frame (one to each box).

\$	1

(D)	(D)	(D)	(D)	

- ◆ Look at the ten frame. Is it more than half-filled or less than half-filled? Less
- ♦ Because the ten frame is less than half-filled, \$1.43 is closer to \$1.00. \$1.43 is closer to $\frac{$1.00}{.00}$.
- **1.** Is \$1.78 closer to \$1.00 or \$2.00?
 - ◆ Forget about the pennies.
 - ◆ Make \$1.70 with \$1 bills and dimes.
 - ◆ Place the dimes in the ten frame.
 - ◆ Is the ten frame more or less than half-filled? _____
 - ◆ \$1.78 is closer to _____.
- **2.** Is \$1.62 closer to \$1.00 or \$2.00? _____

Try This

- **3.** Is \$2.25 closer to \$2.00 or \$3.00? _____
- **4.** Is \$4.53 closer to \$4.00 or \$5.00? _____



Magic Squares



The sum of each row, column, and diagonal must be the same. Find the missing numbers. Write them in the blank boxes. Write the sum above the Magic Square.

1.

\$6	\$7	\$2
	\$5	\$9
\$8	\$3	**************************************

2.

	\$2.00	\$7.50
\$5.00	\$6.00	
	\$10.00	\$3.50

3.

\$4.75	\$0.50	
	\$3.50	\$3.00
	\$6.50	

4

\$8.25	\$6.50
\$3.50	

\$15.75



Comparing Costs



Family Note In today's lesson, your child solved subtraction number stories involving money amounts. Ask your child to explain how he or she solved each of the subtraction problems below. Encourage your child to use estimation before solving each problem. Ask such questions as: Is the difference in cost between the crayons and glitter more or less than \$1.00? (less)

Please return this Home Link to school tomorrow.



In Problems 1–4, circle the item that costs more. Then find how much more.

- **1.** glue stick or crayons

 How much more? ______
- **3.** glitter or coloring pencils

 How much more?
- 5. Carlos bought a glue stick. He paid with a \$1 bill. How much change should he get?

- 2. glue stick or glitter

 How much more? _____
- **4.** coloring pencils or crayons

 How much more?
- **6.** Solve.



Differences on the Number Grid





Use *Math Masters*, page 417 to solve the problems below. Show your work on the number grid.

Example:

Circle 13 and 39. Find the difference between 13 and 39. Use a pencil to mark the number grid to show what you did.

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

The difference between 13 and 39 is $\underline{26}$

1. Circle 12 and 34. Find the difference between 12 and 34. Use a pencil to mark the number grid to show what you did.

The difference between 12 and 34 is ______.

2. Circle 45 and 63. Find the difference between 45 and 63. Use a pencil to mark the number grid to show what you did.

The difference between 45 and 63 is ______.

3. Circle 76 and 91. Find the difference between 76 and 91. Use a pencil to mark the number grid to show what you did.

The difference between 76 and 91 is ______.

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Trade-First Subtraction



Family Note

Today your child learned about subtracting multidigit numbers using a procedure called the trade-first method. Your child also used "ballpark estimates" to determine whether his or her answers made sense.

The **trade-first** method is similar to the traditional subtraction method that you may be familiar with. However, all the "regrouping" or "borrowing" is done before the problem is solved—which gives the method its name, "trade-first."

Example:

longs 10s	cubes 1s
4	6
-3	9

- ◆ Are there enough tens and ones to remove exactly 3 tens and 9 ones from 46? (No; there are enough tens, but there aren't enough ones.)
- ◆ Trade 1 ten for 10 ones.

longs	cubes
10s	1s
3	16
4	6
-3	9

◆ Solve. 3 tens minus 3 tens leaves 0 tens. 16 ones minus 9 ones leaves 7 ones. The answer is 7.

longs	cubes
10s	1s
3	16
4	6
-3	9
	7

lacktriangle Make a ballpark estimate to see whether the answer makes sense: 46 is close to 50, and 39 is close to 40. 50 - 40 = 10. 10 is close to the answer of 7, so 7 is a reasonable answer.

The trade-first method is one of many ways people solve subtraction problems. Your child may choose this method or a different procedure. What is most important is that your child can successfully solve subtraction problems using a method that makes sense to him or her.

Please return the **second page** of this Home Link to school tomorrow.



Trade-First Subtraction *cont.*



Make a ballpark estimate for each problem and write a number model for your estimate.

Use the trade-first method of subtraction to solve each problem.

Answer

Example: Ballpark estimate:

$$30 - 20 = 10$$

longs	cubes
10s	1s
/	16
2	6
- 1	8
	8

1. Ballpark estimate:

longs 10s	cubes 1s	
7 – 4	3 2	

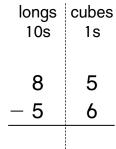
3. Ballpark estimate:

Answer

2. Ballpark estimate:

longs 10s	cubes 1s
4	9
- 2	6

Answer



Answer

4. Ballpark estimate:

longs 10s	cubes 1s
3	2
– 1	5

Answer

5. Ballpark estimate:

$$34 - 18$$

Answer



Subtraction with Base-10 Blocks



Use base-10 blocks to help you subtract.



- 1. longs cubes 10s 1s 3 7 2 2
- 2. longs cubes 10s 1s 4 3 3 1
- longs cubes
 10s
 1s
 2
 4
 1
 8

- 4. longs cubes 10s 1s

 6 2

 3 9
- 5. longs cubes 10s 1s 5 5 - 4 6
- 6. longs cubes 10s 1s
 4 7
 2 9
- 7. Write a problem of your own. Record what you would do with base-10 blocks to solve your problem.



Multiplication Stories



Note

Family In today's lesson, your child solved multiplication number stories in which he or she found the total number of things in several equal groups. Observe the strategies your child uses to solve the problems below. The "multiplication diagram" is a device used to keep track of the information in a problem.

> To solve Problem 1, your child would identify the known information by writing a 6 under cans and a 3 under tennis balls per can. To identify the unknown information, your child would write a ? under tennis balls in all.

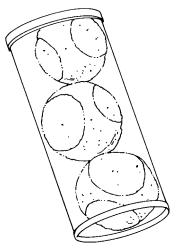
Please return this Home Link to school tomorrow.

Show someone at home how to solve these multiplication stories. Fill in each multiplication diagram.

Use counters or draw pictures or arrays to help you.

1. The store has 6 cans of tennis balls. There are 3 balls in each can. How many tennis balls are there in all?

cans	tennis balls per can	tennis balls in all



Answer: _____ tennis balls

Number model: ×



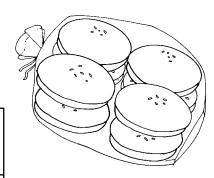
Multiplication Stories continued



2. Hamburger buns come in packages of 8. You buy 4 packages.

How many buns are there in all?

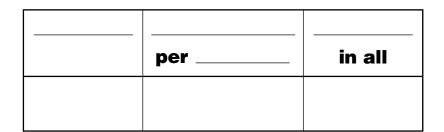
packages	buns per package	buns in all



Answer: _____ buns

Number model: _____ × ____ = ____

3. Make up and solve a multiplication number story below.



Answer: _____

Number model: ____ × ___ = ____

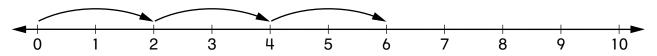
Equal Groups on a Number Line



Look at the example. Then follow the directions for each problem.

Example: $3 \times 2 = ?$

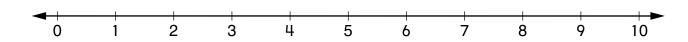
Start at 0. Show 3 hops of 2.



Where did you land? 6 Number model: $3 \times 2 = 6$

1.
$$3 \times 3 = ?$$

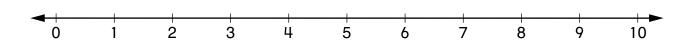
Start at 0. Show 3 hops of 3.



Where did you land? _____ Number model: _____

2.
$$4 \times 2 = ?$$

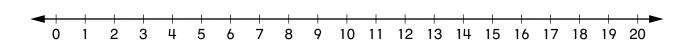
Start at 0. Show 4 hops of 2.



Where did you land? _____ Number model: _____

3.
$$5 \times 3 = ?$$

Start at 0. Show 5 hops of 3.



Where did you land? _____ Number model: _____



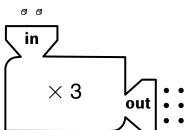
Making Multiples



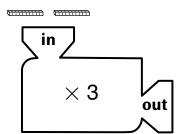


Use base-10 blocks to solve the problems. For each problem, draw the base-10 blocks that come out of the machine and write a number model to show what happened. Look for a pattern.

Example:

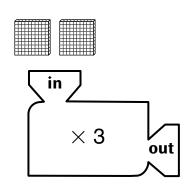


1.

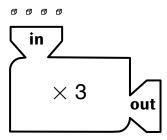


Number model: $2 \times 3 = 6$ Number model: _____

2.

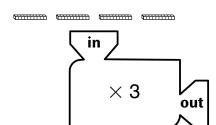


3.

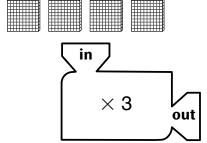


Number model: _____ Number model: _____

4.



5.



Number model: _____ Number model: _____



Division Number Stories



Note

Family Today your child solved division number stories about equal sharing and equal groups. The diagram used for multiplication can also be used for division number stories to identify known and unknown information. Your child will write a number model for each problem below. A number model is the symbolic representation of a number story. For example, in Problem 1, the number model is $18 \div 3 \rightarrow 6$ RO. This model is read as 18 divided by 3 gives 6, remainder 0. An arrow is used instead of an equals (=) sign because the result of a division problem can be two whole numbers: the quotient and remainder.

Please return this Home Link to school tomorrow.

Show someone at home how to solve these division stories. Use counters or draw pictures or diagrams to help you.

1. Our group needs 18 pens. There are 3 pens in each package. How many packages must we buy?

packages	pens per package	pens in all

Answer: ____ packages

Number model: \longrightarrow \rightarrow \longrightarrow R_{-}

2. Four children are playing a game with 25 cards. How many cards can the dealer give each player?

children	cards per child	cards in all

Answer: cards

Number model: ÷

3. Make up and solve a division story on the back of this sheet.



Exploring Equal Shares

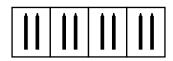




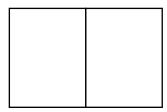
Use counters and quarter-sheets of paper to solve each problem. Record your work in the rectangles.

Example:

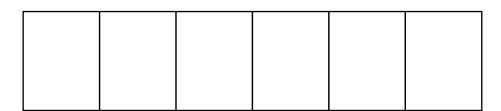
Nomi had 8 crayons. She gave the crayons to 4 of her friends. Each friend got the same number of crayons. Draw the number of crayons each friend gets.



1. Latrell shared 10 marbles with his best friend. Draw the number of marbles each boy had.



2. Melissa had 6 bags of treats for her birthday party. She had a total of 12 treats in her bags. Draw the number of treats in each bag.



3. Make up your own problem. Draw your solution.

Multiplication Facts



Note

Family In this lesson, your child has been learning multiplication facts and has used arrays to represent those facts. The first factor in a multiplication fact tells the number of rows in the array, and the second factor tells the number of columns in the array. In Problem 1, for example, an array with 2 rows of 6 dots is used for the multiplication fact $2 \times 6 = 12$.

Please return this Home Link to school tomorrow.

Show someone at home how you can use arrays to find products. Use •s.

1.
$$2 \times 6 =$$

1.
$$2 \times 6 =$$
 _____ **2.** $6 \times 2 =$ _____

6.
$$3 \times 4 =$$

$$2 \times 5 =$$

$$4 \times 10 =$$

11.6

Calculator Counts



1. Use your calculator to count by 1s. Complete the table below.

Ten	18	
Nine T	<u>s</u>	
	<u>s</u>	
n Eight	-	
Seven	18	
Six	18	
Five	18	
Four	18	
Three	18	
Two	18	
One	_	_
Count by 1s.		Display

2. Clear your calculator. Use your calculator to count by 2s. Complete the table below.

			Ī		i			i	ı	
Count by 2s.	One	MO	Three	Four	Five		Seven	Eight	Nine	Len
	8	2s	2s	2s	2s	2s	2s 2s	2s	2s	2s
Display	2									

3. Clear your calculator. Use your calculator to count by 5s. Complete the table below.

Count by 5s.	One	Тмо	Three	Four	Five		Seven	Eight	Nine	Ten
	5	2 8	28	2 8	2 8					
Display	2									

4. How can counting on your calculator help you learn your multiplication facts?



Multiplication Facts



Note

Family In today's lesson, your child practiced multiplication facts by using a table and discussed patterns in multiplication facts. For example, any number multiplied by 1 is that number; any number multiplied by 0 is 0; and if the order of the factors in a multiplication fact is reversed, the product remains the same. Observe the strategies your child uses to find the answers below. Counting by 2s, 5s, 10s, and so on is one strategy to look for. Another strategy is drawing pictures. Some children may be able to solve some multiplication facts mentally, but this is not expected until the end of third grade.

Please return this Home Link to school tomorrow.

1. Show someone at home what you know about multiplication facts. You can use arrays or pictures to help solve the problems.

$$2 \times 8 =$$
 _____ $3 \times 2 =$ _____ $2 \times 7 =$ _____ $4 \times 2 =$ _____ $5 \times 3 =$ _____ $2 \times 5 =$ _____ $6 \times 5 =$ _____ $5 \times 8 =$ _____ $10 \times 4 =$ _____ $3 \times 10 =$ _____ $9 \times 10 =$ _____ $10 \times 6 =$ _____

- 2. Explain to someone at home why it is easy to solve the following multiplication problems.
 - 99 502 15,461 a. \times 0 \times 1
- 3. Make up and solve some multiplication problems of your own on the back of this page.

Practice



Square Products



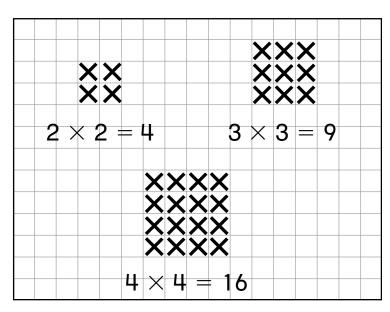
Work in a small group.

Materials□ centimeter grid paper (*Math Masters*, p. 434)□ centimeter cubes or pennies (or both)□ tape

Directions

- 1. Each person chooses a different number from 2 to 10.
- **2.** Build an array that shows your number multiplied by itself. Use pennies or centimeter cubes.
- **3.** Draw each array on centimeter grid paper. Write a number model under each array.

Example:





Square Products continued



4. Make and record a few more arrays. On a blank sheet of paper, make a table like the one below. Begin with the smallest factors. Record them in order: 2×2 , 3×3 , 4×4 , and so on.

Array (factors)	Total (product)
2×2	4
3×3	9
4×4	16

- **5.** Continue working together. Build arrays with cubes or pennies for larger and larger numbers. Draw the arrays on grid paper. You may need to tape pieces of grid paper together for the larger arrays.
- **6.** Record the factors and products for the larger numbers in your table. Look for number patterns in the list of products.

×, ÷ Fact Triangles



Family **Note**

Fact Triangles are tools for building mental arithmetic skills. You might think of them as the Everyday Mathematics version of the flash cards that you may remember from grade school. Fact Triangles, however, are more effective for helping children memorize facts because they emphasize fact families.

A **fact family** is a collection of related facts made from the same three numbers. For the numbers 4, 6, and 24, the multiplication/division fact family consists of

$$4 \times 6 = 24$$
, $6 \times 4 = 24$, $24 \div 6 = 4$, and $24 \div 4 = 6$.

Please help your child cut out the Fact Triangles attached to this letter.

To use Fact Triangles to practice multiplication with your child, cover the number next to the dot with your thumb. The number you have covered is the product.

Your child uses the numbers that are showing to tell you one or two multiplication facts: $3 \times 5 = 15 \text{ or } 5 \times 3 = 15.$

To practice division, use your thumb to cover a number without a dot.

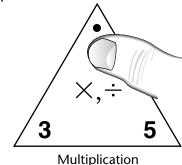
Your child uses the numbers that are showing to tell you the division fact $15 \div 5 = 3$.

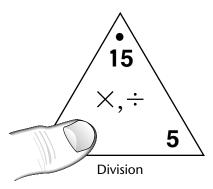
Now cover the other number without a dot. Your child tells you the other division fact, $15 \div 3 = 5$.

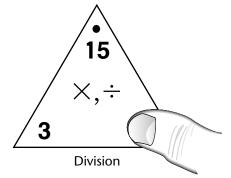
If your child misses a fact, flash the other two fact problems on the card and then return to the fact that was missed.

Example: Your child can't answer $15 \div 3$. Flash 3 \times 5, then 15 \div 5, and finally 15 \div 3 a second time.

Make this activity brief and fun. Spend about 10 minutes each night. The work you do at home will support the work your child is doing at school.







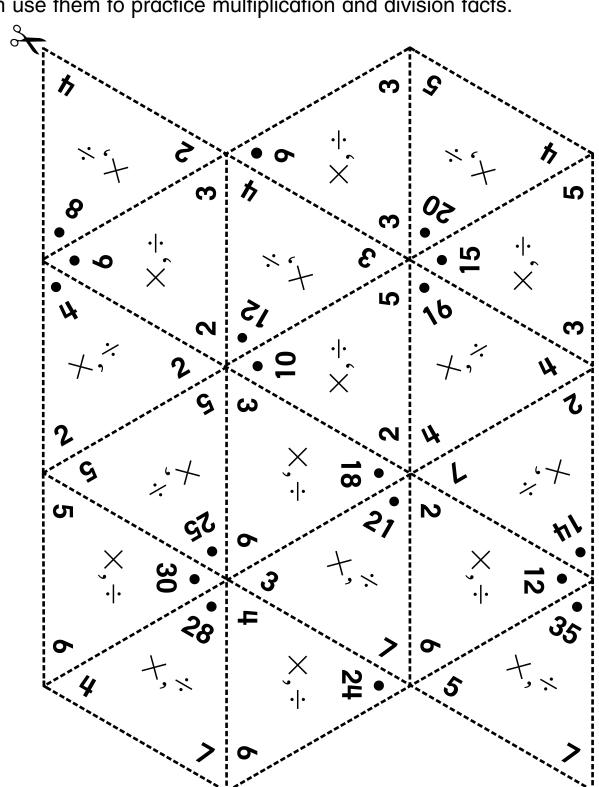


HOME LINK 11-8

×, ÷ Fact Triangles continued



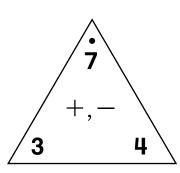
Cut out the Fact Triangles. Show someone at home how you can use them to practice multiplication and division facts.

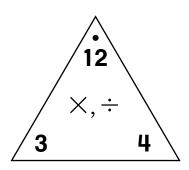


11.8

Exploring Fact Triangles



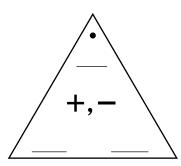


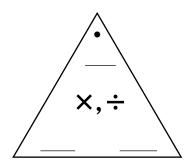


1. Write two ways the Fact Triangles above are alike.

2. Write two ways the Fact Triangles above are different.

3. Fill in the blank addition/subtraction and multiplication/division Fact Triangles below so that they have the same numbers. [Hint: Look for numbers that, when added together, have a sum that is the same as when they are multiplied together. It is a square number.]







Fact Families



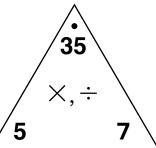
Note

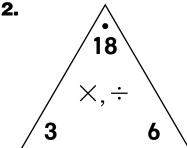
Family Today your child continued to practice multiplication and division facts by playing a game called Beat the Calculator and by using Fact Triangles. Observe as your child writes the fact family for each Fact Triangle below. Use the Fact Triangles that your child brought home yesterday. Spend about 10 minutes practicing facts with your child. Make the activity brief and fun. The work you do at home will support the work your child is doing at school.

Please return this Home Link to school tomorrow.

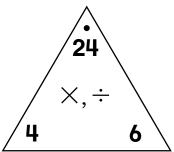
Write the fact family for each Fact Triangle.

1.



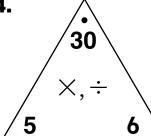


3.





4.





Ten Frames



A Paper-Folding Problem



Imagine folding a piece of paper in half. You would get 2 rectangles. If you fold it in half again, you would get 4 smaller rectangles.

Predict how many small rectangles you would get if you fold a piece of paper in half 6 times. _

After you have made your prediction, try it out and check your answer.

Keep track of your results after each fold to see if there is a pattern.

3	
, / -	

Name Date Time



A Paper-Folding Problem



Imagine folding a piece of paper in half. You would get 2 rectangles. If you fold it in half again, you would get 4 smaller rectangles.

Predict how many small rectangles you would get if you fold a piece of paper in half 6 times.

After you have made your prediction, try it out and check your answer.

Keep track of your results after each fold to see if there is a pattern.



Unit 12: Family Letter



Year-End Reviews and Extensions

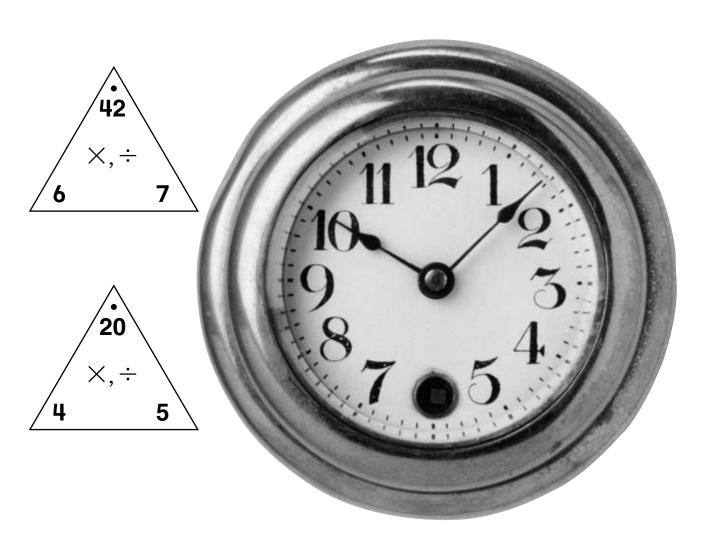
Rather than focusing on a single topic, Unit 12 reinforces some of the main topics covered in second grade.

Children will begin the unit by reviewing time measurements—telling time on clocks with hour and minute hands; naming time in different ways; using larger units of time, such as centuries and decades; and keeping track of time in years, months, weeks, and days.

Children will also work with computation dealing with multiplication facts and the relationship between multiplication and division.

Finally, children will display and interpret measurement data, with special attention to the range, median, and mode of sets of data.

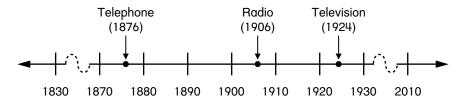
Please keep this Family Letter for reference as your child works through Unit 12.



Vocabulary

Important terms in Unit 12:

timeline A *number line* showing when events took place. For example, the timeline below shows when the telephone, radio, and television were invented.



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

Building Skills through Games

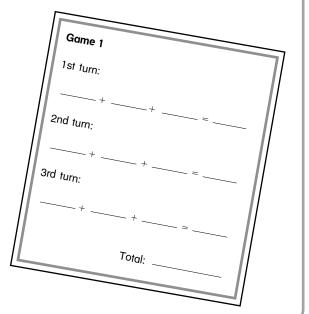
In Unit 12, your child will practice adding and subtracting numbers by playing the following games:

Addition Card Draw

Each player draws the top 3 cards from a deck, records the numbers on the score sheet, and adds the 3 numbers. After 3 turns, players check each other's work with a calculator and add their 3 answers. The player with the higher total wins.

Name That Number

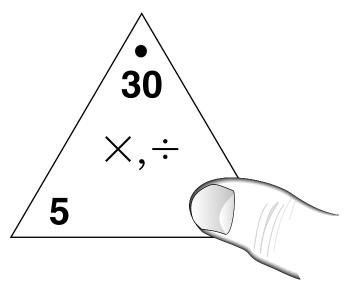
Each player turns over a card to find a number that must be renamed using any combination of five faceup cards.

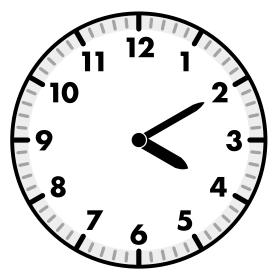


Do-Anytime Activities

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

- **1.** Together, make up multidigit addition and subtraction number stories. Solve them. Share solution strategies.
- **2.** Make timelines of your lives. In addition to personal information, mark various dates of events that interest you, such as events in music, art, sports, or politics.
- **3.** Continue to ask the time. Encourage your child to name time in different ways, such as *twenty to nine* for 8:40 and *half-past two* for 2:30.
- **4.** Continue to review and practice basic facts for all operations, emphasizing the multiplication facts.





FEBRUARY								
Sun	Mon	Tue	Wed	Thu	Fri	Sat		
	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							

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 12+1

1.
$$9 \times 2 = 18$$

$$2 \times 9 = 18$$

$$18 \div 2 = 9$$

$$18 \div 9 = 2$$

3.
$$5 \times 8 = 40$$

$$8 \times 5 = 40$$

$$40 \div 5 = 8$$

4. 184

5. 60

6. 243

Home Link 12+2

2. 8:15

3. 10:45

2. $1 \times 8 = 8$

 $8 \times 1 = 8$

 $8 \div 1 = 8$

 $8 \div 8 = 1$

4.





6.



7. 169

8. 142

9. 91

10. 47

Home Link 12+3

2. 531

3. 280

Home Link 12+5

1. 7

2. 6

3. 7

4. 3

5. 4

6. 4

7. 4

8. 5

9. 7

10. 8

11. 7

12. 9

13. 6

14. 9

Home Link 12+6

1. 30 years

2. dolphins and humans

3. 10 years

4. ostrich

5. squirrel, house cat, lion, horse, ostrich, dolphin, human

6. 30 years

7. 130

8. 156

9. 29

10. 87

Home Link 12+7

1. a. 1,450

b. 1,750

2. a. 2,000

b. 1,300

c. 700

3. 1,450

4. 1,450