AA Math

Grade 4 Math + AA activities
Remote Learning Student Directions – Paper Option

Math resources are being sent home with your fourth-grade student to provide daily opportunities to engage in math learning. You will find the outline below lists the various materials and suggestions for utilizing the resources.

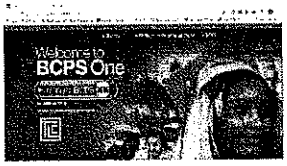
Assignments

Week One	**Week 1 – Add, Subtract, & Multiply Packet** • Complete 2 – 3 pages of the packet per day	AA: Whole # operations
Week Two	**Week 2 – Multiply & Divide Multi-Digit Whole Numbers Packet** • Complete 2 – 3 pages of the packet per day	AA: Fraction operations
Week Three	**Week 3 – Fractions Packet** • Complete 3 – 4 pages of the packet per day	

Additional Resources

MCAP Practice Test

Optional Digital Resources

DreamBox Learning Lessons	**6 to 8 lessons per week of remote learning** Students must first log into BCPS One using their own username and password, and then access DreamBox through the Instructional and Productivity Tools Icon. 1.  www.bcpsone.bcps.org 2.  Instructional and Productivity Tools 3.  DreamBox Learning icon

Week 1: Whole # operations AA activities

Math AA

BLACKLINES

PRACTICE BOOK

5

BRIDGES IN MATHEMATICS

AA activities

Martha Ruttle

The MATH LEARNING CENTER

NAME _____ DATE _____

Using the Standard Multiplication Algorithm

1 Solve these multiplication problems.

80	80	90	90	100	100
× 30	× 40	× 30	× 40	× 30	× 40

2 Solve these multiplication problems using the standard algorithm. Use the answers above to help make sure your answers are reasonable.

ex

$$\begin{array}{r} {}^{1}\not{2} \\ 84 \\ \times\ 36 \\ \hline {}_{1}\ 504 \\ +\ 2{,}520 \\ \hline 3{,}024 \end{array}$$

a

$$\begin{array}{r} 79 \\ \times\ 26 \\ \hline \end{array}$$

b

$$\begin{array}{r} 86 \\ \times\ 32 \\ \hline \end{array}$$

c

$$\begin{array}{r} 92 \\ \times\ 37 \\ \hline \end{array}$$

d

$$\begin{array}{r} 82 \\ \times\ 43 \\ \hline \end{array}$$

e

$$\begin{array}{r} 98 \\ \times\ 29 \\ \hline \end{array}$$

NAME _____ DATE _____

Snacks for the Field Trip

1 Mrs. Ramos is taking 32 students on a field trip. She wants to provide snacks for the students to eat. Granola bars come in boxes of 8 and cost $2.50 per box. Apples come in bags of 4 and cost $1.50 per bag. Packages of peanut butter crackers come in boxes of 16 for $4.69. At these prices, which of the snacks has the cheapest price per item: granola bars, apples, or peanut butter crackers?

a Restate the question in your own words:

b Underline the information in the problem you need to solve the problem.

c Solve the problem. Show all your work.

d Does your answer make sense? Explain how you can tell by using estimation or thinking about the problem in another way.

NAME _____ DATE _____

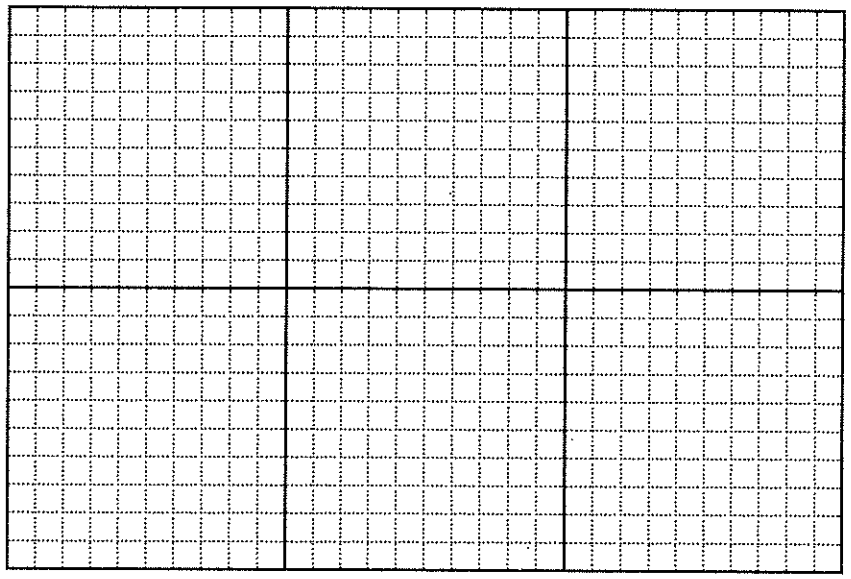
Division on a Base-Ten Grid

1 Complete the following multiplication problems.

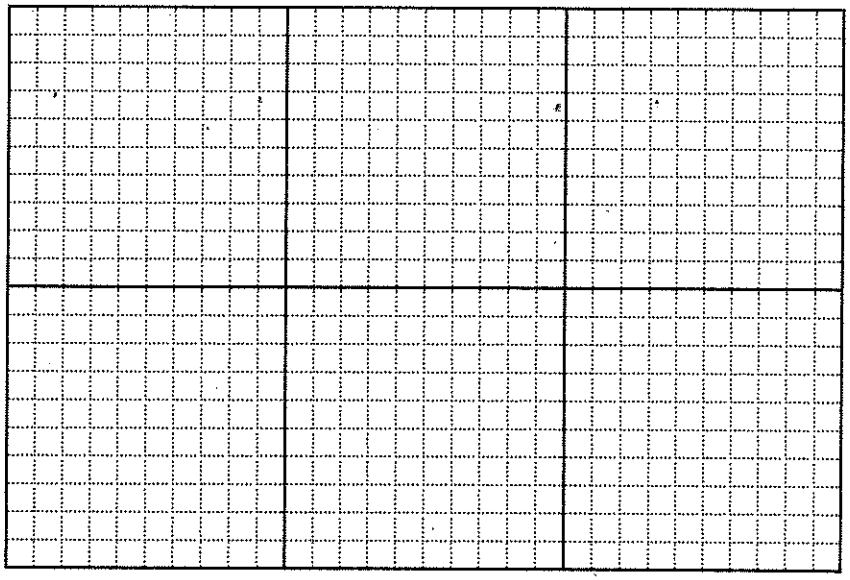
14	14	14	14	14	14
× 2	× 3	× 10	× 5	× 20	× 30
____	____	____	____	____	____

2 Solve the following division problems. Use the multiplication problems above and the grids to help.

a 322 ÷ 14 = _____



b 238 ÷ 14 = _____



NAME _____ DATE _____

Using Basic Fact Strategies to Multiply Larger Numbers

Thinking about basic fact strategies and relationships between facts can help you multiply larger numbers too.

To multiply by	Strategy	Example	
3	Double the number and add 1 more of that number.	3 × 16	2 × 16 = 32 32 + 16 = 48
5	Think of the number times 10. Then cut it in half.	5 × 16	10 × 16 = 160 160 ÷ 2 = 80
20	Think of the number times 10. Then double it.	20 × 16	10 × 16 = 160 160 + 160 = 320
30	Think of the number times 10. Double it. Then add them together.	30 × 16	10 × 16 = 160 160 + 160 = 320 320 + 160 = 480
15	Think of the number times 10. Cut it in half. Then add them together.	15 × 16	10 × 16 = 160 160 ÷ 2 = 80 160 + 80 = 240

1 Complete the multiplication problems below. Use problems you have already solved to help solve other ones.

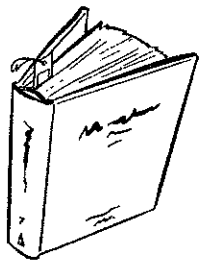
a	**b**	**c**
24 × 1 = _____	32 × 1 = _____	17 × 1 = _____
24 × 2 = _____	32 × 2 = _____	17 × 2 = _____
24 × 3 = _____	32 × 3 = _____	17 × 3 = _____
24 × 10 = _____	32 × 10 = _____	17 × 10 = _____
24 × 5 = _____	32 × 5 = _____	17 × 5 = _____
24 × 20 = _____	32 × 20 = _____	17 × 20 = _____
24 × 30 = _____	32 × 30 = _____	17 × 30 = _____
24 × 15 = _____	32 × 15 = _____	17 × 15 = _____

NAME _____ **DATE** _____

More Division Story Problems

1 A group of migrating geese travels at about 40 miles per hour. About how many hours of flying will it take them to go 320 miles? Show all your work.

2 Ellie is reading a book that is 257 pages long. If she reads 30 pages every day, how many days will it take her to read the whole book? Show all your work.



3 Paulo made some candies that he is going to sell at the market. He is putting 20 candies in a bag. If he has 187 candies altogether, how many bags can he fill? Show all your work.

CHALLENGE

4 A group of robins took 78 days to fly 3,000 miles. On average, about how many miles did the robins fly each day? Explain why your estimate is reasonable.

NAME _____ **DATE** _____

Divisibility Rules

It's easy to tell if a small number like 12 is divisible by another number. With bigger numbers, like 435, it can be harder to tell. You already know how to tell if a number is divisible by 2, 5, or 10. There are also rules that can help you tell if any number is divisible by 3, 6, or 9.

Rule	Example
A number is divisible by 3 if the sum of its digits is divisible by 3.	957 is divisible by 3 because 9 + 5 + 7 = 21 and 21 is divisible by 3. (21 ÷ 3 = 7)
A number is divisible by 6 if it is divisible by 3 (see above) and it is divisible by 2 (has a 0, 2, 4 6, or 8 in the ones place).	786 is divisible by 6 because 7 + 8 + 6 = 21 and 21 is divisible by 3. (21 ÷ 3 = 7) 786 also ends in 6, which means it is even (divisible by 2).
A number is divisible by 9 if the sum of its digits is divisible by 9.	837 is divisible by 9 because 8 + 3 + 7 = 18 and 18 is divisible by 9.

1 Use the chart below to help you figure out if the numbers are divisible by 3, 6, or 9. In the last column, you don't have to list all the factors of the number. Just list any other numbers you know for sure that the number is divisible by.

Number	Sum of the Digits	Divisible by 3?	Divisible by 6?	Divisible by 9?	It's also divisible by
ex 495	4 + 9 + 5 = 18	yes	no	yes	5
a 987					
b 540					
c 762					
d 747					
e 570					
f 645					
g 792					

NAME _____ **DATE** _____

Division with Menus & Sketches

1 Fill in the mutiplication menu.

a 1 × 19 = _____ **b** 2 × 19 = _____ **c** 10 × 19 = _____

d 5 × 19 = _____ **e** 20 × 19 = _____ **f** 15 × 19 = _____

2 Solve the two division problems using the menu above and sketches to help. You can add to the menu if you want to.

ex 304 ÷ 19 = 16	**a** 608 ÷ 19 = _____	**b** 456 ÷ 19 = _____
Computation: 1 5] 16 10 19 ⌐ 304 - 190 114 - 95 19 - 19 0	Computation:	Computation:
Sketch: 10 5 1 19 190 95 19	Sketch:	Sketch:

3 If you need to, use the divisibility rules on page 67 to help answer these.

a Are any of the numbers above (304, 608, 456) divisible by 3? If so, list them here:

b Are any of the numbers above divisible by 6? If so, list them here:

c Are any of the numbers above divisible by 9? If so, list them here:

NAME _____ DATE _____

Multiplication & Division Review

1 Complete the following multiplication tables.

a

×	2	9	6	5	7	20	40	30
60	120							

b

×	2	9	6	5	7	20	40	30
40	80							

2 Complete the following division table.

÷	1,200	900	60	210	1,500	1,800	270	2,400
30	40							

3 Solve these multiplication problems using the standard algorithm.

$$\begin{array}{r} {\scriptstyle 1}\\ 84 \\ \times\ 36 \\ \hline {\scriptstyle 1}\ 504 \\ +\ 2{,}520 \\ \hline 3{,}024 \end{array}$$

$$\begin{array}{r} 58 \\ \times\ 27 \\ \hline \end{array}$$

$$\begin{array}{r} 451 \\ \times\ 32 \\ \hline \end{array}$$

$$\begin{array}{r} 256 \\ \times\ 33 \\ \hline \end{array}$$

$$\begin{array}{r} 177 \\ \times\ 49 \\ \hline \end{array}$$

$$\begin{array}{r} 305 \\ \times\ 64 \\ \hline \end{array}$$

$$\begin{array}{r} 573 \\ \times\ 26 \\ \hline \end{array}$$

$$\begin{array}{r} 837 \\ \times\ 86 \\ \hline \end{array}$$

NAME _____ **DATE** _____

Division Estimate & Check

Make a multiplication menu for each divisor. Complete the sentence to identify a range of reasonable answers. Then use long division to find the exact answer, including the remainder if there is one.

Problem	Multiplication Menu	Range of Reasonable Answers	Your Work	Exact Answer
ex 307 ÷ 19	19 x 10 = 190 19 x 20 = 380 19 x 5 = 95 19 x 2 = 38	The answer will be less than 20 and greater than 10.	1 5] 16 r3 10 19 ⌊ 307 - 190 117 - 95 22 - 19 3	16 r3
1 396 ÷ 17		The answer will be less than _____ and greater than _____.		
2 275 ÷ 13		The answer will be less than _____ and greater than _____.		

NAME _____ DATE _____

The Book Problem

1 Mrs. Suarez wants to buy a class set of books for her students. There are 24 students in her class. She has $150 to spend. How much money can she spend on each book?

a Restate the question in your own words:

b Solve the problem. Show all your work.

c Does your answer make sense? Explain how you can tell.

Week 2: Fraction Operations

Math AA

AA activities

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5

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AA activities

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NAME _____ DATE _____

Adding Fractions

1 Show the fractions on the strips. Then add them and report the sum.

First	Second	Add Them	Sum
ex $\frac{2}{4}$	$\frac{3}{4}$		$1\frac{1}{4}$
a $\frac{3}{4}$	$\frac{3}{4}$		
b $\frac{3}{8}$	$\frac{1}{2}$		
c $\frac{5}{8}$	$\frac{3}{4}$		
d $\frac{1}{2}$	$\frac{7}{8}$		

2 If you are adding two fractions that are both greater than $\frac{1}{2}$, what must be true about the sum? The sum must be:

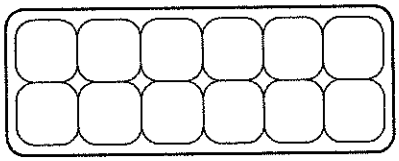
3 If you are adding two fractions that are both less than $\frac{1}{2}$, what must be true about the sum? The sum must be:

NAME _____ DATE _____

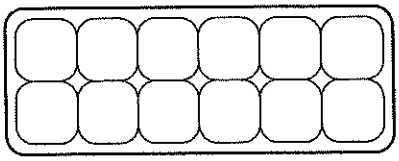
Egg Carton Fractions

1 Show the fractions on the egg cartons. Each carton represents 1 whole.

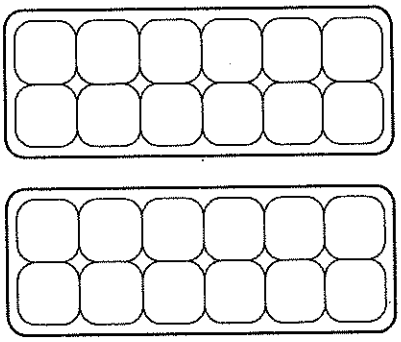
a $\frac{1}{2}$



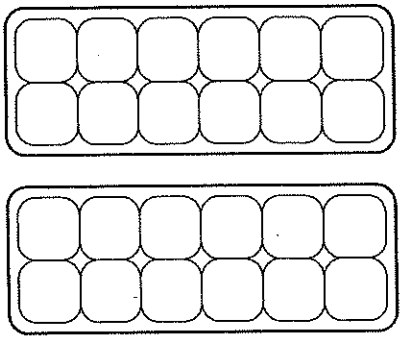
b $\frac{3}{4}$



c $1\frac{2}{3}$

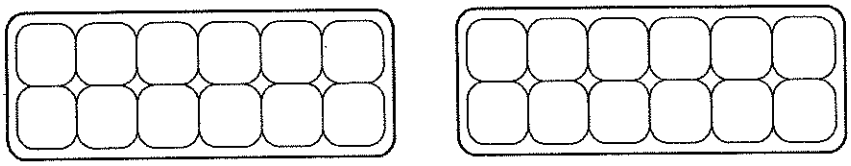


d $\frac{9}{6}$

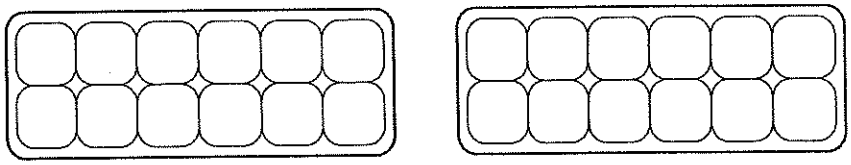


2 Add the fractions below. If the sum is greater than 1, write it as a mixed number.

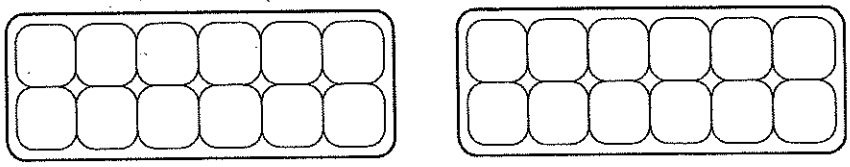
a $\frac{5}{6} + \frac{1}{2} =$



b $\frac{2}{3} + \frac{3}{6} =$



c $\frac{13}{12} + \frac{3}{4} =$



3 Use a <, >, or = sign to complete each number sentence.

a $\frac{6}{10} + \frac{11}{10}$ 1

b $\frac{11}{10} + \frac{7}{6}$ 2

c $\frac{1}{12} + \frac{3}{14}$ 1

NAME _____ DATE _____

Fraction Story Problems

1 Marsha walked $1\frac{1}{2}$ miles to school yesterday morning. After school, she walked $\frac{3}{4}$ of a mile to her aunt's house. How many miles did she walk altogether yesterday? Show all your work.

2 Francisco and his mom got some fruit at the fruit stand yesterday. They bought $2\frac{1}{2}$ pounds of peaches, $\frac{7}{8}$ of a pound of raspberries, and $1\frac{1}{4}$ pounds of apricots. How many pounds of fruit did they buy altogether? Show all your work.

NAME _____ **DATE** _____

More Fraction Story Problems

1 Yesterday Carson threw away $1\frac{1}{3}$ pounds of paper packaging. He threw away $\frac{3}{4}$ of a pound of plastic packaging. Altogether, how many pounds of packaging did Carson throw away yesterday? Show all your work.

2 Carmen ran $1\frac{3}{8}$ miles yesterday. Her sister Lola ran $2\frac{1}{4}$ miles yesterday. How much farther did Lola run than Carmen? Show all your work.

NAME _____ **DATE** _____

Finding Equivalent Fractions

1 Write two fractions that are equal to the fraction shown.

ex $\frac{3}{9} = \frac{1}{3}$ and $\frac{3}{9} = \frac{6}{18}$	**a** $\frac{9}{15} =$ and $\frac{9}{15} =$
b $\frac{4}{6} =$ and $\frac{4}{6} =$	**c** $\frac{15}{18} =$ and $\frac{15}{18} =$

2 Circle the fractions that are equal to the fraction shown. Use the space at right as a work space to do calculations if needed.

Fraction	Circle the fractions that are equal to the other fraction.				
ex $\frac{1}{2}$	$\frac{4}{8}$	$\frac{3}{5}$	$\frac{2}{4}$	$\frac{7}{14}$	$\frac{5}{6}$
a $\frac{4}{12}$	$\frac{1}{3}$	$\frac{2}{10}$	$\frac{8}{24}$	$\frac{6}{14}$	$\frac{12}{36}$
b $\frac{3}{4}$	$\frac{6}{7}$	$\frac{6}{8}$	$\frac{9}{12}$	$\frac{15}{20}$	$\frac{30}{40}$
c $\frac{3}{15}$	$\frac{6}{30}$	$\frac{5}{17}$	$\frac{1}{3}$	$\frac{1}{5}$	$\frac{9}{45}$

3 If you are given one fraction, what can you do to write other fractions that are equal to that fraction?

NAME _____ DATE _____

Rewriting & Comparing More Fractions

1 Find the least common multiple of each pair of numbers.

ex The least common multiple of 8 and 28 is 56. multiples of 28: 28, 56 multiples of 8: 8, 16, 24, 32, 40, 48, 56	**a** The least common multiple of 6 and 7 is _____. multiples of 6: multiples of 7:
b The least common multiple of 9 and 12 is _____. multiples of 9: multiples of 12:	**c** The least common multiple of 9 and 15 is _____. multiples of 9: multiples of 15:

2 Rewrite each pair of fractions with a common denominator. Then use a <, >, or = to compare them in two number sentences.

Fractions	Rewritten with Common Denominator	Number Sentences
ex $\frac{6}{8}$ and $\frac{17}{28}$	$\frac{6 \times 7}{8 \times 7} = \frac{42}{56}$ $\frac{17 \times 2}{28 \times 2} = \frac{34}{56}$	$\frac{42}{56} > \frac{34}{56}$ so $\frac{6}{8} > \frac{17}{28}$
a $\frac{4}{6}$ and $\frac{5}{7}$	$\frac{4 \times \_\_}{6 \times \_\_} =$ $\frac{5 \times \_\_}{7 \times \_\_} =$	so $\frac{4}{6}$ $\frac{5}{7}$
b $\frac{7}{9}$ and $\frac{9}{12}$	$\frac{7 \times \_\_}{9 \times \_\_} =$ $\frac{9 \times \_\_}{12 \times \_\_} =$	so $\frac{7}{9}$ $\frac{9}{12}$
c $\frac{8}{9}$ and $\frac{13}{15}$	$\frac{8 \times \_\_}{9 \times \_\_} =$ $\frac{13 \times \_\_}{15 \times \_\_} =$	so $\frac{8}{9}$ $\frac{13}{15}$

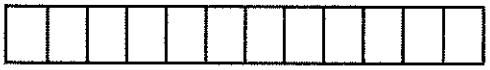
NAME _____ DATE _____

Adding Fractions

1 Each bar below is divided into 12 equal pieces. Show each fraction on a fraction bar.

ex $\frac{1}{3}$ 

a $\frac{2}{3}$ 

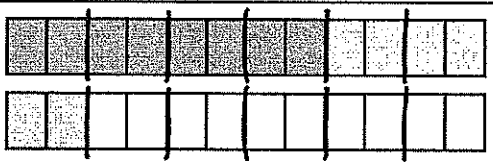
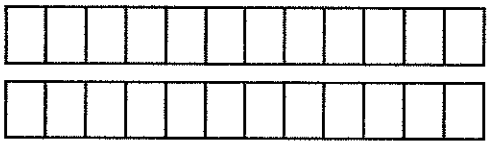
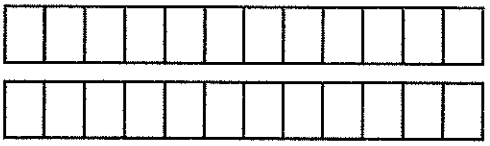
b $\frac{1}{4}$ 

c $\frac{3}{4}$ 

d $\frac{1}{2}$ 

e $\frac{5}{6}$ 

2 Rewrite each pair of fractions so that they have the same denominator. Then use the fraction bar pictures to show their sum. Write an equation to show both fractions and their sum.

Fractions to Add	Rewrite with Common Denominator	Picture and Equation
ex $\frac{2}{3} + \frac{1}{2}$	$\frac{2}{3} + \frac{1}{2} = \frac{4}{6} + \frac{3}{6}$	 $\frac{4}{6} + \frac{3}{6} = \frac{7}{6}$ or $1\frac{1}{6}$
a $\frac{2}{3} + \frac{3}{4}$	$\frac{2}{3} + \frac{3}{4} =$	
b $\frac{1}{3} + \frac{5}{6}$	$\frac{1}{3} + \frac{5}{6} =$	
c $\frac{7}{12} + \frac{3}{4}$	$\frac{7}{12} + \frac{3}{4} =$	

NAME _____ DATE _____

Adding Fractions & Mixed Numbers

1 Rewrite each fraction in simplest form by dividing the numerator and denominator by the greatest common factor. A fraction is in its simplest form when its numerator and denominator have no common factor other than 1. You do not have to show your work if you can do it in your head.

ex $\frac{9 \div 3}{15 \div 3} = \frac{3}{5}$	**a** $\frac{4 \div \_\_}{6 \div \_\_} = \_\_$	**b** $\frac{12 \div \_\_}{15 \div \_\_} = \_\_$
c $\frac{12 \div \_\_}{18 \div \_\_} = \_\_$	**d** $\frac{8 \div \_\_}{12 \div \_\_} = \_\_$	**e** $\frac{4 \div \_\_}{12 \div \_\_} = \_\_$

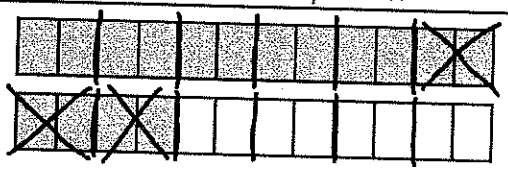
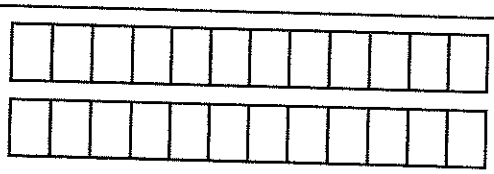
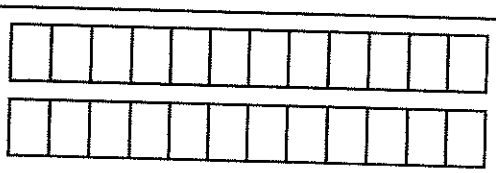
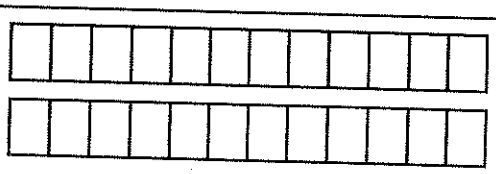
2 Rewrite each pair of fractions so they have the same denominator. Then find their sum. Sometimes, you will need to find the least common multiple. Sometimes you might be able to reduce each fraction to its simplest form to find a common denominator.

ex a $\frac{5}{8} + \frac{7}{12}$ ↓ ↓ $\frac{15}{24} + \frac{14}{24} = \frac{29}{24}$ and $\frac{29}{24} = 1\frac{5}{24}$	**ex b** $\frac{2}{6} + \frac{8}{12}$ ↓ ↓ $\frac{1}{3} + \frac{2}{3} = \frac{3}{3}$ and $\frac{3}{3} = 1$
a $\frac{3}{4} + \frac{2}{8}$	**b** $\frac{6}{8} + \frac{9}{12}$
c $3\frac{6}{12} + 4\frac{1}{2}$	**d** $1\frac{5}{8} + 2\frac{3}{4}$

NAME _____ **DATE** _____

Fraction Subtraction

1 Rewrite each pair of fractions so they have the same denominator. Then use the fraction bar pictures to show their difference. Write an equation to show both fractions and their difference.

Fractions	Rewrite with Common Denominator	Picture and Equation
ex $\frac{4}{3} - \frac{1}{2}$	$\frac{4}{3} - \frac{1}{2} = \frac{8}{6} - \frac{3}{6}$	 $\frac{8}{6} - \frac{3}{6} = \frac{5}{6}$
a $\frac{3}{4} - \frac{2}{3}$	$\frac{3}{4} - \frac{2}{3} =$	
b $\frac{5}{6} - \frac{1}{3}$	$\frac{5}{6} - \frac{1}{3} =$	
c $\frac{15}{12} - \frac{3}{4}$	$\frac{15}{12} - \frac{3}{4} =$	

CHALLENGE

2 Add each pair of numbers.

a $\frac{4}{12} + \frac{7}{15} =$

b $463\frac{7}{12} + 129\frac{13}{36} =$

NAME _____ DATE _____

More Fraction Subtraction

1 Rewrite each improper fraction as a mixed number.

ex $\frac{16}{12} = 1\frac{4}{12}$ **a** $\frac{12}{8} =$ **b** $\frac{15}{6} =$ **c** $\frac{17}{8} =$ **d** $\frac{14}{3} =$

2 Rewrite each mixed number as an improper fraction.

ex $1\frac{2}{8} = \frac{10}{8}$ **a** $1\frac{5}{12} =$ **b** $2\frac{5}{6} =$ **c** $3\frac{1}{4} =$ **d** $4\frac{2}{3} =$

3 Rewrite each pair of fractions so that they have the same denominator. Then find the difference. Sometimes, you will need to find the least common multiple. Sometimes you might be able to reduce each fraction to its simplest form to find a common denominator.

ex a

$\frac{5}{8} - \frac{7}{12}$

$\frac{15}{24} - \frac{14}{24} = \frac{1}{24}$

ex b

$\frac{8}{6} - \frac{8}{12}$

$\frac{4}{3} - \frac{2}{3} = \frac{2}{3}$

a

$\frac{7}{4} - \frac{4}{8}$

b

$\frac{15}{12} - \frac{3}{8}$

c

$2\frac{3}{8} - 1\frac{1}{3}$

d

$3\frac{5}{8} - 1\frac{3}{4}$

NAME _____ DATE _____

Finding the Common Denominator

1 Rewrite each fraction in simplest form by dividing the numerator and denominator by the greatest common factor. A fraction is in its simplest form when its numerator and denominator have no common factor other than 1. You do not have to show your work if you can do it in your head.

ex $\frac{9 \div 3}{15 \div 3} = \_\_$	**a** $\frac{3 \div \_\_}{6 \div \_\_} = \_\_$	**b** $\frac{9 \div \_\_}{15 \div \_\_} = \_\_$
c $\frac{15 \div \_\_}{18 \div \_\_} = \_\_$	**d** $\frac{12 \div \_\_}{18 \div \_\_} = \_\_$	**e** $\frac{8 \div \_\_}{12 \div \_\_} = \_\_$

2 Rewrite each pair of fractions so that they have the same denominator. Sometimes, you will need to find the greatest common multiple. Sometimes you might be able to reduce each fraction to its simplest form to find a common denominator.

Fractions	Your Work	With a Common Denominator
ex $\frac{7}{12}$ and $\frac{5}{8}$ 12, (24) 8, 16, (24)	$\frac{7 \times 2}{12 \times 2} = \frac{14}{24}$ $\frac{5 \times 3}{8 \times 3} = \frac{15}{24}$	$\frac{14}{24}$ and $\frac{15}{24}$
a $\frac{1}{4}$ and $\frac{9}{12}$		
b $\frac{7}{8}$ and $\frac{5}{6}$		
c $\frac{7}{15}$ and $\frac{4}{6}$		

NAME _____ **DATE** _____

Fraction Estimate & Check

Before you solve each problem, look carefully at the fractions and write what you know about the sum or difference. Then find the exact sum or difference. Show all your work. If your answer is greater than 1, write it as a mixed number, not an improper fraction.

Problem	What You Know Before You Start	Show your work.	Exact Sum or Difference
ex $\frac{8}{3} + \frac{9}{12}$	The sum is more than 3.	$\frac{32}{12} + \frac{9}{12} = \frac{41}{12}$ and $\frac{41}{12} = 3\frac{5}{12}$	$3\frac{5}{12}$
1 $\frac{4}{6} + \frac{8}{12}$			
2 $\frac{12}{8} + \frac{3}{4}$			
3 $\frac{3}{8} + \frac{8}{12}$			
4 $\frac{10}{8} - \frac{9}{12}$			
5 $\frac{5}{6} - \frac{3}{4}$			

NAME _____ DATE _____

Lauren's Puppy

1a Lauren's puppy wasn't feeling well so she took him to the vet. The puppy weighed $4\frac{3}{4}$ pounds. The vet said she would like the puppy to gain at least $\frac{9}{16}$ of a pound by the time they came back for his checkup. When they returned for the puppy's checkup, he had gained $\frac{3}{4}$ of a pound. How much more weight did the puppy gain than he needed to? Show all your work.

b How much did the puppy weigh after he had gained $\frac{3}{4}$ of a pound? Show all your work.

2 Lauren was happy that her puppy was gaining weight, so she told her friend Andre how much the puppy weighed now. Andre had a tiny chihuahua puppy, and he said, "Wow, your puppy is a pound and a half heavier than mine!" How much does Andre's puppy weigh? Show all your work.

NAME _____ DATE _____

Fraction Addition & Subtraction Review

1 Find the sum or the difference for each pair of fractions.

a $\frac{5}{6} - \frac{2}{5} =$	**b** $\frac{1}{3} + \frac{6}{7} =$

2 Annie ran $\frac{5}{8}$ of a mile. Her sister Mabel ran $\frac{7}{10}$ of a mile. Who ran farther and by exactly how much? Show all of your work.

3 Juan and his mom hiked $\frac{3}{8}$ of a mile this morning and $\frac{4}{5}$ of a mile this afternoon. How much did they hike today? Show all of your work.

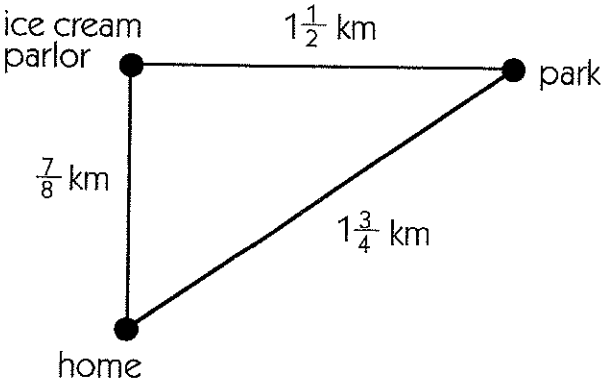
NAME _____ DATE _____

More Fraction Problems

1 Fill in the missing fraction or mixed number in each equation.

ex $1\frac{3}{4} + \underline{\frac{1}{4}} = 2$	**a** $1 = \frac{6}{10} + \_\_\_\_$	**b** $2 = 1\frac{4}{12} + \_\_\_\_$
c $3 = \_\_\_\_ + 1\frac{7}{8}$	**d** $2 = \frac{10}{12} + \_\_\_\_$	**e** $2\frac{6}{8} + \_\_\_\_ = 4$

2 Calvin and his family were going on a walk. They wanted to walk to the park, then go to the ice cream parlor, and finally walk home. The map below shows their path and the distances between each stop. How many kilometers will they walk in all? Show all your work.



NAME _____ DATE _____

Fraction Addition & Subtraction Story Problems

1 Find the sum or the difference for each pair of numbers.

a $\frac{5}{14} + \frac{4}{5} =$	**b** $\frac{7}{9} - \frac{4}{7} =$

2 George and his dad made some snack mix for their camping trip. To make it, they used 2 cups of mini pretzels, $\frac{3}{4}$ cup of peanuts, and $\frac{2}{3}$ cup of chocolate chips. How many cups of snack mix did they end up with? Show all of your work.

3 Lisa drank $\frac{7}{16}$ of a bottle of water during the soccer game. Julianne drank $\frac{2}{3}$ of a water bottle that was the same size as Lisa's. Who drank more water and by exactly how much?

Week 1 : Add, Subtract, Multiply

Math

BLACKLINES

PRACTICE BOOK

4

BRIDGES IN MATHEMATICS

Martha Ruttle

The MATH LEARNING CENTER

NAME _____ DATE _____

Multi-Digit Addition Review

1 Solve the problems below. Show all your work.

120 + 207	459 + 320	533 + 429	332 + 845
457 + 372	538 + 975	347 576 + 423	1,438 2,754 + 3,626

2 Rewrite these problems in vertical form. Then solve them. Show all your work.

example 583 + 645	**a** 276 + 986	**b** 362 + 1,534
1 583 + 645 1,228		

CHALLENGE

3 Use two numbers from the box to complete each addition problem below. You will use some numbers more than once.

97	204	297	405	498	607

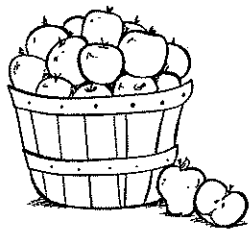
+ ☐	+ ☐	+ ☐	+ ☐	+ ☐
3 0 1	3 9 4	1, 0 1 2	1, 1 0 5	7 0 2

NAME _____ DATE _____

Addition Story Problems

Solve the problems below. Show all your work.

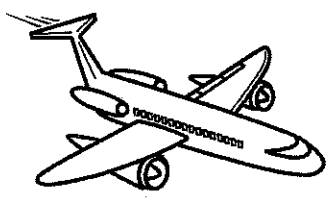
1 Last week, Jose picked 325 pounds of apples. Gloria picked 236 pounds of apples. How many pounds of apples did Jose and Gloria pick altogether? Show all your work.



2 The year Marcus was born, there were 2,308 people living in the town where his parents lived. Now Marcus is nine years old, and the town has 856 more people than it did when he was born. How many people live in the town where Marcus lives? Show all your work.

CHALLENGE

3 Fran is flying in an airplane. Right now it is 13,500 feet above the ground. It will go 16,800 more feet before it stops going any higher. How high will the airplane be then? Show all your work.



NAME _____ DATE _____

Multi-Digit Subtraction Review

1 Solve the problems below. Show all your work.

649 – 514	2,964 – 723	482 – 391	3,851 – 1,470
4,582 – 950	6,739 – 547	385 – 197	7,846 – 4,928

2 Rewrite these problems in vertical form. Solve them and then add the numbers to check your answer. Show all your work.

example 906 – 458	**a** 607 – 569	**b** 8,046 – 753
89 906 – 458 448 11 458 + 448 906		

CHALLENGE

3 Complete these problems. There is more than one correct solution to the first two problems.

a

$$\begin{array}{r} \square\,0\,1 \\ -\ \square\,\square \\ \hline \square\,6\,7 \end{array}$$

b

$$\begin{array}{r} \square\,7\,\square \\ -\square\,\square\,2 \\ \hline 3\,\square\,\square \end{array}$$

c

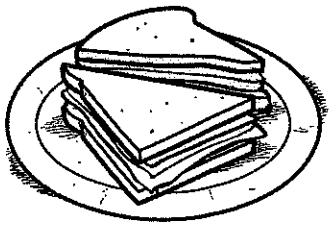
$$\begin{array}{r} 8\,6\,\square \\ -\square\,4\,1 \\ \hline 5\,1\,\square \end{array}$$

NAME _____ **DATE** _____

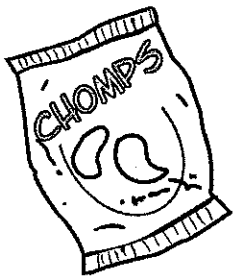
Subtraction Story Problems

Solve the problems below. Show all your work.

1 Last week the cafeteria served 486 breakfast sandwiches. This week they served 538 breakfast sandwiches. How many more breakfast sandwiches did they serve this week?

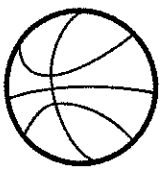


2 There were 6,742 bags of potato chips stored in the cafeteria. They served 781 of them at lunch. How many bags of potato chips are left?



CHALLENGE

3 At the basketball game last night, the home team was losing by 48 points at half time, so fans started to leave. If there were 18,862 people at the game when it started and 6,946 went home at half time, how many people were still at the game for the second half?



NAME _____ **DATE** _____

Add, Subtract & Multiply

1 Solve the addition and subtraction problems below Show all your work.

\$1.74 + \$2.25	\$20.71 + \$6.55	\$43.53 + \$7.18	\$8.14 + \$7.03
\$5.32 – \$2.81	\$3.42 – \$1.84	\$54.66 – \$6.93	\$3.04 – \$1.26

2 Rewrite these problems in vertical form. Then solve them. Show all your work.

example \$2.96 + \$8.45	**a** \$4.72 + \$2.39	**b** \$506.00 – \$3.57
1 1 \$2.96 + \$8.45 \$11.41		

3 Complete these multiplication problems.

3 × 8	5 × 4	9 × 3	2 × 7	0 × 3	1 × 6
6 × 4	7 × 4	4 × 8	0 × 9	7 × 7	2 × 10

NAME _____ **DATE** _____

Shopping Problems

Solve the problems below. Show all your work.

1 George, Nico, and Brandon went to the store. George spent $1.86 on fruit. Nico spent $2.03 on a drink. Brandon spent $1.45 on candy. How much did they spend altogether?

2 Emma had $5.80 in her pocket when she went to the store. If she spent $3.97, how much money did she have left?

CHALLENGE

3 Susie has three brothers who are triplets. For their birthday, she bought each brother a rubber ball that cost 71¢ and a T-shirt that cost $12.99. How much did she spend altogether on their birthday presents?

NAME _____ **DATE** _____

Multiplication & Division Facts

1 Solve the problems below.

8 × 3 = ____	4 × 4 = ____	7 × 6 = ____	5 × 6 = ____	3 × 8 = ____	2 × 9 = ____	0 × 1 = ____
1 × 8 = ____	6 × 6 = ____	9 × 4 = ____	10 × 4 = ____	5 × 3 = ____	7 × 9 = ____	6 × 8 = ____

63 ÷ 7 = ____	42 ÷ 7 = ____	36 ÷ 4 = ____	20 ÷ 5 = ____
16 ÷ 8 = ____	18 ÷ 3 = ____	6 ÷ 3 = ____	14 ÷ 2 = ____

2 Fill in the missing numbers.

6 × 3 = ☐	4 × 5 = ☐	5 × 7 = ☐	8 × 4 = ☐	8 × 8 = ☐
3 × ☐ = 6	2 × ☐ = 10	☐ × 5 = 15	☐ × 8 = 40	9 × ☐ = 72

CHALLENGE

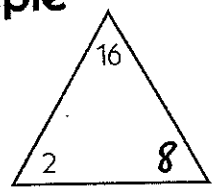
3 Use words and/or numbers to show how you could use the answer to 4 × 8 to solve 4 × 16.

NAME _____ DATE _____

All in the Family

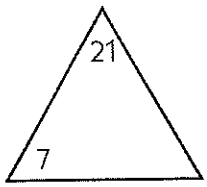
1 Fill in the missing number in each triangle. Then write the facts in the fact family.

example



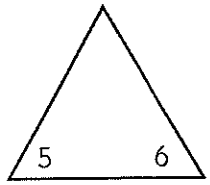
2 × 8 = 16
8 × 2 = 16
16 ÷ 8 = 2
16 ÷ 2 = 8

a



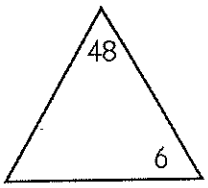
_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

b



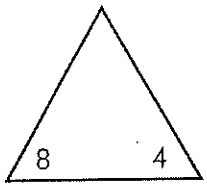
_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

c



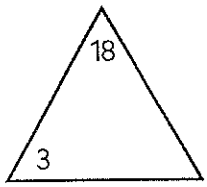
_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

d



_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

e

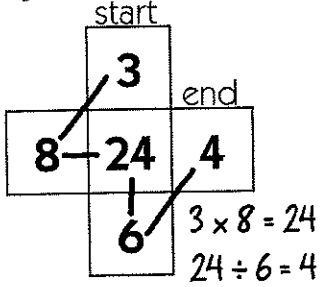


_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

CHALLENGE

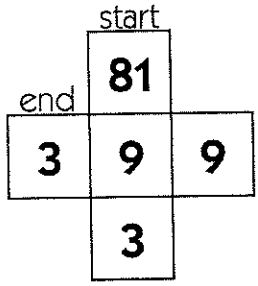
2 Use multiplication and division to find the secret path through each maze. You can only move one space up, down, over, or diagonally each time. Write two equations to explain the path through the maze.

example

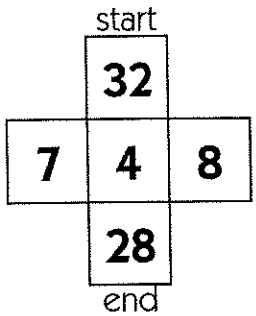


3 × 8 = 24
24 ÷ 6 = 4

a



b

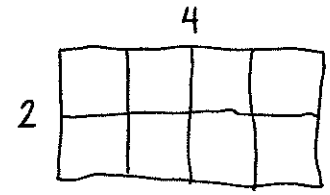


NAME _____ DATE _____

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.

example 8



2 × 4 = 8
4 × 2 = 8
8 ÷ 4 = 2
8 ÷ 2 = 4

a 16

_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

b 18

_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

2 List all the factors of each number below.

ex 12	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

$$\begin{array}{r} {}^{7}\not{8}\,\boxed{13}\;4 \\ -\;6\;9\;\boxed{3} \\ \hline \boxed{1}\;4\;1 \end{array}$$

a

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

b

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

NAME _____ DATE _____

Multiplication & Division Practice

1 Solve the following multiplication and division problems.

7 × 3 =	8 × 2 =	4 × 9 =	5 × 5 =	2 × 4 =	9 × 6 =	3 × 4 =

32 ÷ 4 = _____	20 ÷ 5 = _____	16 ÷ 8 = _____	24 ÷ 3 = _____
24 ÷ 4 = _____	15 ÷ 3 = _____	40 ÷ 5 = _____	36 ÷ 6 = _____

2 Fill in the missing numbers.

9 × 7 = ☐	3 × 0 = ☐	7 × 7 = ☐	1 × 5 = ☐	5 × 8 = ☐
7 × ☐ = 42	5 × ☐ = 40	☐ × 8 = 64	☐ × 4 = 16	3 × ☐ = 18

3 Solve the following multiplication problems.

4 × 10 =	4 × 100 =	4 × 1,000 =	7 × 10 =	7 × 100 =	7 × 1,000 =
8 × 100 =	5 × 10 =	6 × 1,000 =	2 × 10 =	9 × 100 =	0 × 1,000 =

CHALLENGE

4 Fill in the missing numbers.

300 ÷ _____ = 3 8,000 ÷ _____ = 1,000 40 ÷ _____ = 4

NAME _____ DATE _____

Addition & Multiplication Puzzles

1 Complete the addition puzzle box below. The sums of the rows and the diagonals are in bold boxes.

example

			213
125	25	50	200
50	150	33	233
13	25	350	388
			625

a

			225
	13		179
80		30	160
75	13	50	
			166

2 Complete the multiplication puzzle box below. The products of the rows and the diagonals are in bold boxes.

example

			2,000
10	2	1	20
2	2	100	400
1,000	3	2	6,000
			40

a

			60
100		3	600
		1,000	8,000
	3	2	60
			400

3 Complete each equation below.

ex $2 \times \underline{1} \times 1{,}000 = 2{,}000$

a $\_\_\_\_ \times 4 \times 100 = 800$

b $3 \times 3 \times \_\_\_\_ = 90$

c $1 \times \_\_\_\_ \times 1{,}000 = 8{,}000$

d $3 \times \_\_\_\_ \times 10 = 60$

e $2 \times 2 \times \_\_\_\_ = 400$

NAME _____ DATE _____

Multiplication Puzzles

Complete the multiplication puzzle boxes below. The products of the rows and the diagonals are in bold boxes.

example

			42
1	0	2	0
6	3	3	54
7	1	8	56
			24

1

			60
3			75
7	2		42
6	2		72
			36

2

			60
5	5		75
	4	5	60
	5		150
			120

3

			100
		5	160
2	5		50
4	3		48
			80

4

			240
	2	20	280
		4	60
4	6		72
			63

5

			120
3			360
	6	10	420
5	25		250
			36

NAME _____ DATE _____

Multiplication & Division Puzzles

1 Fill in the missing numbers.

7 × □ = 42	□ × 6 = 18	9 × □ = 81	□ × 3 = 24	□ × 8 = 40
5 × □ = 10	9 × □ = 45	□ × 8 = 32	6 × □ = 36	□ × 3 = 27

2 Use multiplication and division to find the secret path through each maze. The starting and ending points are marked for you. You can only move one space up, down, over, or diagonally each time. Write four equations to explain the path through the maze.

example

start

3	4	12
36	6	2
9	4	6

end

$3 \times 4 = 12$
$12 \div 2 = 6$
$6 \times 6 = 36$
$36 \div 9 = 4$

a

start

81	6	36
6	9	4
7	42	9

end

b

start end

1	3	2
6	2	9
3	18	2

CHALLENGE

3 Complete the division table below.

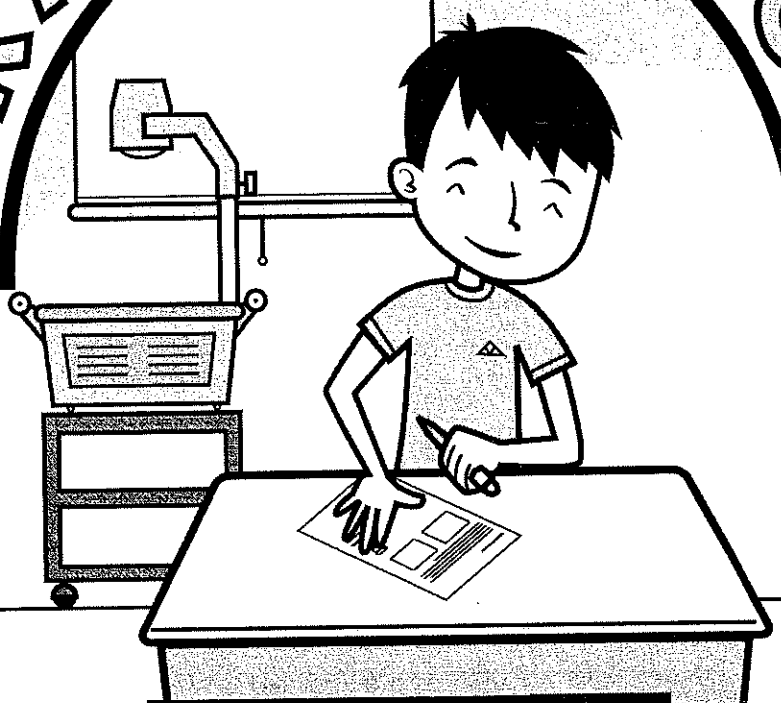
÷	600	240	120	180	540	5,400	1,800	1,200
60								

Week 2: Multiply and Divide Whole #'s

Math

BLACKLINES

PRACTICE BOOK



4

BRIDGES IN MATHEMATICS

Martha Ruttle

The MATH LEARNING CENTER

B4PB-B

NAME _____ DATE _____

Fill the Frames

Label each array frame below. Then fill it in with labeled rectangles. Write an addition equation to show how you got the total. Then write a multiplication equation to match the array.

Labeled Array Frame & Rectangle	Addition Equation	Multiplication Equation
example 10 | 3 4 | 4 × 10 = 40 | 4 × 3 = 12	40 + 12 = 52	4 × 13 = 52
1		
2		
3		

NAME _____ DATE _____

Multiplying by 10, 100 & 1,000

1 Multiply by 10, 100, and 1,000. Some of the problems below are already done for you as examples.

10 × 3 = 30	10 × 5 =	10 × 7 =	100 × 2 = 200	100 × 4 =	100 × 9 =
1,000 × 2 = 2,000	1,000 × 7 =	1,000 × 6 =	10 × 9 =	1,000 × 5 =	100 × 3 =

2 Fill in the missing numbers.

10 × 8 = ☐	10 × 4 = ☐	100 × 7 = ☐	100 × 5 = ☐
1,000 × 3 = ☐	1,000 × 5 = ☐	☐ × 9 = 9,000	100 × ☐ = 600
☐ × 100 = 500	☐ × 10 = 80	5 × ☐ = 500	7 × ☐ = 70

CHALLENGE

☐ × 3 = 3,000,000	☐ × 40 = 400	☐ × 60 = 6,000

NAME _____ DATE _____

Using Partial Products to Solve Multiplication Problems

Use partial products to solve each multiplication problem below.

Fill in the array to show the partial products.	Use numbers to show your work.
example 23 6 20 × 6 = 120 3 × 6 = 18	23 × 6 6 × 20 = 120 6 × 3 = + 18 138
1 24 7	24 × 7
2 36 6	36 × 6
3 47 4	47 × 4

NAME _____ DATE _____

Using the Standard Multiplication Algorithm

1 Use the standard algorithm to solve each multiplication problem.

ex $\overset{2}{34} \times 7 = 238$	**a** 43×6	**b** 28×4	**c** 59×4
d 37×3	**e** 84×3	**f** 33×8	**g** 68×5

2 Solve the problems below using the standard algorithm. Show your work.

ex $\overset{1\,1}{164} \times 3 = 492$	**a** 137×3	**b** 382×7	**c** 485×6
d 146×4	**e** 232×6	**f** 143×5	**g** 406×5

CHALLENGE

h $1{,}243 \times 5$	**i** $3{,}531 \times 4$	**j** $4{,}325 \times 4$	**k** $3{,}478 \times 9$

NAME _____ **DATE** _____

Two Different Multiplication Methods

1 Solve each problem below. Use the standard algorithm at least two times. Use the partial products method at least two times.

ex a standard algorithm $\begin{array}{r} {\scriptstyle 1\,2}\\ 135\\ \times\ \ 4\\ \hline 540 \end{array}$	**ex b** partial product $\begin{array}{r} 135\\ \times\ \ 4\\ \hline \end{array}$ $4 \times 100 = 400$ $4 \times 30 = 120$ $4 \times 5 = +\ 20$ 540	**a** $\begin{array}{r} 28\\ \times\ \ 8\\ \hline \end{array}$	**b** $\begin{array}{r} 47\\ \times\ \ 5\\ \hline \end{array}$
c $\begin{array}{r} 56\\ \times\ \ 3\\ \hline \end{array}$	**d** $\begin{array}{r} 321\\ \times\ \ 7\\ \hline \end{array}$	**e** $\begin{array}{r} 482\\ \times\ \ 6\\ \hline \end{array}$	**f** $\begin{array}{r} 259\\ \times\ \ 3\\ \hline \end{array}$

2 Ramon bought 8 big cases of breakfast cereal. Each case held 12 boxes of cereal. Each box of cereal held 18 oz. of cereal. How many boxes of breakfast cereal did Ramon buy?

a Restate the question in your own words:

b Underline the information in the problem you do need to solve the problem.

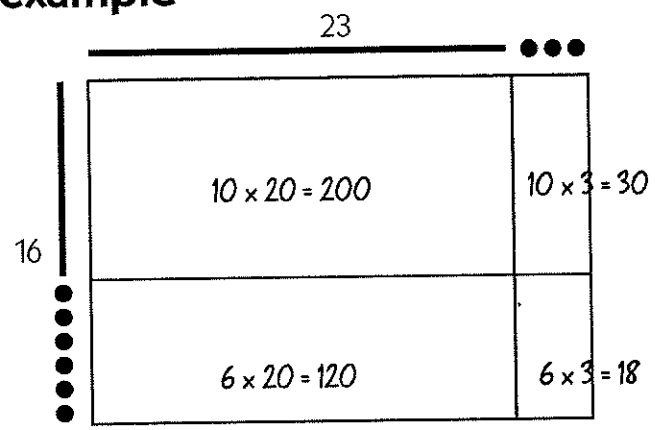
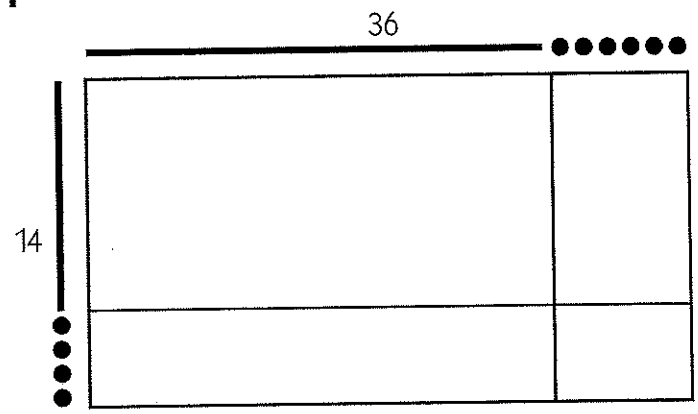
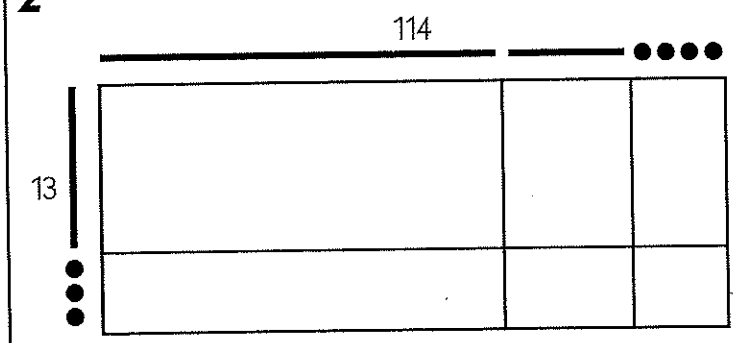
c Cross out the information in the problem you don't need to solve the problem.

d Solve the problem. Show all your work.

NAME _____ **DATE** _____

More Partial Products

Use partial products to solve each multiplication problem below.

Fill in the array to show the partial products.	Use numbers to show your work.
example  	23 × 16 10 x 20 = 200 10 x 3 = 30 6 x 20 = 120 6 x 3 = + 18 368
1  	36 × 14
2  	114 × 13

NAME _____ DATE _____

Reasonable Estimates & Partial Products

1 Fill in the bubble to show the most reasonable estimate for each multiplication problem.

a 23 × 21	○ 400	○ 600	○ 4,000	○ 6,000
b 31 × 19	○ 600	○ 700	○ 6,000	○ 7,000
c 312 × 18	○ 600	○ 800	○ 6,000	○ 10,000
d 96 × 33	○ 270	○ 1,000	○ 3,000	○ 27,000

2 Use partial products to solve each problem below. Draw lines between the digits to show which numbers you multiplied.

ex

$$\begin{array}{r} 63 \\ \times\ 21 \\ \hline \end{array}$$

20 × 60 = 1,200
20 × 3 = 60
1 × 60 = 60
1 × 3 = + 3
1,323

a

$$\begin{array}{r} 27 \\ \times\ 46 \\ \hline \end{array}$$

b

$$\begin{array}{r} 36 \\ \times\ 43 \\ \hline \end{array}$$

c

$$\begin{array}{r} 29 \\ \times\ 67 \\ \hline \end{array}$$

d

$$\begin{array}{r} 37 \\ \times\ 59 \\ \hline \end{array}$$

e

$$\begin{array}{r} 47 \\ \times\ 56 \\ \hline \end{array}$$

NAME _____ DATE _____

Using the Standard Algorithm & Partial Products to Multiply

1 Solve these multiplication problems.

30	40	40	200	200	200
× 30	× 30	× 40	× 20	× 30	× 40
_____	_____	_____	_____	_____	_____

2 Solve these multiplication problems. Use the standard algorithm to solve two of them. Use partial products to solve the other two. Hint: *Use the answers above to make sure your answers are reasonable.*

ex a Standard Algorithm

$$\begin{array}{r} {\scriptstyle 21} \\ 184 \\ \times\ 36 \\ \hline 1{,}104 \\ +\,5{,}520 \\ \hline 6{,}624 \end{array}$$

ex b Partial Products

$$\begin{array}{r} 63 \\ \times\ 21 \\ \hline 20 \times 60 = 1{,}200 \\ 20 \times 3 = 60 \\ 1 \times 60 = 60 \\ 1 \times 3 = +\ 3 \\ \hline 1{,}323 \end{array}$$

a

$$\begin{array}{r} 36 \\ \times\ 29 \\ \hline \end{array}$$

b

$$\begin{array}{r} 43 \\ \times\ 38 \\ \hline \end{array}$$

c

$$\begin{array}{r} 186 \\ \times\ 22 \\ \hline \end{array}$$

d

$$\begin{array}{r} 207 \\ \times\ 35 \\ \hline \end{array}$$

NAME _____ DATE _____

Using the Standard Algorithm to Multiply Large Numbers

1 Solve these multiplication problems.

80	80	80	600	600	600
× 60	× 70	× 80	× 10	× 20	× 30

2 Solve these multiplication problems using the *standard algorithm*. Use the answers above to make sure your answers are reasonable.

example

$$\begin{array}{r} {\scriptstyle 2\,1} \\ 184 \\ \times\ 36 \\ \hline 1{,}104 \\ +\ 5{,}520 \\ \hline 6{,}624 \end{array}$$

a

$$\begin{array}{r} 78 \\ \times\ 76 \\ \hline \end{array}$$

b

$$\begin{array}{r} 80 \\ \times\ 72 \\ \hline \end{array}$$

c

$$\begin{array}{r} 78 \\ \times\ 59 \\ \hline \end{array}$$

d

$$\begin{array}{r} 587 \\ \times\ 13 \\ \hline \end{array}$$

e

$$\begin{array}{r} 602 \\ \times\ 26 \\ \hline \end{array}$$

NAME _____ DATE _____

Multiplication & Division Practice

1 Solve these multiplication problems using the standard algorithm.

example	a	b	c
21 184 × 36 1,104 +5,520 6,624	68 × 70	507 × 23	289 × 32
d	**e**	**f**	**g**
356 × 32	209 × 83	447 × 25	387 × 67

2 Complete the following division facts.

56 ÷ 7 = _____ 81 ÷ 9 = _____ 32 ÷ 4 = _____

42 ÷ 6 = _____ 64 ÷ 8 = _____ 35 ÷ 5 = _____

40 ÷ 5 = _____ 21 ÷ 7 = _____ 18 ÷ 3 = _____

CHALLENGE

3 Solve the following problems mentally. Use the facts above to help if you want to.

81 ÷ 3 = _____ 42 ÷ 3 = _____ 64 ÷ 4 = _____

NAME _____ **DATE** _____

Multi-Digit Multiplication Practice

1 Solve these multiplication problems.

70 × 30	70 × 40	70 × 50	700 × 30	700 × 40

2 Solve these multiplication problems using the standard algorithm. Use the answers above to make sure your answers are reasonable.

example

$$\begin{array}{r} {\scriptstyle 2\,1} \\ 184 \\ \times\ 36 \\ \hline 1{,}104 \\ +\,5{,}520 \\ \hline 6{,}624 \end{array}$$

a

$$\begin{array}{r} 73 \\ \times\ 52 \\ \hline \end{array}$$

b

$$\begin{array}{r} 68 \\ \times\ 48 \\ \hline \end{array}$$

c

$$\begin{array}{r} 67 \\ \times\ 36 \\ \hline \end{array}$$

d

$$\begin{array}{r} 703 \\ \times\ 28 \\ \hline \end{array}$$

e

$$\begin{array}{r} 689 \\ \times\ 40 \\ \hline \end{array}$$

Week 3: Fractions
Math

BLACKLINES

PRACTICE BOOK

BRIDGES IN MATHEMATICS 4

Martha Ruttle

The MATH LEARNING CENTER

B4PB-B

NAME _____ DATE _____

Fractions of a Foot

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

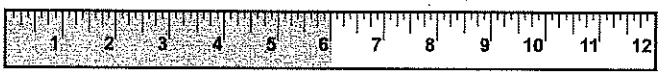
example

$\frac{3}{12}$ _____ $\frac{1}{4}$ _____

a

_____ _____

b



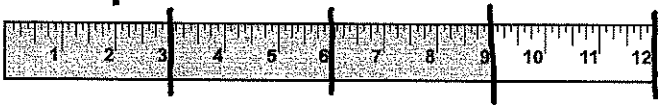
_____ _____

c

_____ _____

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.

example



$\frac{9}{12}$ _____ $\frac{3}{4}$ _____

a

$\frac{8}{12}$ _____ _____

b

$\frac{10}{12}$ _____ _____

c

$\frac{12}{12}$ _____ _____

d

$\frac{2}{6}$ _____ _____

e

$\frac{2}{3}$ _____ _____

NAME _____ DATE _____

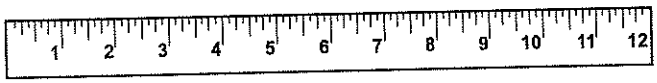
More Fractions of a Foot

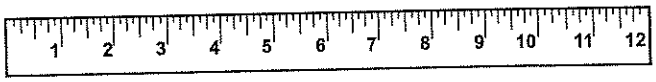
1 Write the number of inches in each fraction of a foot. You can look at page 41 to help.

a $\frac{1}{2}$ of a foot is equal to _____ inches **b** $\frac{1}{4}$ of a foot is equal to _____ inches

c $\frac{1}{6}$ of a foot is equal to _____ inches **d** $\frac{1}{3}$ of a foot is equal to _____ inches

2 Write the number of inches in each fraction of a foot. Use the rulers below and the information in problem 1 to help. Then circle the greater fraction in each pair. If they are equal, circle them both.





example (circle $\frac{1}{2}$) $\frac{1}{4}$ 6 inches 3 inches	**a** $\frac{1}{3}$ $\frac{1}{4}$
b $\frac{2}{3}$ $\frac{1}{2}$	**c** $\frac{1}{2}$ $\frac{3}{6}$
d $\frac{2}{3}$ $\frac{3}{4}$	**e** $\frac{1}{4}$ $\frac{2}{3}$

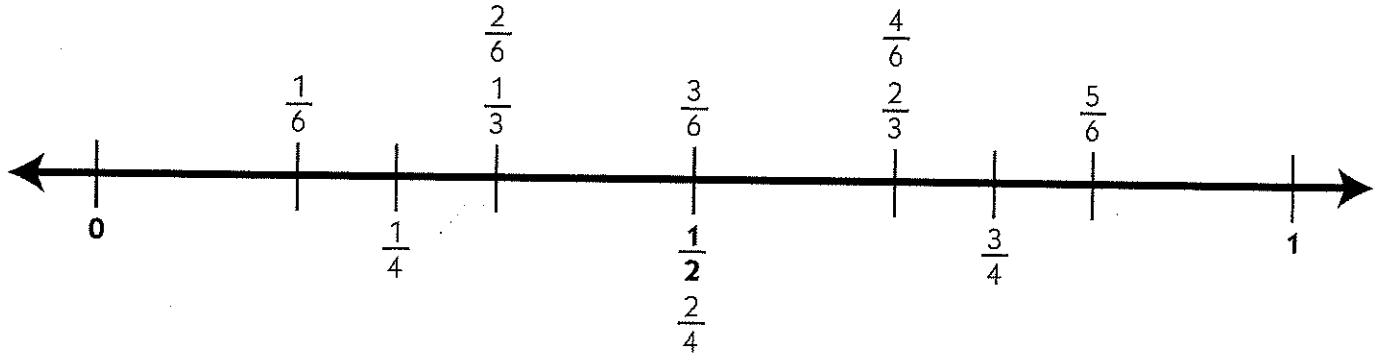
3 Write all the factors of each number. Hint: *Think about pairs of factors that multiply to make the number.*

ex 18	1, 2, 3, 6, 9, 18	**a** 12	
b 15		**c** 36	
d 60		**e** 120	

NAME _____ **DATE** _____

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	$\frac{4}{6}$	$\frac{1}{4}$	$\frac{4}{6} > \frac{1}{4}$
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	$\frac{3}{4}$	$\frac{5}{6}$	

NAME _____ DATE _____

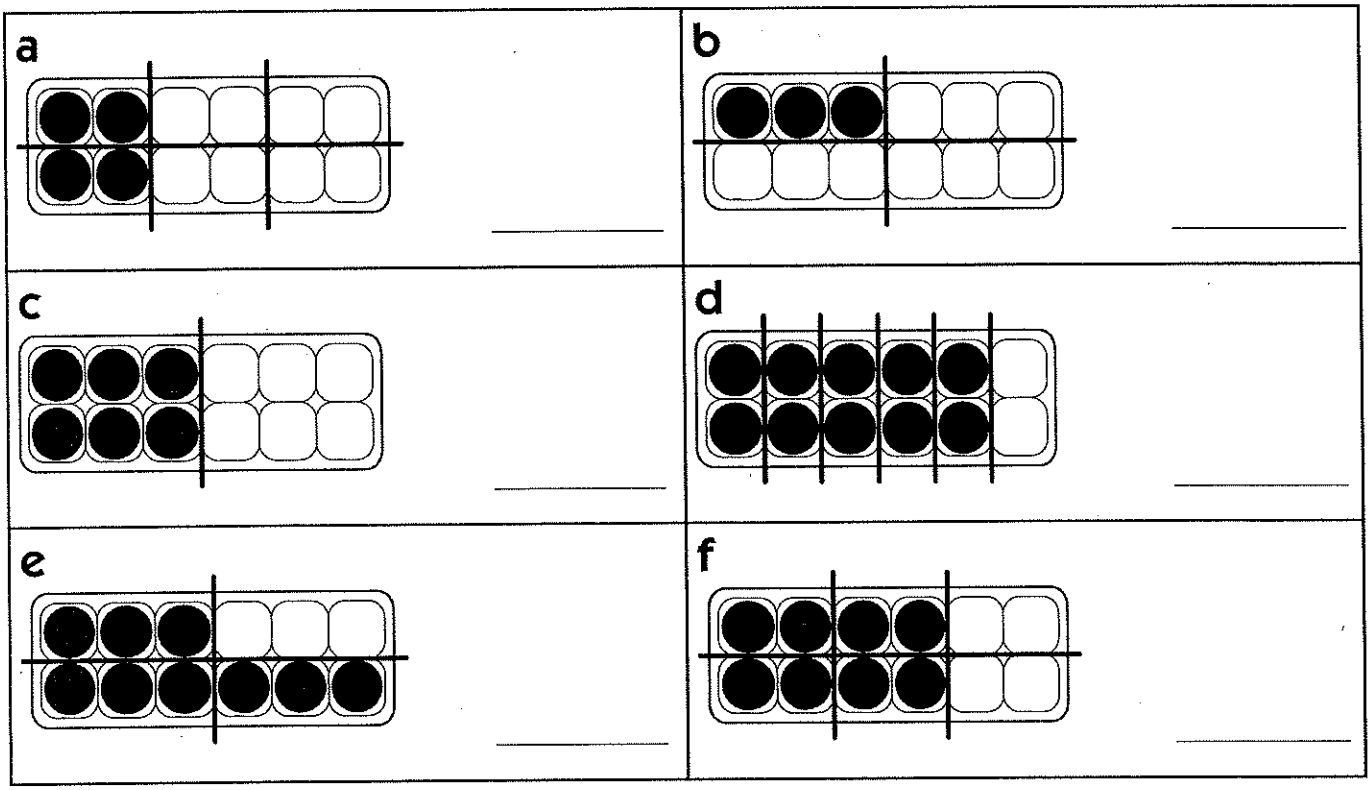
Egg Carton Fractions

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

$12 \div 2 =$ _____ $12 \div 3 =$ _____ $12 \div 4 =$ _____ $12 \div 6 =$ _____

$6 \times 3 =$ _____ $4 \times 2 =$ _____ $3 \times 3 =$ _____ $2 \times 5 =$ _____

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.



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

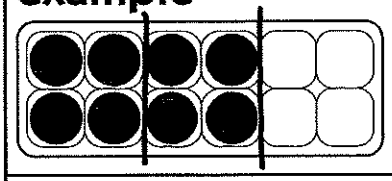
ex a $\frac{1}{4} < \frac{1}{2}$	ex b $\frac{1}{2} > \frac{1}{3}$	a $\frac{4}{6}$ $\frac{2}{3}$
b $\frac{1}{3}$ $\frac{1}{4}$	c $\frac{3}{4}$ $\frac{5}{6}$	d $\frac{1}{3}$ $\frac{3}{4}$
e $\frac{1}{2}$ $\frac{2}{4}$	f $\frac{2}{3}$ $\frac{3}{4}$	g $\frac{2}{6}$ $\frac{1}{3}$

NAME _____ **DATE** _____

More Egg Carton Fractions

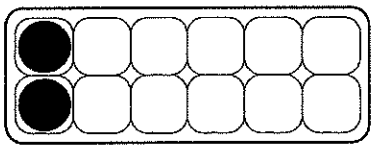
1 Write at least two fractions to show the part of each egg carton that is filled. Draw lines on the egg cartons to divide them into equal parts.

example



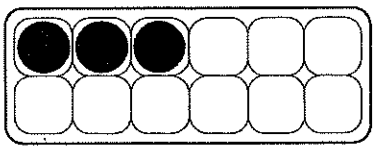
$\frac{2}{3}$ $\frac{4}{6}$

a



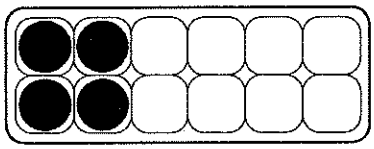
_____ _____

b



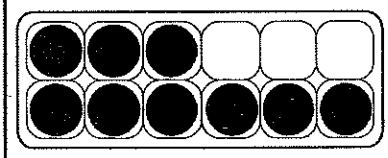
_____ _____

c



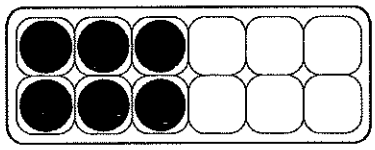
_____ _____

d



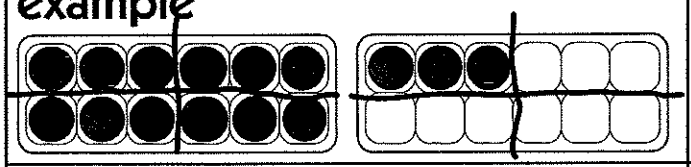
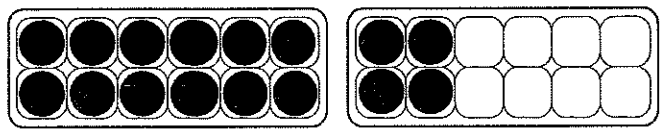
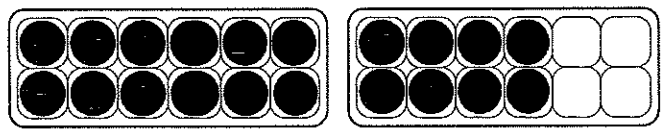
_____ _____

e



_____ _____

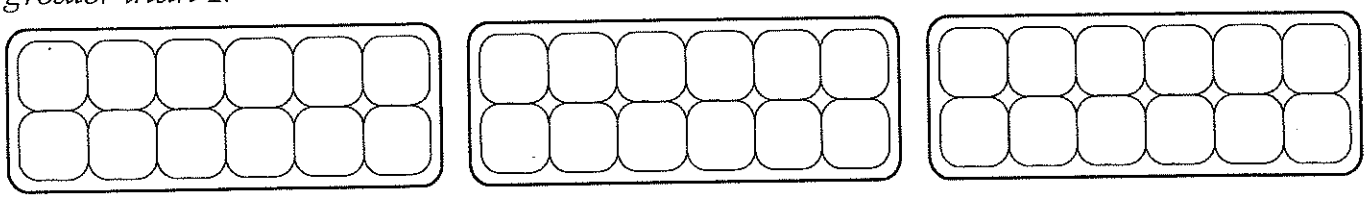
2 Fractions can be greater than one. If a fraction greater than one is writtten as a whole number with a fraction, it is called a *mixed number.* If it is written as a fraction, it is called an *improper fraction.* Draw on the egg cartons to divide them into equal parts. Then write a mixed number and an improper fraction to show how many full egg cartons there are.

Egg Carton	Mixed Fraction	Improper Fraction
example 	$1\frac{1}{4}$	$\frac{5}{4}$
a 		
b 		

NAME _____ **DATE** _____

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.*

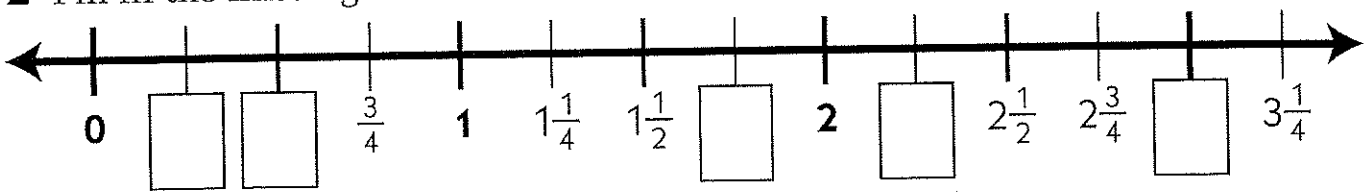


$\frac{1}{2}$ $\frac{5}{3}$ $\frac{3}{4}$ $\frac{1}{3}$ $\frac{7}{4}$ $\frac{2}{3}$ $\frac{3}{2}$ $\frac{1}{4}$

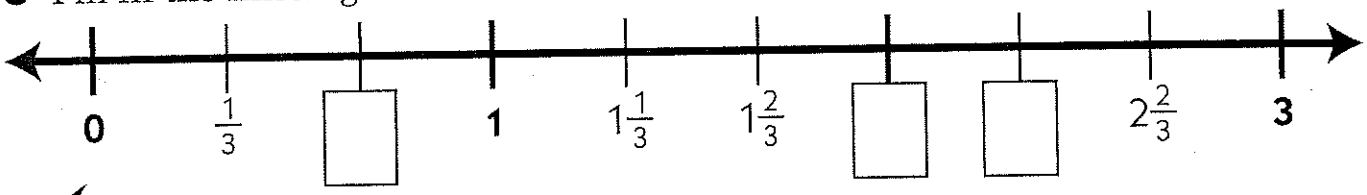
_____ _____ _____ _____ _____ _____ _____ _____

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

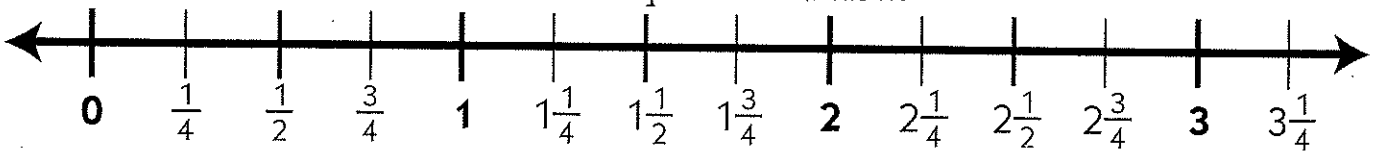
4 Which fraction is greater, $\frac{3}{4}$ or $\frac{8}{9}$? How do you know?

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

NAME _____ **DATE** _____

Fractions & Mixed Numbers on a Number Line

1 Use the number line to answer the questions below.



example a What improper fraction is equal to $2\frac{1}{4}$? In other words, how many fourths are in two and one-fourth?	$\frac{9}{4}$
example b What number is halfway between 2 and 3?	$2\frac{1}{2}$
a What improper fraction is equal to $1\frac{1}{2}$? In other words, how many halves are in one and one-half?	
b What mixed number is equal to $\frac{6}{4}$?	
c Which is greater, $\frac{5}{4}$ or $1\frac{1}{2}$?	
d What mixed number is equal to $\frac{13}{4}$?	
e What improper fraction is equal to $2\frac{1}{2}$? In other words, how many halves are in two and one-half?	
f Which is greater, $1\frac{3}{4}$ or $\frac{8}{4}$?	

CHALLENGE

2 What number is halfway between 0 and 1?

3 What number is halfway between 0 and 3?

4 What number is halfway between 0 and 17?

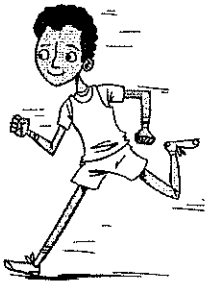
NAME _____ DATE _____

Fraction Story Problems

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

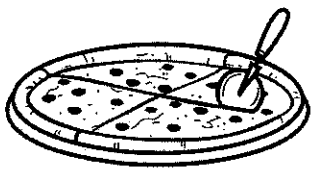
1 Jim had a piece of string that was three-fourths of a foot long. Damien had a piece of string that was half a foot long. Whose string was longer? How much longer was it? Use a labeled sketch, as well as numbers and/or words, to prove your answer.

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

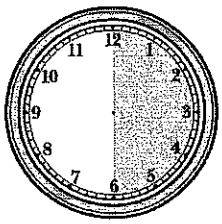
3 Lisa and her brother Darius were eating small pizzas. Their mom cut each pizza into fourths. Lisa figured out that she ate one and a half little pizzas. Darius counted that he ate seven fourths. Who ate more pizza? How much more? Use a labeled sketch, numbers, and/or words to prove your answer.



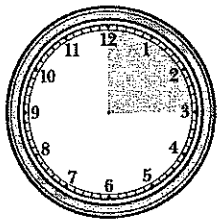
NAME _____ **DATE** _____

Clock Fractions

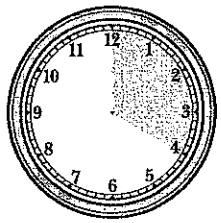
Sometimes people talk about time in fractions of an hour. For example, a quarter of an hour is 15 minutes. Half an hour is 30 minutes. The pictures below show some different fractions of an hour on clocks.



$\frac{1}{2}$ hour is 30 minutes



$\frac{1}{4}$ hour is 15 minutes

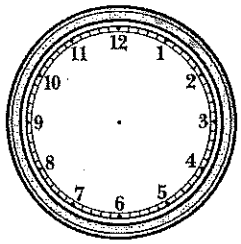
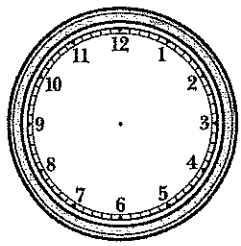
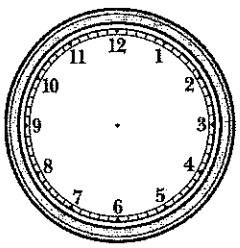


$\frac{1}{3}$ hour is 20 minutes

1 Problem 2 will be easier if you can divide 60 by some other numbers. Solve the division problems below.

a $60 \div 2 =$ _____ **b** $60 \div 3 =$ _____ **c** $60 \div 4 =$ _____ **d** $60 \div 6 =$ _____

2 Draw the following fractions on the clocks. Then write how many minutes are in each fraction of an hour.

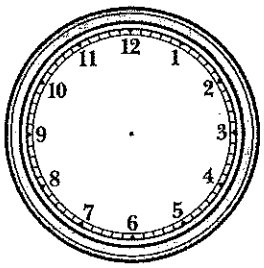
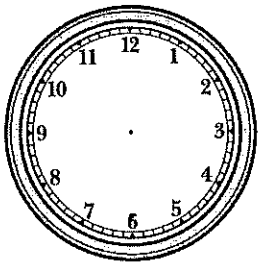
Fractions of an Hour	Picture on a Clock	How Many Minutes?
a $\frac{3}{4}$		
b $\frac{2}{3}$		
c $\frac{1}{6}$		

NAME _____ **DATE** _____

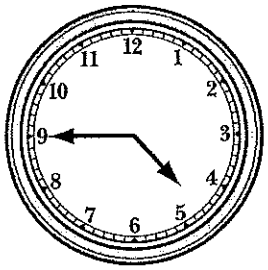
Time & Fractions

1 Use the clocks below to help answer the questions. Show all your work and circle your answers.

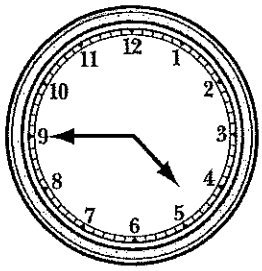
a Hiroko spent half an hour on her homework. Her sister Mai spent four-sixths of an hour on her homework. Who spent more time doing homework?

b The sisters started doing their homework at 4:45 in the afternoon. What time did Hiroko finish?

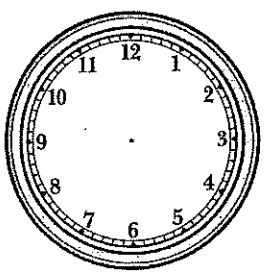
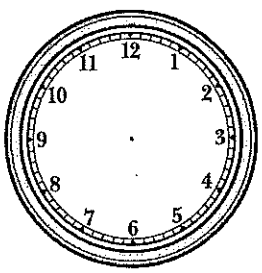
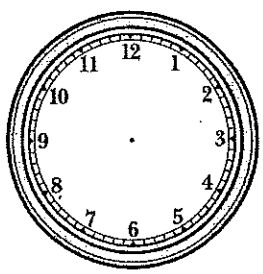
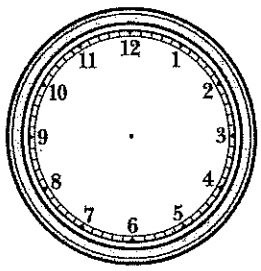


c What time did Mai finish?



CHALLENGE

2 It takes Ashley's family five-thirds of an hour to drive to her grandmother's house. It takes them eleven-sixths of an hour to drive to her aunt's house. Which drive takes more time for Ashley's family? How much more time? Show your work.

NAME _____ DATE _____

Division Tables & Equivalent Fractions

1 Complete the division tables below.

ex

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

a

÷	8	32	12	16	36	28	24	20
4	2							

b

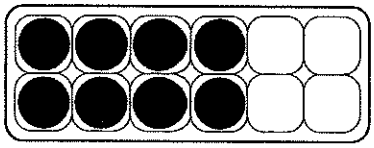
÷	16	48	72	56	64	32	40	24
8	2							

c

÷	14	63	42	35	56	49	28	21
7	2							

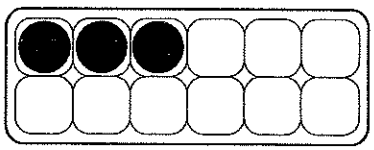
2 Write at least two fractions to show how much of each egg carton is filled.

example

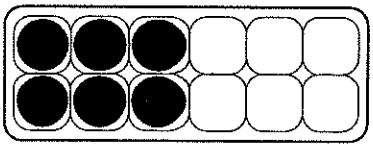


$\frac{8}{12}$ $\frac{4}{6}$ $\frac{2}{3}$

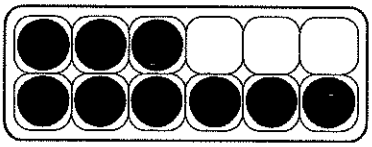
a



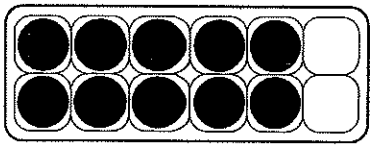
b



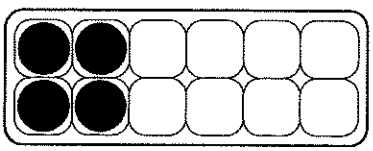
c



d

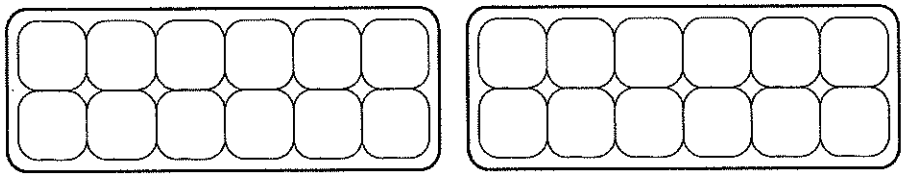
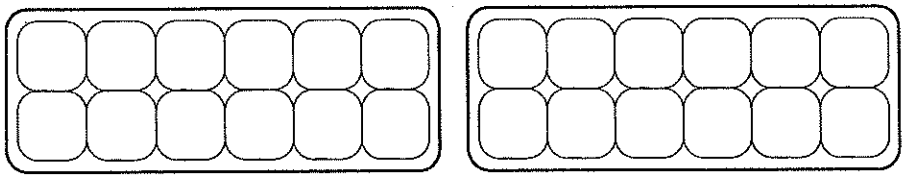


e



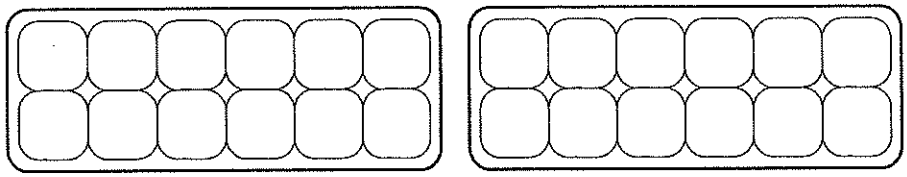
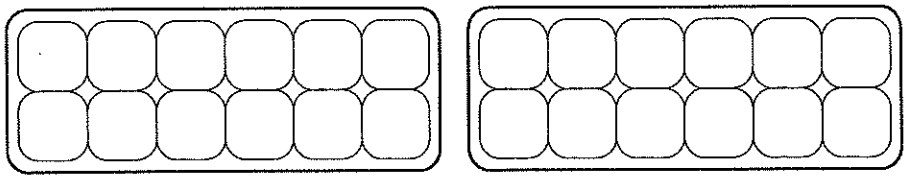
NAME _____ **DATE** _____

Greater Than & Less Than

Problem and picture of the fraction	Name of the fraction
1 Show a fraction that is greater than 1 and less than $1\frac{1}{2}$. 	
2 Show a fraction that is greater than $1\frac{1}{2}$ and less than 2. 	

Use the following information to complete the items below.

$\frac{1}{4}$ ← numerator $\frac{1}{4}$ ← denominator

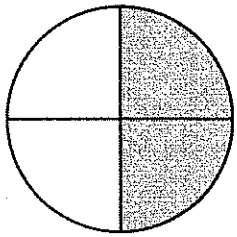
Problem and picture of the fraction	Name of the fraction
3 Show a fraction with 4 in the denominator that is greater than $1\frac{1}{3}$ and less than $1\frac{3}{4}$. 	
4 Show a fraction with 3 in the denominator that is greater than $\frac{3}{4}$ and less than $1\frac{1}{2}$. 	

NAME _____ **DATE** _____

Fractions & Mixed Numbers

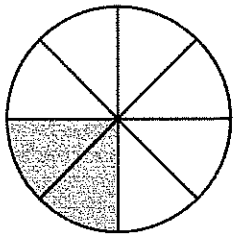
1 The circles below are divided into equal parts. Write two fractions to show what part of each circle is filled in.

example

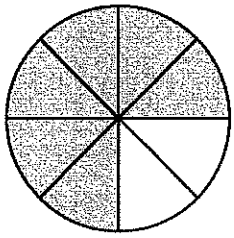


$\frac{1}{2}$ $\frac{2}{4}$

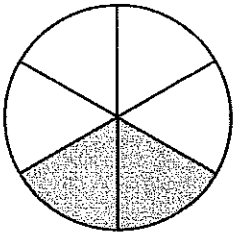
a



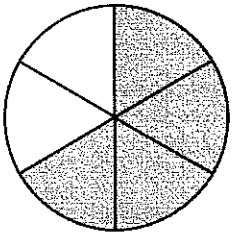
b



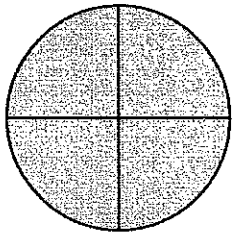
c



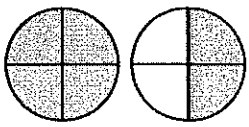
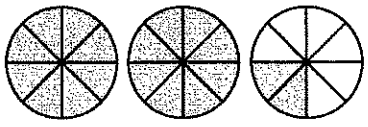
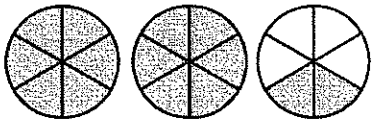
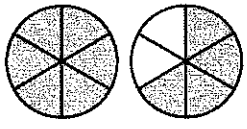
d



e



2 The circles below are divided into equal parts. Write a fraction and a mixed number to show how many circles are filled in.

	Fraction	Mixed Number		Fraction	Mixed Number
example 	$\frac{3}{2}$	$1\frac{1}{2}$	**a** 		
b 			**c** 		

3 Fill in the missing fractions or mixed numbers.

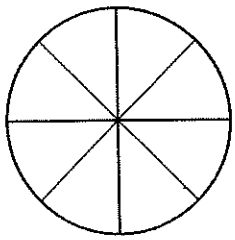
CHALLENGE

Fractions	**ex** $\frac{5}{2}$	**a** $\frac{9}{2}$	**b** $\frac{9}{4}$	**c** $\frac{14}{4}$	**d**	**e**	**f** $\frac{62}{3}$	**g**
Mixed Number	$2\frac{1}{2}$				$3\frac{1}{2}$	$2\frac{3}{4}$		$30\frac{1}{3}$

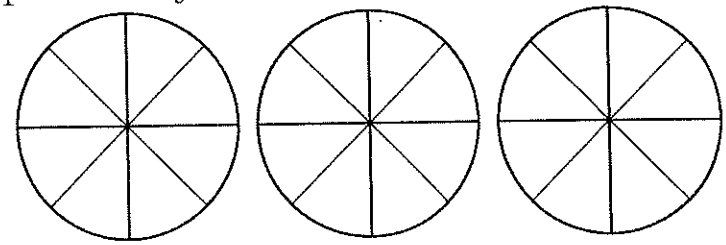
NAME _____ DATE _____

Pizza Problems

1 The pizzas at Little Tom's are cut into 8 pieces. Lucy ate $\frac{1}{2}$ of a pizza and Alex ate $\frac{3}{8}$ of a pizza. Who ate more pizza? How much more? Use pictures, numbers, and/or words to explain how you know.



2 On Friday night, the Suarez family ate $2\frac{3}{4}$ pizzas. Their neighbors, the Johnson family, ate $\frac{17}{8}$ of a pizza. Which family ate more pizza? How much more? Use pictures, numbers, and/or words to explain how you know.

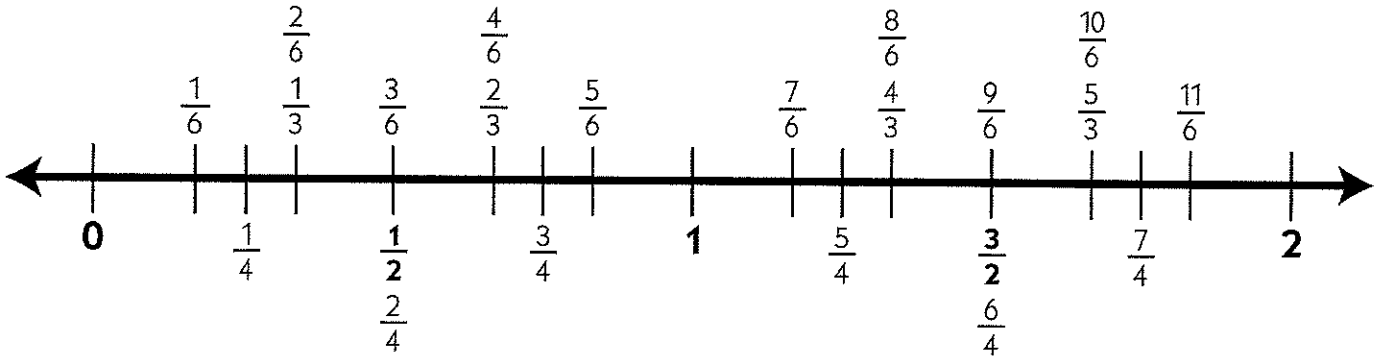


CHALLENGE

3 Which is greater, $\frac{82}{8}$ or $\frac{37}{4}$? Explain how you know. Hint: *Think about how many eighths and how many fourths are in one whole.*

NAME _____ **DATE** _____

Using Fractions on a Number Line to Solve Problems



1 Use the number line above to help answer these questions.

a Celia ran $\frac{5}{6}$ of a mile. Jade ran $1\frac{1}{4}$ mile. Who ran farther?

b Lester has a piece of rope that is $\frac{9}{6}$ of a foot long. Dario has a piece of rope that is $1\frac{1}{3}$ of a foot long. Whose piece of rope is longer?

c Table A is $1\frac{2}{3}$ of a yard long. Table B is $\frac{11}{6}$ of a yard long. Which table is longer?

2 Put the following fractions in order from smallest to greatest. Hint: *Think about landmarks. Which fractions are less than one-half? Which fractions are close to 1?*

$\frac{1}{4}$	$\frac{7}{6}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{12}$	$\frac{7}{8}$

_____ _____ _____ _____ _____ _____

Least Greatest

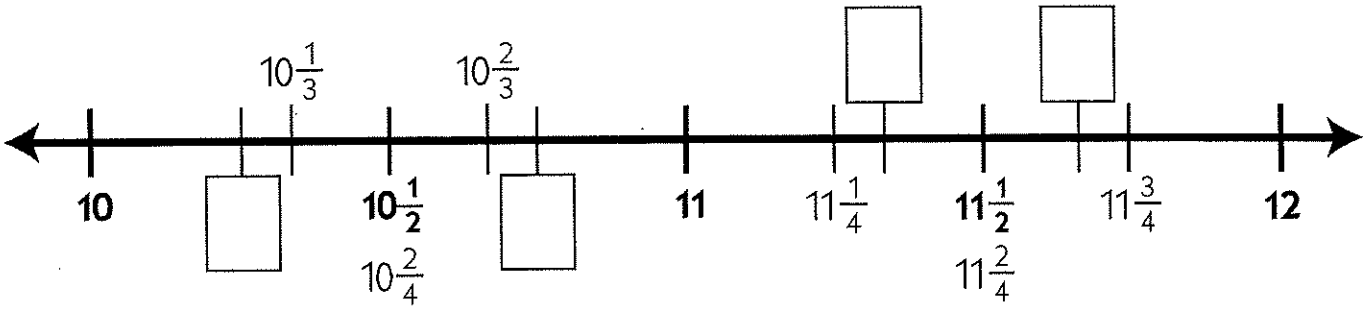
3 Think about landmarks like one-half and one to compare the fractions below. Use a greater than (>) or less than (<) sign to compare them.

ex $\frac{3}{4} > \frac{1}{3}$	**a** $\frac{3}{6}$ $\frac{3}{4}$	**b** $\frac{5}{6}$ $\frac{3}{4}$	**c** $\frac{5}{6}$ $\frac{2}{3}$
d $\frac{5}{4}$ $\frac{5}{6}$	**e** $\frac{5}{4}$ $\frac{4}{3}$	**f** $\frac{11}{6}$ $\frac{5}{3}$	**g** $\frac{10}{9}$ $\frac{101}{100}$

NAME _____ DATE _____

Fraction Practice

1 Fill in the four missing numbers on the fraction number line below.



2 Use the number line above to help answer these questions.

a Alicia ran $10\frac{2}{3}$ miles. Did she run closer to 10 miles or 11 miles?

b Erica ran $11\frac{1}{4}$ miles. She said she ran about 12 miles. Was she accurate? Explain why or why not.

c Frank ran $10\frac{2}{3}$ miles. Cameron ran $10\frac{2}{4}$ miles. Who ran farther?

3 There are 4 fourths in 1 whole, so there are 40 fourths in 10 wholes. Therefore, we can say $\frac{4}{4} = 1$ and $\frac{40}{4} = 10$. Think about how many thirds and fourths are in a whole, and look at the number line above, to help fill in the blanks below.

$\frac{44}{4} =$ 11	$\frac{2}{2} =$ _____	$\frac{20}{2} =$ _____	$\frac{22}{2} =$ _____
$\frac{3}{3} =$ _____	$\frac{30}{3} =$ _____	$\frac{33}{3} =$ _____	$\frac{35}{3} =$ _____
$\frac{23}{2} =$ _____	$\frac{31}{3} =$ _____	$\frac{42}{4} =$ _____	$\frac{29}{3} =$ _____

4 Write the following fractions in simplest form.

ex $\frac{12 \div 3}{15 \div 3} = \frac{4}{5}$	**a** $\frac{6 \div \_\_}{21 \div \_\_} =$	**b** $\frac{8 \div \_\_}{36 \div \_\_} =$