

Yeshiva of Central Queens

Summer
BREAK

HOMework

INCOMING
4TH GRADE

NAME:

Lesson 1

Name _____

Numbers to Ten Thousand

Essential Question How can you represent numbers to ten thousand in different ways?

Unlock the Problem



The Thousand Bolts factory uses boxes of 1,000 bolts to fill crates of 10,000 bolts. How many boxes of 1,000 bolts are in each crate of 10,000?

- Circle the number you will need to count to find the answer.

Count by thousands to find the total number of boxes of 1,000 bolts that will go into each crate. Then count the boxes.

1,000 2,000

1

2

So, there are _____ boxes of 1,000 bolts in each crate of 10,000.

Example Suppose the factory has no crates and must use cases of 100 to fill an order for 3,200 bolts. How many cases will it pack?

There are _____ cases of 100 in 1,000.

So, there are _____ cases of 100 in 3,000.

There are _____ cases of 100 in 200.

Add the cases. $30 + 2 =$

So, the factory will pack 32 cases of 100.

Math Talk

What if the factory had boxes of 1,000 and bags of 10 but no cases of 100? Explain how it could pack the order for 3,200 bolts.

Share and Show

1000
1000

1. The Thousand Bolts factory has an order for 3,140 bolts. How can it pack the order using the fewest packages?

2. Suppose the bolt factory has only cases and bags. How can it pack the order for 3,140 bolts?

3. Suppose the bolt factory has only boxes and bags. How can it pack the order for 3,140 bolts?

Remember

1 box = 1,000 bolts

1 case = 100 bolts

1 bag = 10 bolts

On Your Own

Complete the packing chart. Use the fewest packages possible. When there is a zero, use the next smaller size package.

	Number of Bolts Ordered	Crates (Ten Thousands)	Boxes (Thousands)	Cases (Hundreds)	Bags (Tens)	Single Bolts (Ones)
4.	5,267		5			
5.	2,709			7	0	
6.	5,619					
7.	9,416		0		1	6
8.	3,967		0		0	

Problem Solving

9. The Thousand Bolts factory used 9 boxes, 9 cases, and 10 bags to fill an order. How many bolts did they pack?

Lesson 2

Name _____

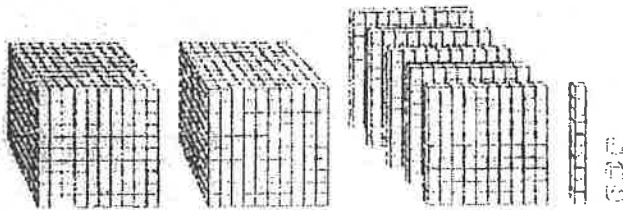
Read and Write Numbers to Ten Thousands

Essential Question What are some ways you can read and write numbers?

Unlock the Problem



The ABC Block Factory receives an order for blocks. The base-ten blocks show the number of blocks ordered.



- How many blocks were ordered?

Math Idea

The location of a digit in a number tells its value.

Each worker on the team checks the order by expressing the number in a different way. What way does each worker use?

Read and write numbers.

Word form is a way to write a number using words.

Sam gets the order and reads the number to Mary: two thousand, five hundred thirteen

Expanded form is a way to write a number by showing the value of each digit.

Mary uses the value of each digit to record the number of blocks that will be in each type of package:

$$2,000 + 500 + 10 + 3$$

Standard form is a way to write a number using the digits 0 to 9, with each digit having a place value.

When the order is complete, Kyle writes the total number of blocks on the packing slip: 2,513

So, Sam says the number using _____

form, Mary uses _____ form.

and Kyle uses _____ form.

Math Talk

- Explain how to find the value of the underlined digit in 7,521.

Share and Show

Math
Journal

1. Write the number shown in expanded form.

TEN THOUSANDS	THOUSANDS	HUNDREDS	TENS	ONES
	7	5	9	8

+ 500 + 90 + _____

Write the number in standard form.

2. $4,000 + 600 + 70 + 4$ _____
 3. eight thousand, two hundred sixty-one _____

Write the value of the underlined digit two ways.

4. 6,920 _____ 5. 8,063 _____

On Your Own

Write the number in standard form.

6. $5,000 + 600 + 90 + 7$ _____
 7. two thousand, three hundred fifty-nine _____
 8. one thousand, three hundred two _____

Write the value of the underlined digit two ways.

9. 6,818 _____ 10. 9,342 _____

11. Rename 3,290 as hundreds and tens.

12. Rename 2,934 as tens and ones.

hundreds _____ tens

tens

ones

Problem Solving

13. The number of children who attended the fair on opening day is 351 more than the value of 4 thousands. How many children attended the fair on opening day?

Lesson 3

Name _____

Relative Size on a Number Line

Essential Question How can you locate and name a point on a number line?

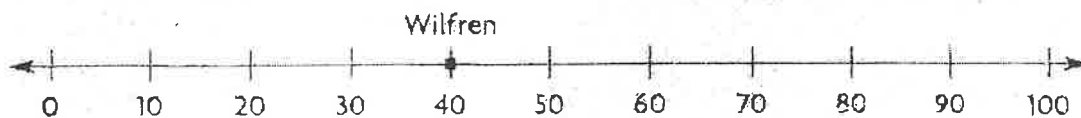
Unlock the Problem



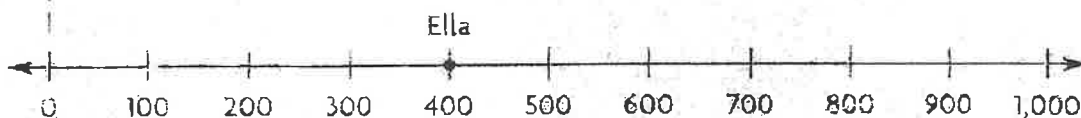
Wilfren has 40 pennies, Ella has 400 pennies, and Matt has 4,000 pennies. How do their amounts of pennies compare?

- Circle the amounts you need to compare.

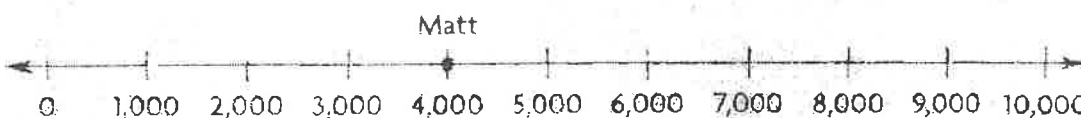
Compare the relative sizes of the amounts of pennies.



Think: 10 tens is 100.



Think: 10 hundreds is 1,000.

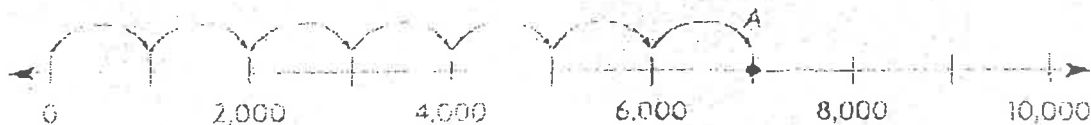


Think: 10 thousands is 10,000.

So, Ella has _____ times as many pennies as

Wilfren, and Matt has _____ times as many pennies as Ella.

Try This! Find the number represented by the point.



Start at 0. Skip count by 1,000s until you reach point A.

There are _____ jumps of 1,000. So, point A represents

Math Talk

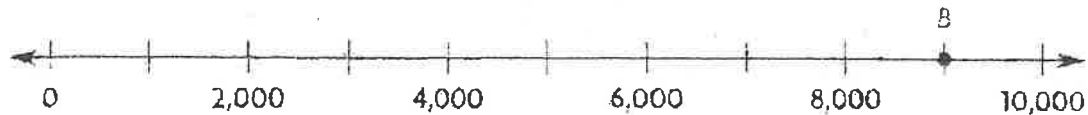
Explain how to locate and draw the point 7,000 on a number line.

Share and Show

MATH
MIND

Find the number that point *B* represents on the number line.

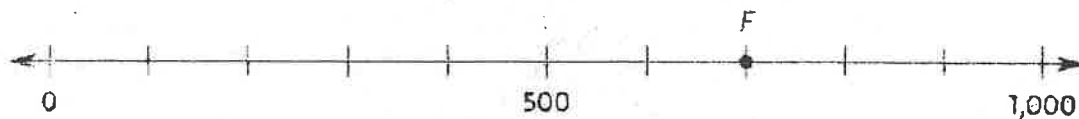
1.



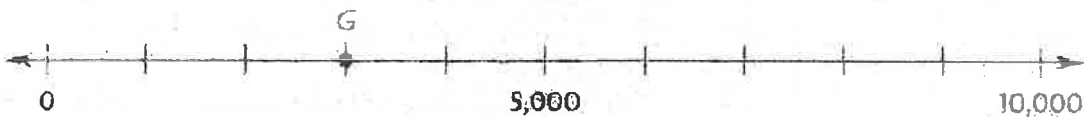
On Your Own

Find the number represented by the point.

2.



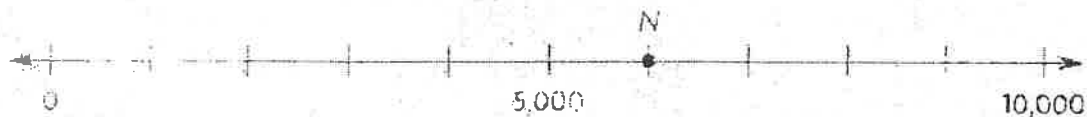
3.



Problem Solving

Use the number line for 4-5.

Nestor and Elliot are playing a number line game.



4. Nestor's score is shown by point *N* on the number line. What is his score?

5. Elliot's score is 8,000. Is Elliot's score located to the right or to the left of Nestor's score? **Explain.**

Lesson 4

Name _____

Compare 3- and 4-Digit Numbers

Essential Question What are some ways you can compare numbers?

Unlock the Problem

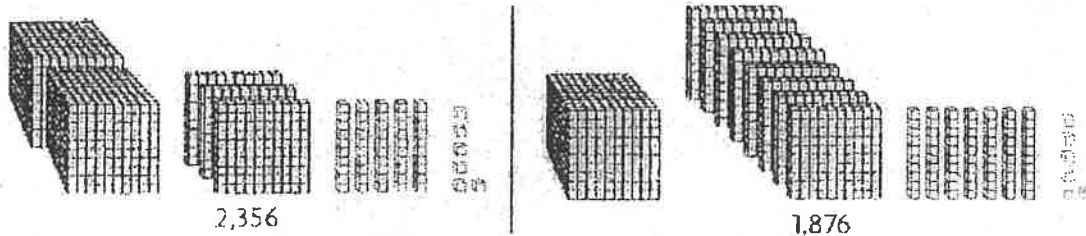
Cody collected 2,365 pennies. Jasmine collected 1,876 pennies. Who collected more pennies?

You can compare numbers in different ways to find which number is greater.

- What do you need to find?

One Way Use base-ten blocks.

Compare the values of the blocks in each place-value position from left to right. Keep comparing the blocks until the values are different.



2 thousands is greater than 1 thousand. So, 2,365 () 1,876.

So, Cody collected more pennies.

Another Way Use place value.

Compare 7,376 and 7,513.

Compare digits in the same place-value position from left to right.

THOUSANDS	HUNDREDS	TENS	ONES
7	3	7	6
7	5	1	3

STEP 1: Compare the thousands. The digits are the same.

STEP 2: Compare the hundreds. 3 () 5

So, 7,376 () 7,513.

Read < as *is less than*.
Read > as *is greater than*.
Read = as *is equal to*.

Math Talk

Explain how you know that 568 is less than 4,786.

Share and Show

2018
2019

1. Compare 2,351 and 3,018. Which number has more thousands? Which number is greater?
-
-

Compare the numbers. Write $<$, $>$, or $=$ in the ().

2. 835 () 853

3. 7,891 () 7,891

4. 809 () 890

5. 3,834 () 3,483

On Your Own

Compare the numbers. Write $<$, $>$, or $=$ in the ().

6. 219 () 2,119

7. 2,517 () 2,715

8. 5,154 () 5,154

9. 5,107 () 5,105

10. 1,837 () 837

11. 9,832 () 9,328

Problem Solving

12. Nina has a dictionary with 1,680 pages. Trey has a dictionary with 1,490 pages. Use $<$, $>$, or $=$ to compare the number of pages in the dictionaries.
-

13. The odometer in Ed's car shows it has been driven 8,946 miles. The odometer in Beth's car shows it has been driven 5,042 miles. Which car has been driven more miles?
-

14. Avery said that she is 3,652 days old. Tamika said that she is 3,377 days old. Who is younger?

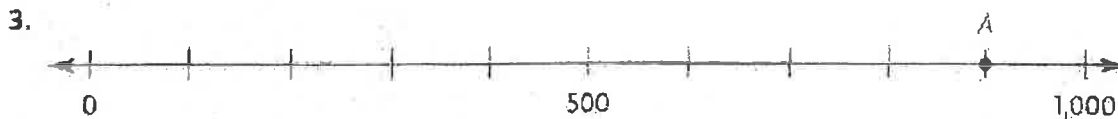
Name _____

Concepts and Skills

Complete the packing chart. Use the fewest packages possible. When there is a zero, use the next smaller size package.

	Number of Bolts Ordered	Crates (Ten Thousands)	Boxes (Thousands)	Cases (Hundreds)	Bags (Tens)	Single Bolts (Ones)
1.	5,267		5			
2.	2,709			.7	0	

Find the number that point A represents on the number line.



Compare the numbers. Write $<$, $>$, or $=$ in the $\bigcirc$.

4. 4,310 $\bigcirc$ 4,023

5. 5,136 $\bigcirc$ 5,136

6. 732 $\bigcirc$ 6,532

7. 9,436 $\bigcirc$ 4,963

Problem Solving

8. The number of people who attended the Spring Festival is 799 more than 8 thousands. How many people attended the festival?

9. There are 1,290 photos on Nadia's memory card. There are 1,450 photos on Trevor's memory card. Use $<$, $>$, or $=$ to compare the number of photos on the memory cards.

Lesson 5

Name _____

Multiply with 11 and 12

Essential Question What strategies can you use to multiply with 11 and 12?

Unlock the Problem



It takes Bobby 11 minutes to walk to school each morning. How many minutes will Bobby spend walking to school in 5 days?

- What are the groups in this problem?

Multiply. $5 \times 11 =$

One Way Break apart an array.

Make 5 rows of 11. 

Use the 10s facts and the 1s facts to multiply with 11. 

$$5 \times (10 + 1)$$

$$5 \times 10 = \underline{\quad\quad\quad} \quad 5 \times 1 = \underline{\quad\quad\quad}$$

$$5 \times 11 = \underline{\quad\quad\quad} + \underline{\quad\quad\quad}$$

$$5 \times 11 = \underline{\quad\quad\quad}$$

So, Bobby will spend _____ minutes walking to school.

Another Way Find a pattern.

Look at the list.

$$1 \times 11 = 11$$

Notice the product has the same factor in the tens and ones places.

$$2 \times 11 = 22$$

$$3 \times 11 = 33$$

$$4 \times 11 = 44$$

To find 5×11 , write the first factor in the tens and ones places.

$$5 \times 11 = \underline{\quad\quad\quad}$$

$$6 \times 11 = 66$$

$$7 \times 11 = 77$$

$$5 \times 11 = 55$$

$$8 \times 11 = 88$$

$$9 \times 11 = 99$$

Try This! What if it took Bobby 12 minutes to walk to school? How many minutes will he spend walking to school in 5 days?

Break apart the factor 12.

$$5 \times (10 + 2)$$

$$5 \times 10 = 50 \quad 5 \times 2 = 10$$

Double a 6s fact.

Find the 6s product.

$$5 \times 6 = 30$$

Double that product.

$$+ \underline{\quad\quad\quad}$$

So, Bobby will spend _____ minutes walking to school.

Share and Show

Math
practice

1. How can you use the 10s facts and the 2s facts to find 4×12 ?

$10 \times 12 = 120$
 $10 \times 12 = 120$
 $10 \times 12 = 120$
 $10 \times 12 = 120$

Find the product.

2. $9 \times 11 =$ _____

3. $7 \times 12 =$ _____

4. _____ $= 4 \times 11$

On Your Own

Find the product.

5. _____ $= 11 \times 6$

6. _____ $= 12 \times 2$

7. $0 \times 11 =$ _____

8. _____ $= 6 \times 12$

9. $8 \times 12 =$ _____

10. $7 \times 11 =$ _____

11. $12 \times 9 =$ _____

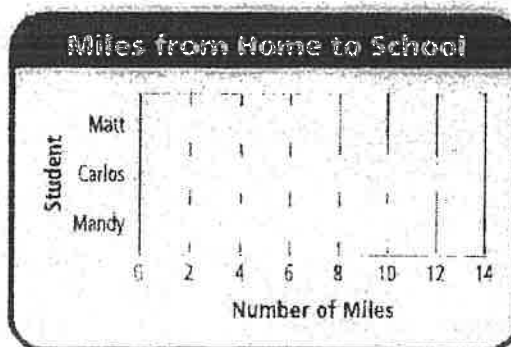
12. $3 \times 12 =$ _____

13. $1 \times 12 =$ _____

Problem Solving

Use the graph for 14–15.

14. The graph shows the number of miles some students travel to school each day. How many miles will Carlos travel to school in 5 days?



15. Suppose that Mandy takes 9 trips to school, and Matt takes 11 trips to school. Who travels more miles? **Explain.**

Lesson 6

Name _____

Divide with 11 and 12

Essential Question What strategies can you use to divide with 11 and 12?

Unlock the Problem



Tara collects 60 postcards. She arranges them in 12 equal stacks. How many postcards are in each stack?

- Do you need to find the number of groups or the number in each group?

Divide. $60 \div 12 = \blacksquare$

One Way Use a multiplication table.

Since division is the inverse of multiplication, you can use a multiplication table to find a quotient.

Think of a related multiplication fact.

$$12 \times \blacksquare = 60$$

- Find the row for the factor 12.
- Look across to find the product, 60.
- Look up to find the unknown factor.
- The unknown factor is 5.

Since $12 \times 5 = 60$, then

$$60 \div 12 = \underline{\quad}$$

×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Another Way Use repeated subtraction.

- Start with 60.
- Subtract 12 until you reach 0.
- Count the number of times you subtract 12.

You subtracted 12 five times.

$$60 \div 12 = \underline{\quad}$$

So, there are 5 postcards in each stack.

$$\begin{array}{r}
 60 \\
 - 12 \\
 \hline
 48
 \end{array}
 \begin{array}{r}
 48 \\
 - 12 \\
 \hline
 36
 \end{array}
 \begin{array}{r}
 36 \\
 - 12 \\
 \hline
 24
 \end{array}
 \begin{array}{r}
 24 \\
 - 12 \\
 \hline
 12
 \end{array}
 \begin{array}{r}
 12 \\
 - 12 \\
 \hline
 0
 \end{array}$$

Math Talk

What other strategies can you use to divide?

Share and Show

NAME _____
GRADE _____

1. Use the multiplication table on page P271 to find $99 \div 11$.

Think: What is a related multiplication fact?

Find the unknown factor and quotient.

2. $11 \times \underline{\hspace{1cm}} = 66$

$66 \div 11 = \underline{\hspace{1cm}}$

3. $2 \times \underline{\hspace{1cm}} = 24$

$24 \div 2 = \underline{\hspace{1cm}}$

4. $3 \times \underline{\hspace{1cm}} = 33$

$33 \div 3 = \underline{\hspace{1cm}}$

5. $12 \times \underline{\hspace{1cm}} = 72$

$72 \div 12 = \underline{\hspace{1cm}}$

On Your Own

Find the unknown factor and quotient.

6. $11 \times \underline{\hspace{1cm}} = 55$

$55 \div 11 = \underline{\hspace{1cm}}$

7. $12 \times \underline{\hspace{1cm}} = 48$

$48 \div 12 = \underline{\hspace{1cm}}$

8. $8 \times \underline{\hspace{1cm}} = 96$

$96 \div 8 = \underline{\hspace{1cm}}$

9. $8 \times \underline{\hspace{1cm}} = 88$

$88 \div 8 = \underline{\hspace{1cm}}$

Find the quotient.

10. $11 \div 11 = \underline{\hspace{1cm}}$

11. $77 \div 7 = \underline{\hspace{1cm}}$

12. $\underline{\hspace{1cm}} = 60 \div 12$

13. $\underline{\hspace{1cm}} = 22 \div 11$

14. $108 \div 9 = \underline{\hspace{1cm}}$

15. $84 \div 12 = \underline{\hspace{1cm}}$

16. $36 \div 3 = \underline{\hspace{1cm}}$

17. $\underline{\hspace{1cm}} = 96 \div 12$

18. $12 \div 12 = \underline{\hspace{1cm}}$

Compare. Write $<$, $>$, or $=$ for each $\bigcirc$.

19. $96 \div 8 \bigcirc 96 \div 12$

20. $77 \div 11 \bigcirc 84 \div 12$

21. $99 \div 11 \bigcirc 84 \div 7$

Problem Solving

22. Justin printed 44 posters to advertise the garage sale. He gave 11 friends the same number of posters to display around the neighborhood. How many posters did Justin give each friend?

ALGEBRA Lesson 7

Name _____

Multiplication and Division Relationships

Essential Question How can you write related multiplication and division equations for 2 digit factors?

Multiplication and division are inverse operations.

Unlock the Problem



Megan has a rose garden with the same number of bushes planted in each of 4 rows. There are 48 bushes in the garden. How many bushes are in each row of Megan's garden?

- What do you need to find?

One Way

Make an array.

$$48 \div 4 = \blacksquare$$

Count 48 tiles. Make 4 rows by placing 1 tile in each row.

Continue placing 1 tile in each of the 4 rows until all the tiles are used.

Draw the array you made.

There are _____ tiles in each row.

So, there are _____ bushes in each row of Megan's garden.

Another Way

Write related equations.

$$48 \div 4 = \blacksquare$$

Think: 4 times what number equals 48?

$$4 \times \underline{\hspace{2cm}} = 48$$

You can check your answer using repeated addition.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Write related equations.

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 48$$

$$48 \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

**Math
Talk**

How can you tell if two equations are related?

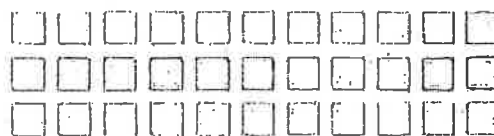
Share and Show

WATCH
POSSIBLE

1. Complete the related equations for this array.

$3 \times 11 = 33$

$33 \div 3 = 11$



Complete the related multiplication and division equations.

2. $1 \times 11 = \underline{\quad}$

3. $5 \times \underline{\quad} = 60$

4. $\underline{\quad} \times 11 = 77$

$\underline{\quad} \times 1 = 11$

$12 \times 5 = \underline{\quad}$

$\underline{\quad} \times 7 = 77$

$11 \div 1 = \underline{\quad}$

$\underline{\quad} \div 5 = 12$

$77 \div \underline{\quad} = 11$

$\underline{\quad} \div 11 = 1$

$60 \div \underline{\quad} = 5$

$\underline{\quad} \div 11 = 7$

On Your Own

Complete the related multiplication and division equations.

5. $\underline{\quad} \times 12 = 84$

6. $6 \times \underline{\quad} = 66$

7. $12 \times 8 = \underline{\quad}$

$\underline{\quad} \times 7 = 84$

$11 \times \underline{\quad} = 66$

$8 \times \underline{\quad} = 96$

$\underline{\quad} \div 7 = 12$

$66 \div 6 = \underline{\quad}$

$96 \div \underline{\quad} = 8$

$84 \div \underline{\quad} = 7$

$66 \div 11 = \underline{\quad}$

$96 \div 8 = \underline{\quad}$

Problem Solving

8. Megan cut 108 roses to make flower arrangements. She made 9 equal arrangements. How many roses were in each arrangement?

9. Megan put 22 roses in a vase. She cut the same number of roses from each of 11 different bushes. How many roses did she cut from each bush?

Lesson 8

Name _____

Use Multiplication Patterns

Essential Question How can you multiply with 10, 100, and 1,000?

Unlock the Problem



Mrs. Goldman ordered 4 boxes of yo-yos for her toy store. Each box had 100 yo-yos. How many yo-yos did Mrs. Goldman order?

- Circle the numbers you need to use.
- What operation can you use to find the total when you have equal groups?

Use a basic fact and a pattern to multiply.

Factors **Products**

$$4 \times 1 = 4$$

Think: Use the basic fact $4 \times 1 = 4$.

$$4 \times 10 = 40$$

Look for a pattern of zeros.

$$4 \times 100 = 400$$

So, Mrs. Goldman ordered 400 yo-yos.

As the number of zeros in a factor increases, the number of zeros in the product increases.

Try This! Use a basic fact and a pattern to find the products.

A. $1 \times 3 = 3$

B. $5 \times ? = 5$

$$10 \times 3 = \underline{\quad}$$

$$5 \times 10 = 50$$

$$5 \times 100 = \underline{\quad}$$

$$5 \times 1,000 = \underline{\quad}$$

Math Talk

When multiplying $9 \times 1,000$, how many zeros will be in the product? Explain.

Share and Show

1000
1000

1. Explain how to use a basic fact and a pattern to find 6×100 .

Use a basic fact and a pattern to find the products.

2. $7 \times 10 =$ _____ 3. $10 \times 5 =$ _____ 4. $3 \times 10 =$ _____
 $7 \times 100 =$ _____ $100 \times 5 =$ _____ $3 \times 100 =$ _____
 $7 \times 1,000 =$ _____ $1,000 \times 5 =$ _____ $3 \times 1,000 =$ _____

On Your Own

Use a basic fact and a pattern to find the products.

5. $2 \times 10 =$ _____ 6. $10 \times 8 =$ _____ 7. $9 \times 10 =$ _____
 $2 \times 100 =$ _____ $100 \times 8 =$ _____ $9 \times 100 =$ _____
 $2 \times 1,000 =$ _____ $1,000 \times 8 =$ _____ $9 \times 1,000 =$ _____

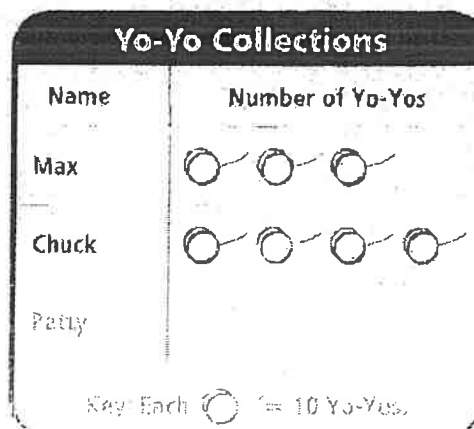
Find the product.

8. $10 \times 8 =$ _____ 9. $6 \times 100 =$ _____ 10. _____ $= 4 \times 100$
11. $1,000 \times 4 =$ _____ 12. _____ $= 1,000 \times 3$ 13. $9 \times 100 =$ _____

Problem Solving

Use the picture graph.

14. Patty has 20 fewer yo-yos in her collection than Chuck. Draw yo-yos in the picture graph to show the number of yo-yos in Patty's collection. Explain your answer.



Name _____

Use Models to Multiply Tens and Ones

Essential Question How can you use base-ten blocks and area models to model multiplication with a 2-digit factor?

Unlock the Problem

Three groups of 14 students toured the state capitol in Columbus, Ohio. How many students toured the capitol in all?

Multiply. $3 \times 14 = \blacksquare$

- What do you need to find?

- Circle the numbers you need to use.

One Way

STEP 1

Model 3×14 with base-ten blocks.



3 rows of 10



3 rows of 4

STEP 2

Multiply the tens and ones.
Record each product.



$3 \times 10 = \underline{\hspace{2cm}}$ $3 \times 4 = \underline{\hspace{2cm}}$

STEP 3

Add the products.

$30 + 12 = 42$

$3 \times 14 = 42$

Another Way

STEP 1

Model 3×14 with an area model.



3 rows of 10

3 rows of 4

STEP 2

Multiply the tens.

Multiply the ones.

$3 \times 10 = \underline{\hspace{2cm}}$

$3 \times 4 = \underline{\hspace{2cm}}$

STEP 3

Add the products.

$30 + 12 = 42$

$3 \times 14 = 42$

Math Talk

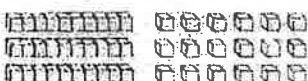
How are the two ways to find a product alike?

Share and Show

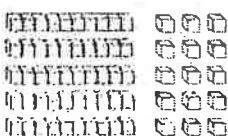
18 ÷ 4 = 4 R2

1. One way to model 18 is 1 ten 8 ones.
How can knowing this help you
find 4×18 ?

Find the product. Show your multiplication and addition.

2. 

$3 \times 16 = \blacksquare$

3. 

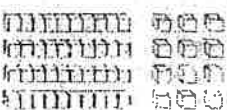
$5 \times 13 = \blacksquare$

4. 

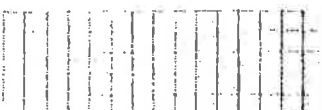
$6 \times 14 = \blacksquare$

On Your Own

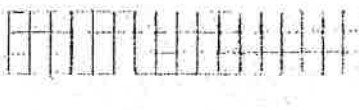
Find the product. Show your multiplication and addition.

5. 

$4 \times 13 = \blacksquare$

6. 

$5 \times 15 = \blacksquare$

7. 

$3 \times 17 = \blacksquare$

Problem Solving

8. Randy rakes yards for \$5 an hour. How much
money does he earn if he works for 12 hours?

Lesson 10

Name _____

Model Division with Remainders

Essential Question How can you use counters to model division with remainders?

Unlock the Problem



Madison has 13 seeds. She wants to put the same number of seeds in each of 3 pots. How many seeds can Madison put into each pot? How many seeds are left over?

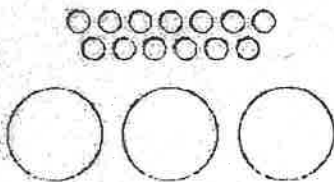
- How do you know how many groups to make?

Activity Materials

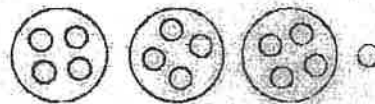
counters

Use counters to find $13 \div 3$.

STEP 1 Use 13 counters. Draw 3 circles for the 3 pots.



STEP 2 Place one counter in each group until there are not enough to put 1 more in each of the groups.



There are _____ counters in each circle.

There is _____ counter left over.

$13 \div 3$ is 4 with 1 left over.

The quotient is 4.

The remainder is 1.

So, Madison can put 4 seeds in each pot. There is 1 seed left over.

After dividing a group of objects into equal groups as large as possible, there may be some left over. The amount left over is called the **remainder**.

Math Talk

Explain why you cannot have a remainder of 3 when you divide by 3.

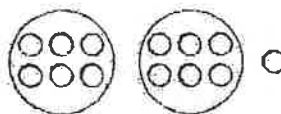
Try This! What if Madison wants to put 4 seeds in each pot. How many pots will Madison need? How many seeds will be left over?

Share and Show

MATH
WORK

1. Divide 13 counters into 2 equal groups.

There are _____ counters in each group, and
_____ counter left over.



Complete.

2. April divided 17 counters into 4 equal groups.

There were _____ counters in each
group and _____ counter left over.

3. Divide 20 counters into groups of 6.

There are _____ groups and _____
counters left over.

On Your Own

Complete.

4. Divide 14 pencils into 3 equal groups.

There are _____ pencils in each group
and _____ pencils left over.

5. Divide 60 pieces of chalk into groups
of 8.

There are _____ groups and _____
pieces of chalk left over.

Find the total number of objects.

6. There are 2 shoes in each of
6 groups and 1 shoe left over.

There are _____ shoes in all.

7. There are 4 apples in each of
3 groups and 2 apples left over.

There are _____ apples in all.

Problem Solving

Use the bar graph for 8.

8. If Hector divides the oak leaves evenly into
4 display boxes, how many leaves will be in
each box? How many leaves will be left over?



Name _____

Use Models to Divide Tens and Ones

Essential Question How can you model division with a 2 digit quotient?

Unlock the Problem

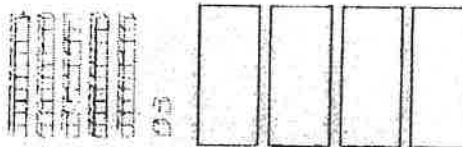
Emma baked 52 muffins. She wants to put an equal number of muffins on each of 4 trays. How many muffins can she put on each tray?

- Circle the numbers you need to use.
- How many equal groups are there?

Find $52 \div 4$.

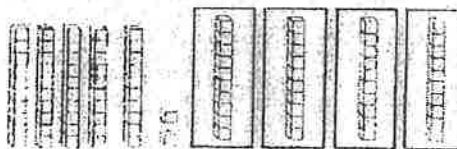
STEP 1

Use base-ten blocks to model the problem. Draw 4 rectangles to represent the 4 equal groups.



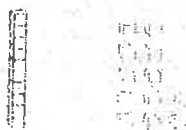
STEP 2

Share the tens. Place 1 ten in each group until there are not enough tens to put 1 more ten in each group.



STEP 3

Regroup the remaining ten as ones. There are now 12 ones.



STEP 4

Share the ones. Place 1 one in each group until there are not enough ones to put 1 more one in each group.



So, Emma can put _____ muffins on each tray.

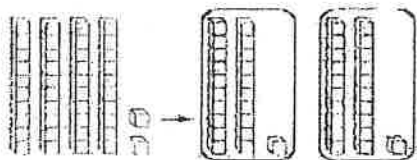
**Moth
Talk**

How you can check your answer.

Share and Show

Math
Board

1. Find $42 \div 2$.



- How many equal groups are there? _____
- How many tens go in each group? _____
- How many ones go in each group? _____
- The quotient is _____.

Use base-ten blocks and your MathBoard to divide.

2. $65 \div 5 =$ _____

3. $90 \div 3 =$ _____

4. $88 \div 4 =$ _____

On Your Own

Use base-ten blocks and your MathBoard to divide.

5. $72 \div 2 =$ _____

6. $69 \div 3 =$ _____

7. $96 \div 6 =$ _____

Problem Solving

8. Roger has 84 trading cards. He wants to put an equal number in each of 3 boxes. How many cards will he put into each box?

9. Riley has 78 postcards. She wants to put 6 on each poster board. How many poster boards will she need?

Name _____

Concepts and Skills

Find the product.

1. _____ $= 11 \times 5$

2. $12 \times 7 =$ _____

Find the unknown factor and quotient.

3. $4 \times$ _____ $= 44$

$44 \div 4 =$ _____

4. Write the related multiplication and division equations for the numbers 5, 12, 60.

Use a basic fact and a pattern to find the products.

5. $3 \times 10 =$ _____

$3 \times 100 =$ _____

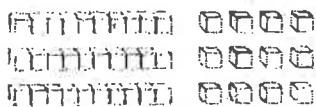
$3 \times 1,000 =$ _____

6. $10 \times 7 =$ _____

$100 \times 7 =$ _____

$1,000 \times 7 =$ _____

Find the product. Show your multiplication and division.

7.  $3 \times 10 =$ _____

$3 \times 4 =$ _____

$3 \times 14 =$ _____

$3 \times 14 =$ _____

Use base-ten blocks and your MathBoard to divide.

8. $132 \div 6 =$ _____

9. $160 \div 8 =$ _____

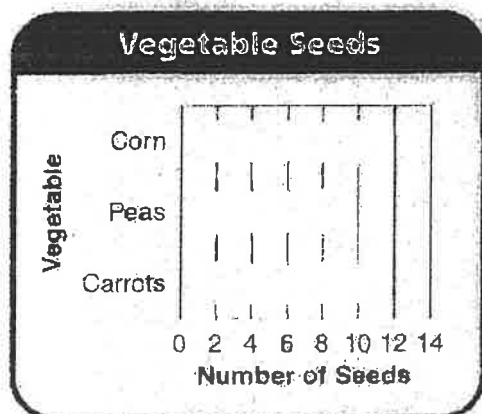
Problem Solving

10. Jerry printed 48 photos. He gave 4 friends the same number of photos. How many photos did each friend receive?

11. Tina divides 17 crayons into 3 equal groups. How many crayons will be in each group? How many crayons will be left over?

Fill in the bubble for the correct answer choice.

12. Marita cuts 72 daisies to make bouquets. She makes 6 equal bouquets. How many daisies are in each bouquet?
- (A) 6 (C) 8
(B) 7 (D) 12
13. Christine charges \$5 an hour to babysit. How much money does she earn in 16 hours?
- (A) \$21 (C) \$64
(B) \$50 (D) \$80
14. Use the bar graph. Hector divides the carrot seeds evenly in 4 garden plots. How many carrot seeds will be left over?



- (A) 5
(B) 4
(C) 3
(D) 2
15. Roberto has 39 model cars. He wants to display an equal number of model cars on each of 3 shelves. How many model cars will he put on each shelf?
- (A) 2 (C) 13
(B) 9 (D) 39

Lesson 12

Name _____

Model Tenths and Hundredths

Essential Question How can you model and write fractions in tenths and hundredths?

Unlock the Problem



You can use models to represent fractions in tenths and hundredths.

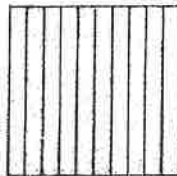
- What do you need to find to write the fraction?

Example

A

STEP 1

This model has 10 equal parts. Each part is one tenth. Shade three parts out of ten equal parts.



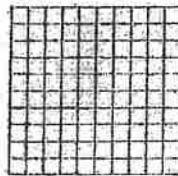
STEP 2

Write the fraction.
Think: Three tenths are shaded.

B

STEP 1

This model has 100 equal parts. Each part is one hundredth. Shade eight of one hundred equal parts.

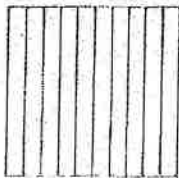


STEP 2

Write the fraction.
Think: Eight hundredths are shaded.

Try This!

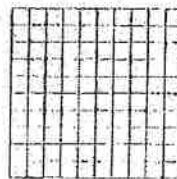
Shade the model to show nine of the ten equal parts.



Read:

Write:

Shade the model to show sixty-five of the hundred equal parts.



Read:

Write:

Math Talk

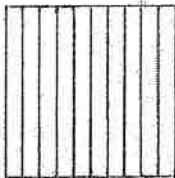
Which number in a fraction represents the number of parts being counted, and which represents the number of equal parts in the whole?

Share and Show



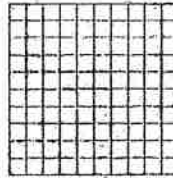
Write the fraction that names the shaded part.

1.

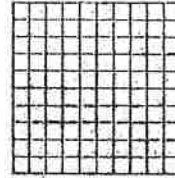


Think: How many equal parts are shaded?

2.

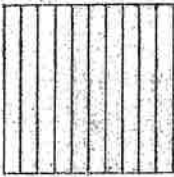


3.

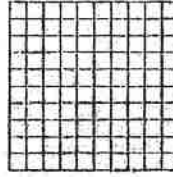


Shade to model the fraction. Then write the fraction in numbers.

4. three tenths



5. twenty-three hundredths



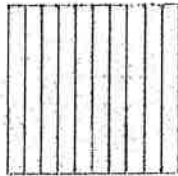
On Your Own

Write the fraction that names the shaded part.

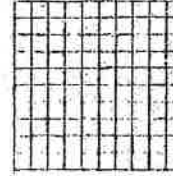
6.



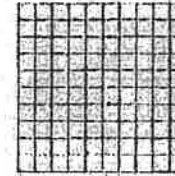
7.



8.



9.



Problem Solving



10. Each player shot a basketball 10 times. Eric made 4 baskets. Write a fraction to represent the part of Eric's shots that were baskets.

11. Nina asked 100 students if they have a pet. Of the students, $\frac{19}{100}$ have a cat. How many students have a cat?

Name _____

Lesson 13

Fractions Greater Than One

Essential Question When might you use a fraction greater than 1 or a mixed number?

Unlock the Problem



Troy uses $\frac{1}{4}$ of a box of clay to make one model of a car. How many boxes of clay does he use to make 5 model cars?

- How much clay does Troy use to make each model car?

- How many model cars does Troy make?

Make a model.

- Draw squares divided into fourths to show the boxes of clay. Shade $\frac{1}{4}$ for the amount of clay Troy uses for each of the 5 model cars.
- Count the number of shaded parts. There are _____ shaded parts.
- Write the fraction.



Think: $\frac{4}{4} = 1$

One whole and one fourth are shaded.

Write: $1\frac{1}{4}$

☐ shaded parts
☐ parts in the whole

The number $\frac{5}{4}$ is a fraction greater than 1. A fraction greater than 1 can be written as a **mixed number**. A mixed number has a whole number and a fraction.

Read $1\frac{1}{4}$ as one and one fourth.

So, Troy uses $\frac{5}{4}$ or $1\frac{1}{4}$ boxes of clay to make 5 model cars.

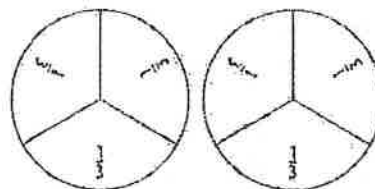
Math Talk

Why are $\frac{5}{4}$ and $1\frac{1}{4}$ equal?

Share and Show

MATH
HOOD

1. Each fraction circle is 1 whole. Write a mixed number for the parts that are shaded.



There are _____ parts shaded.

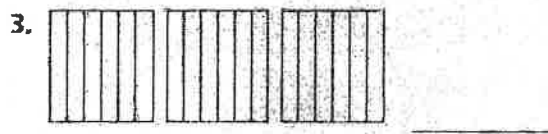
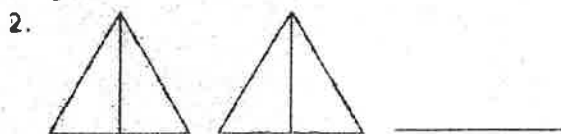
There are _____ equal parts in the whole.

Fraction: $\frac{\boxed{}}{\boxed{}}$ shaded parts
 $\frac{\boxed{}}{\boxed{}}$ parts in a whole

There is _____ whole shaded and _____ thirds shaded.

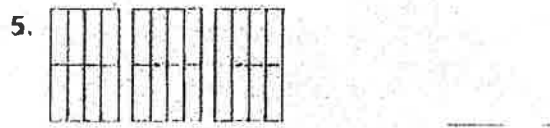
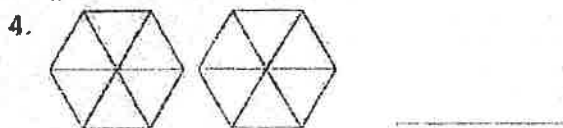
The mixed number is _____.

Each shape is 1 whole. Write a mixed number for the parts that are shaded.



On Your Own

Each shape is 1 whole. Write a mixed number for the parts that are shaded.



Problem Solving

6. Luis played $\frac{6}{4}$ games of soccer this season. How can you write the number of games Luis played as a mixed number?
7. Marci used $\frac{7}{3}$ packages of juice drinks. How can you write the number of packages of juice drinks Marci used as a mixed number?

Name _____

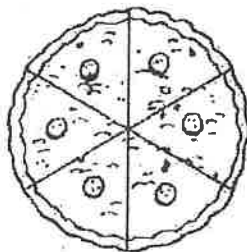
Equivalent Fractions

Essential Question How can you use models to find equivalent fractions?

Unlock the Problem



Bart brought an apple pie to the picnic. He cut the pie into 6 equal pieces and 3 pieces were eaten.



- What fraction names the amount of the pie that was eaten? _____
- What fraction names the amount of the pie that was left over? _____

Bart divided each of the leftover pieces into 2 equal pieces. Draw a dashed line on each piece to show how Bart divided it.

After you divide each sixth-size piece into 2 equal pieces, there will be 12 pieces in the whole pie. The pieces are called twelfths.

- What fraction names the total number of pieces

Bart has left? _____

$\frac{3}{6}$ and $\frac{6}{12}$ are equivalent since they both name the same amount of the pie.

Math Talk

How do the size of the parts compare in the equivalent fractions? How do the number of parts compare?

Share and Show

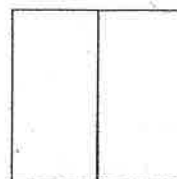
MATH
BOOK

Use models to find the equivalent fraction.

1. $\frac{1}{2} = \frac{\quad}{4}$

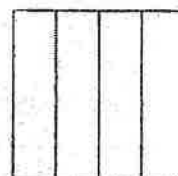
This model shows a whole divided into 2 equal parts.

Shade the model to show the fraction $\frac{1}{2}$.



This model shows a whole divided into 4 equal parts.

Shade the model to show a fraction equivalent to $\frac{1}{2}$.

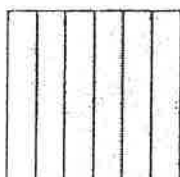
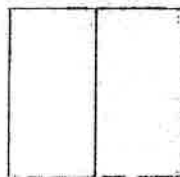


So, $\frac{1}{2} = \frac{2}{4}$

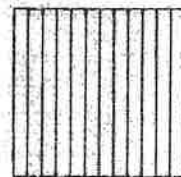
On Your Own

Use models to find the equivalent fraction.

2. $\frac{1}{2} = \frac{\quad}{6}$



3. $\frac{9}{12} = \frac{\quad}{4}$



Problem Solving

4. A loaf of bread has 12 slices. Micky ate $\frac{1}{4}$ of the loaf. Write the fraction of the loaf Micky ate in twelfths.

5. Sandra used $\frac{1}{4}$ of a meter of string to make a bracelet. Write the fraction of a meter of string Sandra used in eighths.

Name _____

Lesson 15

Equivalent Fractions on a Multiplication Table

Essential Question How can you generate equivalent fractions using a multiplication table?

CONNECT You can use a model to show the equivalent fractions $\frac{1}{2}$, $\frac{2}{4}$, and $\frac{3}{6}$.


 $\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$

Think: The same amount is shaded in the models; the second model and third model have more parts shaded.

Unlock the Problem



You can use a multiplication table for other equivalent fractions for $\frac{1}{2}$.

Activity What are some equivalent fractions for $\frac{1}{2}$?

Materials • multiplication table

- Shade the row for the numerator of the fraction $\frac{1}{2}$. The numerator is 1.
- Shade the row for the denominator of the fraction $\frac{1}{2}$. The denominator is 2.
- Look across the rows for numerator 1 and denominator 2.

- In a multiplication table, how are a product and the product below it related?

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30

Write the products with the numerator 1 as a factor. Then write the products with the denominator 2 as a factor. The first three are done for you.

numerator $\longrightarrow \frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{\quad}{8} = \frac{6}{\quad}$
 denominator $\longrightarrow$

Math Talk

Why is the arrangement of factors and products in a multiplication table helpful in finding equivalent fractions?

- What do you notice about the products from the column for 1 to the column for 2?

The numerator and denominator both increase by a factor of _____.

- What do you notice about the products from the column for 1 to the column for 3?

The numerator and denominator both increase by a factor of _____.

What do you notice about the products from the column for 1 to the column for 4?

The numerator and denominator both increase by a factor of _____.

So $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, and $\frac{4}{8}$ are some equivalent fractions for $\frac{1}{2}$.

Math Idea

To find an equivalent fraction, you can multiply both the numerator and denominator by the same number.

Share and Show

1000

Use a multiplication table to find equivalent fractions.

1. Write 3 equivalent fractions for $\frac{1}{3}$.

- Shade the row for the numerator of the fraction $\frac{1}{3}$. The numerator is _____.

- Shade the row for the denominator of the fraction $\frac{1}{3}$. The denominator is _____.

- Look across the rows for numerator 1 and denominator 3.

Write the products with the numerator 1 as a factor. Then write the products with the denominator 3 as a factor.

$$\begin{array}{l} \text{numerator} \longrightarrow \\ \text{denominator} \longrightarrow \end{array} \frac{1}{3} = \frac{\quad}{6} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$$

$$\text{So, } \frac{1}{3} = \frac{\quad}{\quad} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$$

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30

List 3 equivalent fractions.

2. $\frac{1}{6}$

3. $\frac{1}{4}$

On Your Own

Use a multiplication table to find three equivalent fractions.

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

5. $\frac{3}{10}$

Problem Solving

6. On Jan's soccer team, $\frac{1}{5}$ of the players are on the field. What are three equivalent fractions that name the part of the team on the field?

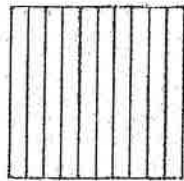
7. Chen used $\frac{3}{4}$ of a carton of milk. What are three equivalent fractions that name the part of the carton of milk that Chen used?

Name _____

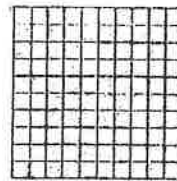
Concepts and Skills

Write the fraction that names the shaded part.

1.



2.



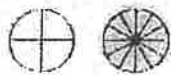
Each shape is 1 whole. Write a mixed number for the parts that are shaded.

3.

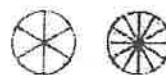


Use models to find the equivalent fraction.

4. $\frac{1}{4} = \frac{\quad}{12}$



5. $\frac{5}{6} = \frac{\quad}{12}$



Use a multiplication table to find three equivalent fractions.

6. $\frac{3}{4}$

7. $\frac{4}{10}$

Problem Solving

8. Three friends shared 4 pies equally. Each person got $\frac{4}{3}$ pies. How can you write how much pie each person got as a mixed number?

9. Bill bought a large submarine sandwich and cut it into 8 equal pieces. He ate $\frac{1}{4}$ of the sandwich. How can you write how much of the sandwich Bill ate as eighths?

Fill in the bubble for the correct answer choice.

10. Each player hit a baseball 10 times. Linda batted 8 balls to the outfield. Write a fraction to show what part of 10 hits Linda batted to the outfield.

(A) $\frac{18}{18}$

(B) $\frac{10}{8}$

(C) $\frac{9}{10}$

(D) $\frac{8}{10}$

11. Vilma used $\frac{8}{3}$ packages of graham crackers to make piecrusts. How can you write the packages of crackers Vilma used as a mixed number?

(A) $2\frac{1}{8}$

(C) $2\frac{2}{3}$

(B) $2\frac{1}{3}$

(D) $3\frac{1}{3}$

12. Sam used $\frac{10}{12}$ of a meter of ribbon to decorate a picture frame. What fraction of a meter of ribbon, in sixths, did Sam use?

(A) $\frac{2}{12}$

(B) $\frac{5}{6}$

(C) $\frac{6}{12}$

(D) $\frac{12}{10}$

13. Leona used $\frac{3}{8}$ of a bottle of juice. Which is an equivalent fraction that names the part of the bottle of juice that Leona used?

(A) $\frac{2}{10}$

(C) $\frac{3}{4}$

(D) $\frac{9}{24}$