

BLACKLINES

1 2 3 PRACTICE BOOK

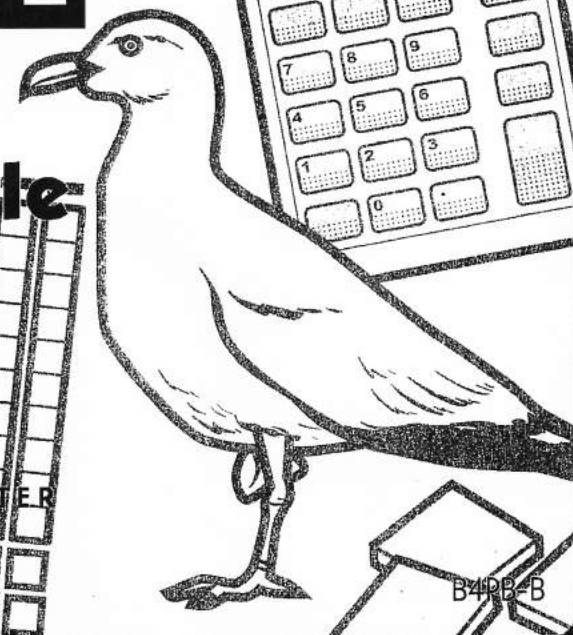
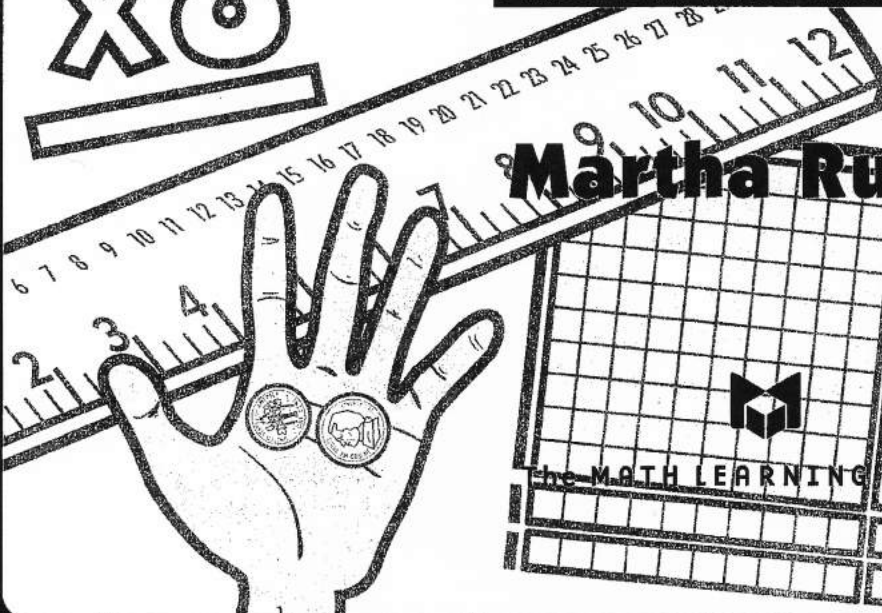


BRIDGES IN MATHEMATICS

4

18
x 8

Martha Ruttle



THE MATH LEARNING CENTER

NAME _____

DATE _____

Tasty Treats

1 Joseph works at an ice cream stand. He sold 5 milkshakes per hour on Saturday. If he worked for 8 hours, how many milkshakes did he sell on Saturday? Show all your work.



2 On the last day of school, Mr. Jackson brought in some cookies for the 6 students in his reading group. He had a box with 15 cookies in it and, to be fair, he gave each student the same number of cookies. How many cookies did each student get? Show all your work.



CHALLENGE

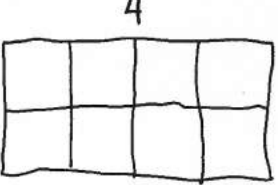
3 At her farm stand, Judy had 126 pounds of lettuce, 267 pounds of corn, and 155 pounds of tomatoes. She sold 83 pounds of lettuce, 182 pounds of corn, and 86 pounds of tomatoes. How many pounds of vegetables does she have left? Show all your work.

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Arrays & Factors

1 Draw and label a rectangular array to show two factors for each number. Do not use 1 as one of your factors. Then write the fact family that goes with your array.

<p>example 8</p> <div style="text-align: center;">  </div> $\begin{array}{r} 2 \times 4 = 8 \\ 4 \times 2 = 8 \\ 8 \div 4 = 2 \\ 8 \div 2 = 4 \end{array}$	<p>a 16</p> $\begin{array}{r} \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \div \underline{\quad} = \underline{\quad} \\ \underline{\quad} \div \underline{\quad} = \underline{\quad} \end{array}$	<p>b 18</p> $\begin{array}{r} \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \div \underline{\quad} = \underline{\quad} \\ \underline{\quad} \div \underline{\quad} = \underline{\quad} \end{array}$
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2 List all the factors of each number below.

ex 12	$\overbrace{1, 2, 3, 4, 6, 12}$	a 16	
b 17		c 24	
d 9		e 36	

3a Circle the prime number(s) in problem 2.

b Draw a square around the square number(s) in problem 2.



CHALLENGE

4 Fill in the missing digits in the problems below.

example

$$\begin{array}{r} 7\cancel{8} \boxed{3} 4 \\ - 69 \boxed{3} \\ \hline \boxed{1} 4 1 \end{array}$$

a

$$\begin{array}{r} 3 \boxed{\quad} 6 \\ + \boxed{\quad} 9 \boxed{\quad} \\ \hline 7 0 4 \end{array}$$

b

$$\begin{array}{r} 6 2 3 \\ - \boxed{\quad} 4 \boxed{\quad} \\ \hline 1 \boxed{\quad} 7 \end{array}$$

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The Big Race & the Walk-a-Thon

1 Hannah is running in big race that is 27 kilometers long. If she runs 9 kilometers per hour, how long will it take her to run the race? Show all your work.



2 Peter is in a walk-a-thon. He walks about 5 kilometers per hour. If he walks for 6 hours, about how far will he walk? Show all your work.



3 There are 32 students in Ms. Lopez's fourth grade class. If she made 2 equal groups of students, there would be 16 students in each group. What are the other ways she could divide the students into equal groups? Show all your work.

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Area & Perimeter Story Problems

You can make sketches to help solve the problems below. Remember to include the units of measurement in your answers. Show all of your work.

1a The classroom rug is 9 feet long and 8 feet wide. What is the total area of the rug?

b What is the perimeter of the rug?

2a Chrissy is going to make a big painting on a piece of wood that is 4 feet wide and 7 feet long. What is the total area of the piece of wood?

b What is the perimeter of the piece of wood?

3 The school playground measures 465 feet by 285 feet. What is the perimeter of the playground?

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Place Value & Perimeter

1 Write each number below in standard form.

example twenty-three thousand, five hundred six 23,506

a nine thousand, two hundred forty-eight _____

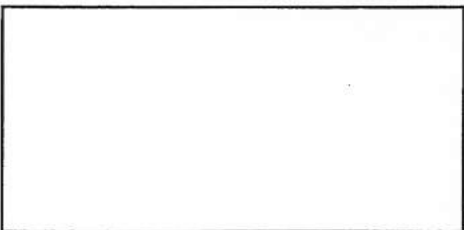


b seventeen thousand, six hundred thirty-three _____

c thirty-two thousand, fifty-eight _____

2 Identify the place value and value of the underlined digit in each number.

Number	Place Value	Value
ex 3 <u>6</u> ,874	thousands	six thousand
a 17, <u>6</u> 04		
b 8, <u>0</u> 97		
c <u>4</u> 1,000		

3 Find the perimeter of each rectangle below. Show your work.

<p>example Perimeter <u>1,726"</u></p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>583"</p>  <p>280"</p> </div> <div> $\begin{array}{r} 1 \\ 280'' \\ + 280'' \\ \hline 560'' \end{array}$ $\begin{array}{r} 1 \\ 583'' \\ + 583'' \\ \hline 1,166'' \end{array}$ $\begin{array}{r} 1 \\ 1,166'' \\ + 560'' \\ \hline 1,726'' \end{array}$ </div> </div>		
<p>a Perimeter _____</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>126"</p>  <p>234"</p> </div> </div>	<p>b Perimeter _____</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>196"</p>  <p>285"</p> </div> </div>	

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Multiplication & Division Practice

1 Solve the following multiplication and division problems.

$$\begin{array}{r} 7 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$$

$32 \div 4 = \underline{\quad\quad}$ $20 \div 5 = \underline{\quad\quad}$ $16 \div 8 = \underline{\quad\quad}$ $24 \div 3 = \underline{\quad\quad}$

$24 \div 4 = \underline{\quad\quad}$ $15 \div 3 = \underline{\quad\quad}$ $40 \div 5 = \underline{\quad\quad}$ $36 \div 6 = \underline{\quad\quad}$

2 Fill in the missing numbers.

$$\begin{array}{r} 9 \\ \times 7 \\ \hline \square \end{array}$$

$$\begin{array}{r} 3 \\ \times 0 \\ \hline \square \end{array}$$

$$\begin{array}{r} 7 \\ \times 7 \\ \hline \square \end{array}$$

$$\begin{array}{r} 1 \\ \times 5 \\ \hline \square \end{array}$$

$$\begin{array}{r} 5 \\ \times 8 \\ \hline \square \end{array}$$

$$\begin{array}{r} 7 \\ \times \square \\ \hline 42 \end{array}$$

$$\begin{array}{r} 5 \\ \times \square \\ \hline 40 \end{array}$$

$$\begin{array}{r} \square \\ \times 8 \\ \hline 64 \end{array}$$

$$\begin{array}{r} \square \\ \times 4 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 3 \\ \times \square \\ \hline 18 \end{array}$$

3 Solve the following multiplication problems.

$$\begin{array}{r} 4 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 100 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 1,000 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 100 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 1,000 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 100 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 1,000 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 100 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \\ \times 1,000 \\ \hline \end{array}$$



CHALLENGE

4 Fill in the missing numbers.

$300 \div \underline{\quad\quad} = 3$ $8,000 \div \underline{\quad\quad} = 1,000$ $40 \div \underline{\quad\quad} = 4$

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Expanded Notation & Fact Families

1 Complete each equation by writing a number in standard form.

ex $17,508 = 10,000 + 7,000 + 500 + 8$	a _____ = $20,000 + 400 + 50 + 6$
b _____ = $30,000 + 2,000 + 100 + 10 + 2$	c _____ = $7,000 + 40 + 6$
d _____ = $90,000 + 6,000 + 30 + 5$	e _____ = $60,000 + 3,000 + 7$
f _____ = $10,000 + 3,000 + 800 + 50 + 5$	g _____ = $50,000 + 300 + 5$

2 Fill in the missing number in each equation.

ex $40,000 + 6,000 + \underline{50} + 8 = 46,058$	a $41,092 = 40,000 + \underline{\quad} + 90 + 2$
b $50,000 + 1,000 + \underline{\quad} + 50 + 4 = 51,354$	c $17,035 = 10,000 + \underline{\quad} + 30 + 5$
d $96,035 = 90,000 + 6,000 + \underline{\quad} + 5$	e $20,000 + \underline{\quad} + 50 + 6 = 20,456$
f $2,000 + 500 + \underline{\quad} + 7 = 2,567$	g $20,408 = 20,000 + \underline{\quad} + 8$

3 Fill in the missing information for each rectangle. Then write the multiplication and division fact family that goes with the rectangle.

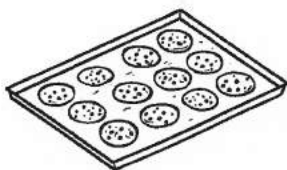
<p>example</p> <div style="text-align: center;"> $\begin{array}{ c } \hline 4 \\ \hline \begin{array}{ c } \hline 2 \\ \hline 8 \end{array} \\ \hline \end{array}$ </div> $\begin{array}{l} \underline{2} \times \underline{4} = \underline{8} \\ \underline{4} \times \underline{2} = \underline{8} \\ \underline{8} \div \underline{4} = \underline{2} \\ \underline{8} \div \underline{2} = \underline{4} \end{array}$	<p>a</p> <div style="text-align: center;"> $\begin{array}{ c } \hline \underline{\quad} \\ \hline \begin{array}{ c } \hline 3 \\ \hline 21 \end{array} \\ \hline \end{array}$ </div> $\begin{array}{l} \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \div \underline{\quad} = \underline{\quad} \\ \underline{\quad} \div \underline{\quad} = \underline{\quad} \end{array}$	<p>b</p> <div style="text-align: center;"> $\begin{array}{ c } \hline 9 \\ \hline \begin{array}{ c } \hline \underline{\quad} \\ \hline 54 \end{array} \\ \hline \end{array}$ </div> $\begin{array}{l} \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \div \underline{\quad} = \underline{\quad} \\ \underline{\quad} \div \underline{\quad} = \underline{\quad} \end{array}$
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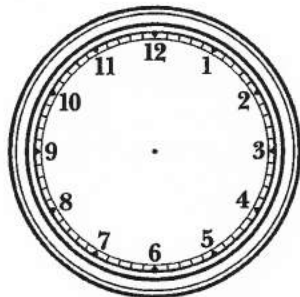
Time & Distance Problems

1a It takes 10 minutes to bake a batch of cookies. Simon plans to bake 7 batches of cookies. How long will it take? Write your answer in hours and minutes. Show all your work.



CHALLENGE

b If Simon starts baking at 2:45 pm, what time will he be done? You can use the clock below to help figure it out. Show all your work.



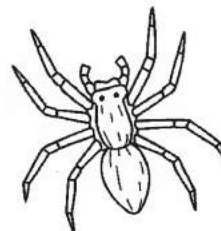
2a A spider is crawling on a street. It took the spider 3 hours to crawl 3000 centimeters. On average, how many centimeters did the spider crawl each hour? Show all your work.

b There are 100 centimeters in a meter. On average, how many meters did the spider crawl each hour? Show all your work.



CHALLENGE

c If the spider crawled for an hour and a half, how many meters would it crawl? Explain your answer.



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How Much Change?

1 Sharon bought a bottle of iced tea that cost \$1.65. She paid for it with a \$5 bill. How much change did she get back? Show all your work.

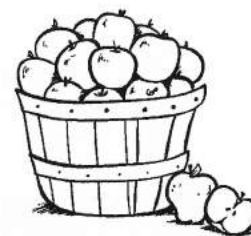


2 Toshi bought a magazine that cost \$3.89. He paid for it with a \$10 bill. How much change did he get back? Show all your work.



CHALLENGE

3 Apples are on sale for 99¢ per pound. Mr. James bought 6 pounds of apples and paid for them with a \$10 bill. How much change did he get back? Show all your work.

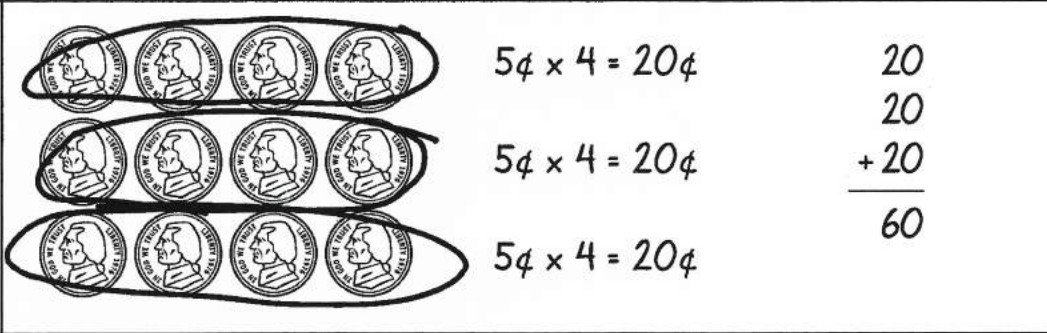
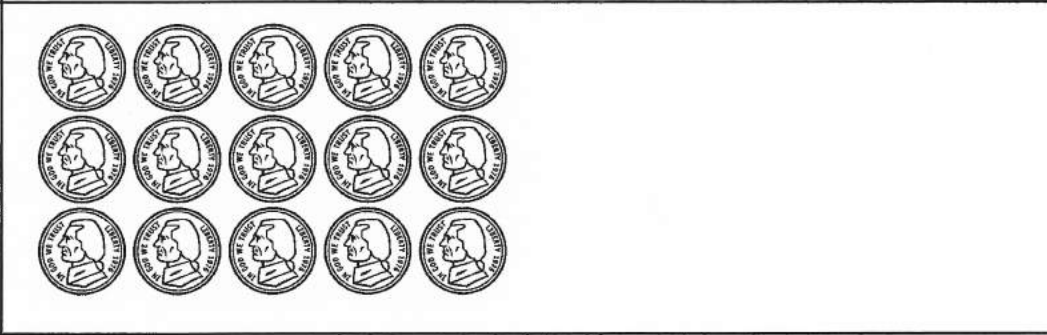



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Multiplying with Money

1 Use the arrays of coins to help solve each multiplication problem below. Show all your work.

<p>example</p> $\begin{array}{r} 12 \\ \times 5 \\ \hline 60 \end{array}$	
<p>a</p> $\begin{array}{r} 15 \\ \times 5 \\ \hline \end{array}$	
<p>b</p> $\begin{array}{r} 21 \\ \times 5 \\ \hline \end{array}$	



CHALLENGE

2 Solve the multiplication problems below. Show all your work.

<p>a</p> $\begin{array}{r} 62 \\ \times 5 \\ \hline \end{array}$	<p>b</p> $\begin{array}{r} 63 \\ \times 5 \\ \hline \end{array}$
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Candy & Video Games

1 Joya bought a candy bar for 89¢ and a giant lollipop for \$1.35. How much did she spend altogether on the candy?

a Write the question in your own words below.

The question I am being asked to answer is...

b Solve the problem. Show all your work.

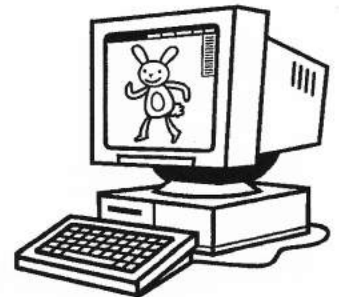


2 Devante wants to buy a video game system that costs \$326. He has \$187 dollars in his bank account. How much more money does Devante need to buy the game system?

a Write the question in your own words below.

The question I am being asked to answer is...

b Solve the problem. Show all your work.



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The Information You Need

Sometimes story problems include information that you don't need to solve the problem. Read the problems below carefully to see which information is extra.

1 Emilio has \$125. He wants to buy a new video game system that usually costs \$312 but is on sale for \$289. He wants to borrow money from his brother so that he can buy it while it is on sale. How much money will Emilio need to borrow to buy the game system while it is on sale?

- a** Restate the question in your own words.
- b** Underline the information in the problem you *do* need to solve the problem.
- c** Cross out the information in the problem you *don't* need to solve the problem.
- d** Solve the problem. Show all your work.

2 Marie had a \$5 bill, three \$1 bills, 2 quarters, and 3 pennies in her pocket. She bought a bottle of juice for 89¢ and an apple for 65¢. If she paid with two \$1 bills, how much change did she get back?





- a** Restate the question in your own words.
- b** Underline the information in the problem you *do* need to solve the problem.
- c** Cross out the information in the problem you *don't* need to solve the problem.
- d** Solve the problem. Show all your work.

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Fractions of a Foot

1 Write two names for each fraction of a foot. You can draw on the rulers to help.

<p>example</p>  <p>$\frac{3}{12}$ $\frac{1}{4}$</p> <p>_____</p>	<p>a</p>  <p>_____</p>
<p>b</p>  <p>_____</p>	<p>c</p>  <p>_____</p>

2 Shade the ruler to show each fraction of a foot. Then write another name for the fraction. You can draw lines to divide the rulers into equal parts.

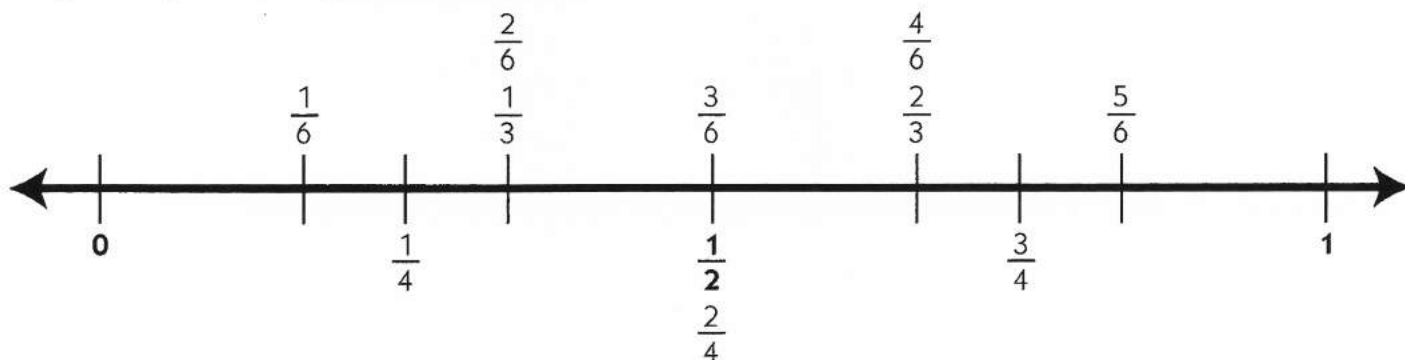
<p>example</p>  <p>$\frac{9}{12}$ $\frac{3}{4}$</p> <p>_____</p>	<p>a</p>  <p>$\frac{8}{12}$</p> <p>_____</p>
<p>b</p>  <p>$\frac{10}{12}$</p> <p>_____</p>	<p>c</p>  <p>$\frac{12}{12}$</p> <p>_____</p>
<p>d</p>  <p>$\frac{2}{6}$</p> <p>_____</p>	<p>e</p>  <p>$\frac{2}{3}$</p> <p>_____</p>

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Comparing Fractions on a Number Line

When you are comparing fractions, it can help to think about how close those fractions are to landmarks like one whole and one-half. Use the number line to help complete the problems below.



1 Complete the table.

Circle the fraction that is greater than $\frac{1}{2}$.	Write a number sentence showing which fraction is greater.
example $\left(\frac{4}{6}\right)$ $\frac{1}{4}$	$\frac{4}{6} > \frac{1}{4}$
a $\frac{2}{6}$ $\frac{2}{3}$	
b $\frac{1}{3}$ $\frac{5}{6}$	

2 Complete the table.

Circle the fraction that is closest to 1.	Write a number sentence showing which fraction is greater.
a $\frac{3}{4}$ $\frac{2}{3}$	
b $\frac{5}{6}$ $\frac{2}{3}$	
c $\frac{3}{4}$ $\frac{5}{6}$	

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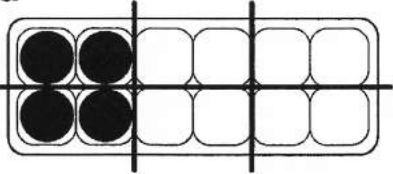
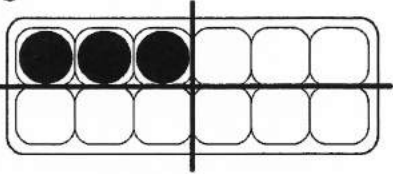
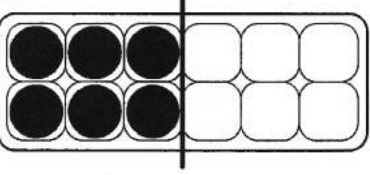
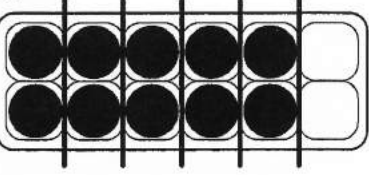
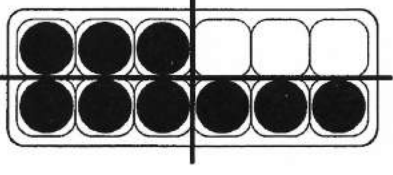
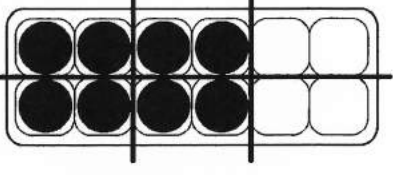
Egg Carton Fractions

1 Solve the following multiplication and division problems. They might help you think about the egg cartons in problem 2.

$12 \div 2 = \underline{\quad\quad}$ $12 \div 3 = \underline{\quad\quad}$ $12 \div 4 = \underline{\quad\quad}$ $12 \div 6 = \underline{\quad\quad}$

$6 \times 3 = \underline{\quad\quad}$ $4 \times 2 = \underline{\quad\quad}$ $3 \times 3 = \underline{\quad\quad}$ $2 \times 5 = \underline{\quad\quad}$

2 Write a fraction to show the amount of each egg carton that is filled with eggs. The cartons are divided into equal parts for you.

<p>a</p>  <p>_____</p>	<p>b</p>  <p>_____</p>
<p>c</p>  <p>_____</p>	<p>d</p>  <p>_____</p>
<p>e</p>  <p>_____</p>	<p>f</p>  <p>_____</p>

3 Write greater than ($>$) or less than ($<$) to show which fraction is greater. If they are equal, write an equal sign ($=$).

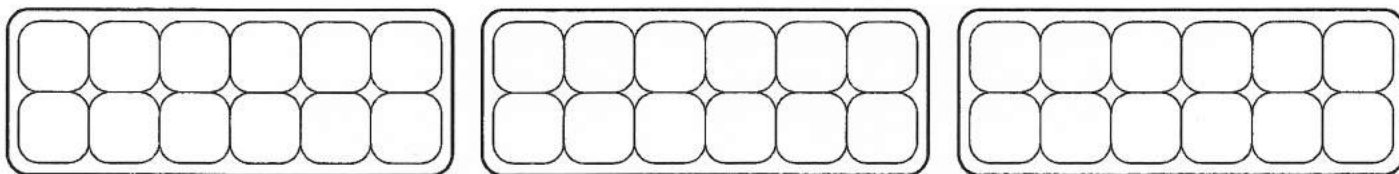
ex a $\frac{1}{4} < \frac{1}{2}$	ex b $\frac{1}{2} > \frac{1}{3}$	a $\frac{4}{6}$ $\frac{2}{3}$
b $\frac{1}{3}$ $\frac{1}{4}$	c $\frac{3}{4}$ $\frac{5}{6}$	d $\frac{1}{3}$ $\frac{3}{4}$
e $\frac{1}{2}$ $\frac{2}{4}$	f $\frac{2}{3}$ $\frac{3}{4}$	g $\frac{2}{6}$ $\frac{1}{3}$

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Comparing & Ordering Fractions

1 Write the fractions below in order from least to greatest. You can use the egg cartons to help compare the fractions. Hint: *First figure out which fractions are greater than 1.*

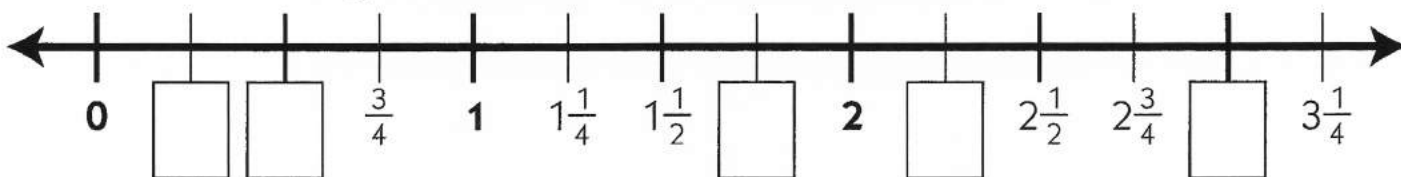


$\frac{1}{2}$	$\frac{5}{3}$	$\frac{3}{4}$	$\frac{1}{3}$	$\frac{7}{4}$	$\frac{2}{3}$	$\frac{3}{2}$	$\frac{1}{4}$
---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------

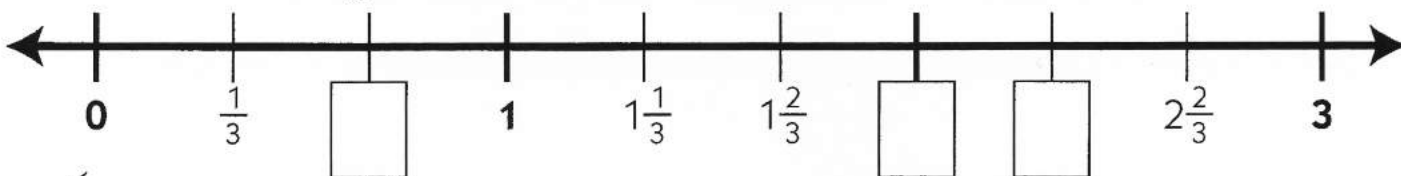
Least

Greatest

2 Fill in the missing fractions or whole numbers on the number line.



3 Fill in the missing fractions or whole numbers on the number line.



CHALLENGE

4 Which fraction is greater, $\frac{3}{4}$ or $\frac{8}{9}$? How do you know?

5 Which fraction is greater, $\frac{5}{4}$ or $\frac{10}{9}$? How do you know?

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Fraction Story Problems

Draw pictures to help answer the questions below. Circle your answer to each question.

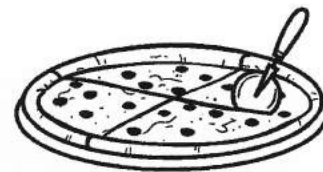
1 Jim had a piece of string that was three-fourths of a foot long. Damien had a piece of string that was half a foot long. Whose string was longer? How much longer was it? Use a labeled sketch, as well as numbers and/or words, to prove your answer.

2 Rosa and Jasmine were trying to run a kilometer (1 kilometer is equal to 1000 meters). Rosa made it halfway. Jasmine made it one-third of the way. Who ran farther? Use a labeled sketch, as well as numbers and/or words, to prove your answer.



CHALLENGE

3 Lisa and her brother Darius were eating small pizzas. Their mom cut each pizza into fourths. Lisa figured out that she ate one and a half little pizzas. Darius counted that he ate seven fourths. Who ate more pizza? How much more? Use a labeled sketch, numbers, and/or words to prove your answer.



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Multiplication Tables

1 Complete the multiplication tables below.

ex	x	5	2	9	3	8	6	7	4
	2	10	4	18	6	16	12	14	8

a	x	5	2	9	3	8	6	7	4
	3								

b	x	5	2	9	3	8	6	7	4
	4								

c	x	5	2	9	3	8	6	7	4
	8								

2 Solve the division problems below.

$40 \div 5 = \underline{\quad}$ $27 \div 3 = \underline{\quad}$ $16 \div 4 = \underline{\quad}$ $20 \div 5 = \underline{\quad}$

$64 \div 8 = \underline{\quad}$ $32 \div 4 = \underline{\quad}$ $18 \div 6 = \underline{\quad}$ $9 \div 3 = \underline{\quad}$



CHALLENGE

3 Write an even three-digit number with:

- an odd number in the tens place
- an odd number in the hundreds place that is less than the number in the tens place
- a number greater than 5 in the ones place


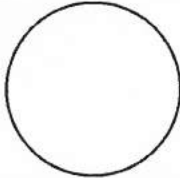
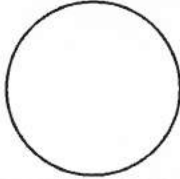
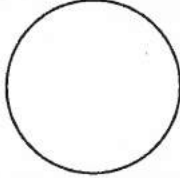
4 What is 2 times the number you wrote above?

NAME _____

DATE _____

Fractions & Division

1 Sometimes the answer to a division problem is a fraction. Complete the table below.

Divide the circle into this many equal pieces	Draw on this circle	Complete the division equation
example 3		$1 \div 3 = \frac{1}{3}$
a 2		$1 \div 2 = \underline{\hspace{2cm}}$
b 4		$1 \div 4 = \underline{\hspace{2cm}}$
c 6		$1 \div 6 = \underline{\hspace{2cm}}$

2 Larissa and her two friends bought a giant cookie. They cut it into equal parts so that they each got the same amount. How much of the cookie did each friend get? Draw and label a picture to show your answer.

3 The next day Larissa and her 2 friends bought 4 cookies. If they shared them equally, how much did each friend get? Draw and label a picture to show your answer.



NAME _____

DATE _____

Classroom Groups

1 Mrs. Larsen has 20 little erasers. She wants to divide the erasers evenly among the 6 students in her reading group. How many erasers will each student get? Show all your work.

2a The teacher wanted his class to work in groups of 4. After he divided them into groups, there were 6 groups of 4 and 1 group of 3. How many students were in the class? Show all your work.



CHALLENGE

b If the teacher wanted all the groups to be exactly the same size, how many students should be in each group? How many small groups would there be? Show all your work.