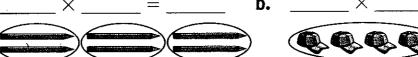
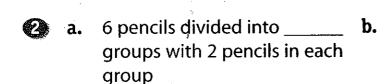


Understanding Division









b. 10 apples in 5 groups with 2 apples in each group

ÝÝ	ÝÝ	ŰŰ	ÓÓ	ÓÓ

Frank has 12 pieces of candy. He gives 4 pieces of candy to each friend. How many friends receive candy?





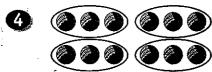
Hlow many pieces of candy does Frank have?

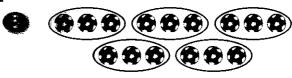
Hlow many pieces of candy does Frank give each friend?

112 ÷ 4 =

Hlow many friends receive candy? ___

Write a division sentence for each problem.





- 6 12 crayons for 2 children with 6 crayons for each child
- 4 cookies for 2 people with2 cookies for each person

WORK ON YOUR OWN

Write Division Sentences

Using Symbols

1. Divide 8 stars into 2 groups with 4 stars in each group.



Using Words

The total number of items is put into groups where the size of each group is the same.

In a division sentence:

- the total number of items is the dividend,
- the number of items in each group is the divisor, and
- the number of groups is the quotient.

Division Facts: 1, 2, and 5

Name ______ Class _____ Date _____

GET STARTED

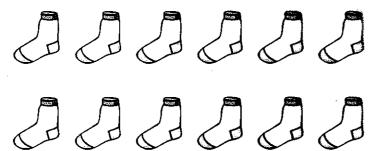
- 5, 10, _____, 20, _____, ____, 35, _____, 45
- 8 T-shirts in 4 packages with 2 T-shirts in each package



0		
	15 ÷ 5 =	

Michelle has 12 socks. How many pairs of socks does she have?





How many socks does Michelle have? _____ How many socks are in 1 pair? _____

How many pairs are there? _____

 $12 \div 2 =$ _____ pairs of socks.

Find each quotient.

$$8 \div 2 =$$

9
$$1.6 \div 2 =$$

WORK ON YOUR OWN

Divide by 1, 2, and 5

Using Symbols

$$6 \div 1 = 6$$

$$8 \div 2 = 4$$



8 is divided into 4 groups of 2.

$$15 \div 5 = 3$$



15 is divided into 3 groups of 5.

Using Words

When a number is divided by 1, the quotient is always that number.

When a number is divided by 2, the quotient is the number of groups of 2 that can be formed.

When a number is divided by 5, the quotient is the number of groups of 5 that can be formed.

Division Facts: 3, 4, and 6

Name ______ Class _____ Date _____

GET STARTED

- 3, 6, 9, 12, _____, ____, ____, ____, 24, _____
- **2** 4, 8, _____, ____, 20, _____, ____, 36
- **3** 6, _____, 18, _____, 30, _____, ____, 48, _____



$$15 \div 3 =$$

A tire factory made 20 new car tires. A car has 4 tires. How many cars will get new tires?







How many groups of 4 are there?

20 ÷ 4 = _____ cars will get new tires.

Find each quotient.

$$\mathbf{0}$$
 24 ÷ 6 = _____

WORK ON YOUR OWN

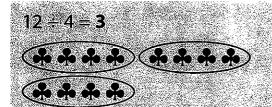
Divide by 3, 4, and 6

Using Symbols

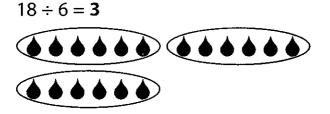
 $15 \div 3 = 5$



15 is divided into **5 groups** of 3.



12 is divided into 3 groups of 4.



18 is divided into **3 groups** of 6.

Using Words

When a number is divided by 3, the quotient is the number of groups of 3 that can be formed.



When a number is divided by 4, the quotient is the number of groups of 4 that can be formed.

When a number is divided by 6, the quotient is the number of groups of 6 that can be formed.

Division Facts: 7, 8, and 9

Name Class Date

GET STARTED

- **1** 7, 14, ______, ____, 42, 49, _____, 63
- 8, _____, 24, _____, 48, _____, 72
- **3** 9, 18, _____, 36, _____, 63, _____,
- **O ARRARA ARRARA**14÷7=____
- orerere cresere e ererere

 $18 \div 9 =$ _____

24 ÷ 8 = _____

Keira made 27 muffins for a bake sale. She will put 9 muffins in each box. How many boxes will Keira need?









How many groups of 9 are there? _____

27 ÷ 9 = ____

Keira will need _____ boxes.

Find each quotient.

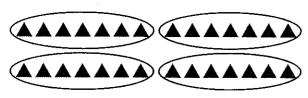
8
$$32 \div 8 =$$
 9 $36 \div 9 =$

WORK ON YOUR OWN

Divide by 7, 8, and 9

Using Symbols

$$28 \div 7 = 4$$



Using Words

When a number is divided by 7, the quotient is the number of groups of 7 that can be formed.

28 is divided into 4 groups of 7.

$$16 \div 8 = 2$$

16 is divided into 2 groups of 8.

$$27 \div 9 = 3$$



27 is divided into 3 groups of 9.

When a number is divided by 8, the quotient is the number of groups of 8 that can be formed.

When a number is divided by 9, the quotient is the number of groups of 9 that can be formed.

Multiplication and Division Fact Families

______ Class ______ Date _____

GET STARTED

3 a.
$$10 \div 5 =$$

b.
$$10 \div 2 =$$

$$3,4,12$$
Multiplication facts
 $3 \times 4 =$

Division facts

Use the pictures and the numbers 3, 6, and 18 to write a multiplication and division fact family.





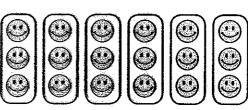
$$\boxed{\textcircled{0} \textcircled{0} \textcircled{0} \textcircled{0} \textcircled{0} \textcircled{0}}$$



Number of groups:

Number in each group:_____

Number in all:_____



Number of groups: Number in each group: Number in all:

 ×	=	
÷	=	

Write the multiplication and division facts for each fact family.

$$7 \quad \times \quad 3 \quad = \quad 2$$

WORK ON YOUR OWN

Recognize Multiplication and Division Fact Families

Using Symbols

Using Words

4, 9, 36

Two factors and their product can be used to make the numbers in a fact family. Each fact will use the same three numbers.

$$4 \times 9 = 36$$
 $36 \div 9 = 4$

$$9 \times 4 = 36 \quad 36 \div 4 = 9$$

The three numbers make 2 multiplication facts and 2 division facts.

The greatest number is always last in the multiplication facts and first in the division facts.

$$5 \times 5 = 25$$
 $25 \div 5 = 5$

If the two smallest numbers are the same. the three numbers make 1 multiplication fact and 1 division fact.

Dividing a 2-Digit Dividend by a 1-Digit Divisor

a.
$$6 \div 3 =$$

b.
$$9 \div 3 =$$

Alicia has 48 balloons. She puts the balloons into groups of 4. How many groups of balloons does Alicia have?





How many groups of balloons are there? _____

 $48 \div 4 =$ _____ groups of balloons.

Find each quotient. Check each answer using multiplication.



WORK ON YOUR OWN

Divide a 2-Digit Dividend by a 1-Digit Divisor



Using Symbols

Using Words

1. $\frac{2}{2)48}$

Divide the tens digit of the dividend by the divisor. Write the quotient above the tens digit.

2. 2)48 2)48 4

Multiply the quotient by the divisor.
Write the product under the dividend.

3. $\frac{2}{2)48}$ $\frac{-4 \checkmark}{08}$

Subtract the product from the digit above it. Bring down the ones digit by writing it next to the difference.

4. 242)48 -4408 -8

Repeat steps 1-3 for the ones digit of the dividend.

5. $24 \times 2 = 48$

Check the answer with multiplication.

Problem-Solving: Working Backward



- **a.** ____ ÷ ___ = ___ **b.** ___ ÷ ___ = ___
- **a.** _____ × ___ = ____ **b.** ____ × ___ = ____
- Kenny bought some goldfish in October. He had 4 times as many goldfish by the end of November. By the end of December, Kenny had 16 goldfish, which was 2 times more than he had at the end of November. How many goldfish did Kenny buy in October?
 - a. Find:
 - b. How? _____
 - **c. Solve.** Model: ____ × ___ = ____

Work backward: ____ ÷ ___ = ___

Kenny bought _____ goldfish in October.

d. Is the answer reasonable? Explain.

Solve the problem.

The swim team held a fund-raiser. They divided the money they raised into 2 equal parts. One part went into a savings account. The other part went toward new goggles. Each of the 5 team members received \$8 for new goggles. How much money did the swim team raise at the fund-raiser?

a.	Find:	

- b. How? _____
- c. Solve. Model: ____ ÷ ___ = ____ Work backward: ___ × ___ = ____

The swim team raised \$.

d. Is the answer reasonable? Explain.	
---------------------------------------	--

WORK ON YOUR OWN

Solve a Problem by Working Backward

Michael played 4 times as many video games as Charlie. Louis played 16 video games, which is 4 times as many as Michael. How many video games did Charlie play?

- 1. Find: how many video games Charlie played
- 2. How? Work backward.
- 3. Solve. Model: $? \times 4 \times 4 = 16$

Work backward: $16 \div 4 \div 4 = 1$

Charlie played 1 video game.

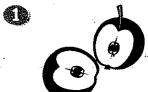
4. Is the answer reasonable? Explain. Yes, $1 \times 4 \times 4 = 16$.

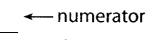


Understanding Fractions

Name ______ Date _____

GET STARTED





— denominator



← numerator

← denominator



← numerator

← denominator

Jerome made a design in a circle.

How many equal parts are in the circle? _____

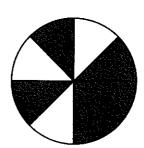
How many parts are blue? _____

What fraction of the circle is blue?

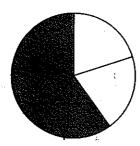
How many parts are not blue? _____

What fraction of the circle is not blue? —

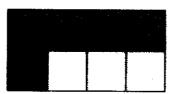




Write the fraction that names each shaded part.



6





WORK ON YOUR OWN

Understand Fractions

Using Symbols

1. Write the fraction that names the shaded part.





Using Words

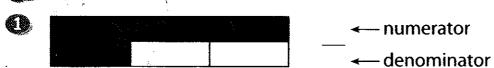
Count the number of shaded parts. Write this number as the numerator.

Count the number of equal parts of the whole. Write this number as the denominator.

Naming Fractional Parts of a Set

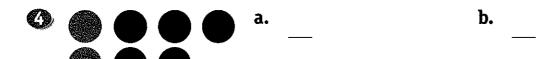
Name	Class	Dato
rance	∠10322	Date











Billy has 4 footballs and 2 basketballs. What fraction of the balls are footballs?





How many balls are footballs? _____

How many balls are there in all? _____

of the balls are footballs.

Write a fraction to complete each sentence.



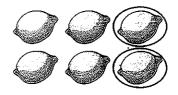






— of the tennis balls are yellow.





— of the lemons are circled.



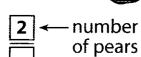
— of the apples are green.

WORK ON YOUR OWN

Write Fractions of a Set

Using Symbols

1. What fraction of the fruits are pears?





Write the number of items that are being considered above the fraction bar. This number is the numerator.



2. 2

3 ← total number of fruits

Write the total number of items under the fraction bar. This number is the denominator.

Understanding Equivalent Fractions

Name ______ Date _____

GET STARTED







---- denominator





— numerator

← denominator

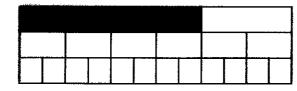
(3)
$$\frac{1}{2} = --$$

1		
	1	2
	<u>1</u> 4	<u>1</u> 4

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

Use the model to name two fractions that are equivalent to $\frac{2}{3}$.





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

Name each equivalent fraction.

6

			$\frac{1}{2}$		
10 10 10	1 1 10 10	1 10 1	$\frac{1}{0} \left \frac{1}{10} \right $	1 10	1 10

$$\frac{1}{2}=\frac{1}{10}$$

6

1 4	1/4	<u>1</u> 4	1	<u> </u>
1 1 1	1 1	1 1	1	1
8 8	8 8	8 8	8	8

$$\frac{3}{4} = \frac{}{8}$$

Write whether the fractions are equivalent or not equivalent.













WORK ON YOUR OWN

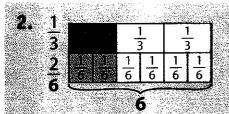
Name Equivalent Fractions

Using Symbols

1. $\frac{1}{3}$ 2 $\frac{\frac{1}{3}}{\frac{1}{6}}$ $\frac{\frac{1}{6}}{\frac{1}{6}}$ $\frac{\frac{1}{6}}{\frac{1}{6}}$

Using Words

Count the number of shaded parts in the equivalent fraction model that represent the same amount as the given fraction. This number is the numerator of the equivalent fraction.



Count the total number of parts in the equivalent fraction model. This number is the denominator of the equivalent fraction.

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

Write the equivalent fractions.

Comparing Fractions

Name ______ Class _____ Date _____

GET STARTED



4		-	2	
18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 8	1 8	1/8	<u>1</u> 8

$$\frac{1}{2} = \frac{1}{8}$$







6

$\frac{1}{4}$ $\frac{1}{4}$	1/4	1 4
$\frac{1}{4}$ $\frac{1}{4}$	<u>1</u> 4	$\frac{1}{4}$

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

0





Kenya wrote 4 pages of a 5-page paper for social studies. Dante wrote 3 pages of the 5-page paper. Who has written more of the paper?



Kenya:



Dante:

Which person's model shows the greater shaded area?

has written more of the paper.

Compare. Write >, <, or =.

- **6** $\frac{1}{2}$
- $\frac{1}{4}$
- 6
- $\frac{3}{8}$





- $\frac{4}{8}$
- $\frac{8}{6}$

WORK ON YOUR OWN

Compare Fractions Using Pictures

Using Symbols

Using Words

The picture of the fraction showing the greater shaded area is the greater fraction.

2. $\frac{5}{8} > \frac{3}{6}$

Use an inequality symbol to show how the amounts compare.

Compare Fractions with Common Denominators

Using Symbols

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

Using Words

If the two fractions being compared have the same denominator, the fraction with the greater numerator is the greater fraction.

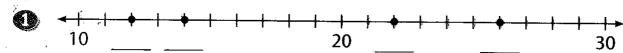
2. $\frac{4}{6} < \frac{5}{6}$

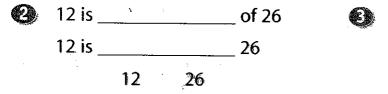
Use an inequality symbol to show how the amounts compare.

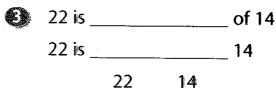
Fractions on the Number Line

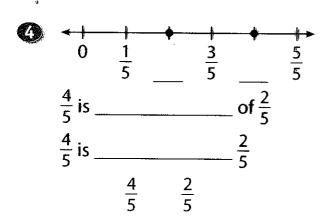
Name ______ Class _____ Date _____

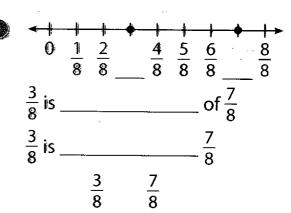






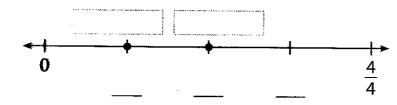






Peter walks $\frac{1}{4}$ mile to school. Jack walks $\frac{2}{4}$ mile to school. Who walks the greater distance to school?





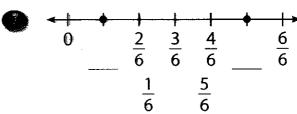
_____ walks the greater distance to school.

Label the fractions on the number line. Then use the number line to compare the fractions. Write >, <, or =.

3

 $\frac{2}{3}$ is _____ of $\frac{1}{3}$

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

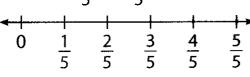


WORK ON YOUR OWN

Compare Fractions on a Number Line

Using Symbols

1. Compare $\frac{3}{5}$ and $\frac{1}{5}$.



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

3.
$$\frac{1}{5} < \frac{3}{5}$$
 $\frac{3}{5} > \frac{1}{5}$

Using Words

Create a number line from 0 to 1.

Locate the fractions on the number line.

The fraction on the left is less than the fraction on the right.

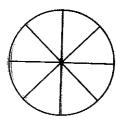
The fraction on the right is greater than the fraction on the left.

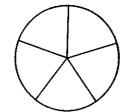
Ordering Fractions

- greatest

Order the fractions $\frac{4}{8}$, $\frac{4}{5}$, and $\frac{4}{12}$ from least to greatest.









Least to greatest: _____, ____,

Order each set of fractions from least to greatest.

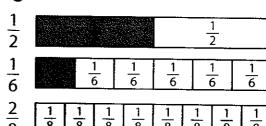
 $\frac{1}{2}$



$$\frac{1}{8}$$

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

6



Order each set of fractions from greatest to least.

$$\frac{3}{7}$$
, $\frac{2}{7}$, $\frac{6}{7}$

WORK ON YOUR OWN

Order Fractions Using Pictures Using Symbols Us









The fraction showing the greater shaded area is the greater fraction.

2. least to greatest: $\frac{1}{3}$, $\frac{3}{6}$, $\frac{3}{4}$

Order the fractions from least to greatest or from greatest to least.

Order Fractions with Same Denominators Using Symbols Using Words

1.
$$\frac{4}{8}$$
, $\frac{7}{8}$, $\frac{1}{8}$

The fraction with the greater numerator is the greater fraction.

2. greatest to least: $\frac{7}{8}$, $\frac{4}{8}$, $\frac{1}{8}$

Order the fractions from least to greatest or from greatest to least.

Adding Fractions with Like Denominators

GET STARTED

- $\frac{4}{6}$, $\frac{2}{6}$, $\frac{5}{6}$ _____,
- 2 1/9, 8/9 _____, _____



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

Shannon read $\frac{3}{8}$ of her book on Monday and $\frac{4}{8}$ of her book on Wednesday. How much of her book has Shannon read in all?



$$\frac{3}{8} + \frac{4}{8} = \boxed{ }$$

Shannon has read _____ of her book in all.

Find each sum.

$$\frac{3}{6} + \frac{1}{6} = \frac{1}{6}$$

$$\frac{2}{8} + \frac{5}{8} = --$$

WORK ON YOUR OWN

Add Fractions with Like Denominators

Using Symbols

Using Words

1.
$$\frac{3}{7} + \frac{2}{7} = \frac{5}{1}$$

Add the numerators of the fractions.

Keep the denominator the same.

Subtracting Fractions with Like Denominators

GET STARTED

$$\frac{1}{3} + \frac{1}{3} = -$$

$$\frac{3}{7} + \frac{2}{7} = --$$



$$\frac{3}{4} - \frac{1}{4} = \frac{1}{4}$$

4)
$$\frac{1}{6}$$
 $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$

$$\frac{5}{6} - \frac{3}{6} = --$$

$$\frac{4}{5} - \frac{1}{5} = \frac{1}{5}$$

Marcy bought $\frac{10}{16}$ pound of cheese. She used $\frac{3}{16}$ pound of the cheese in a recipe. How much cheese does she have left?



and the second s	and the second s
i I I I I I I I I I I I I I I I I I	

$$\frac{10}{16} - \frac{3}{16} =$$

Marcy has pound of cheese left.

Find each difference.

$$\frac{7}{8} - \frac{3}{8} = \frac{3}{8}$$

$$\frac{10}{12} - \frac{3}{12} = -$$

$$8 \frac{8}{10} - \frac{2}{10} = -$$

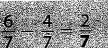
WORK ON YOUR OWN

Subtract Fractions with Like Denominators

Using Symbols

Using Words Subtract the numerators of the fractions.

1. $\frac{6}{7} - \frac{4}{7} = \frac{2}{1}$



Keep the denominator the same.

Problem-Solving: Using Patterns and Tables

Name______ Class _____ Date _____



46, 40, 34, 28, _____,

Pattern rule:

 $\frac{3}{6} + \frac{3}{6} = --- = \frac{1}{6}$

1							
$\frac{1}{6}$	<u>1</u>	1/6	1 6	16	1/6		

- $\frac{10}{12} \frac{4}{12} = -$
- Construction crews worked on a new building. By the end of the first month, $\frac{1}{6}$ of the building was complete. By the end of the second month, $\frac{2}{6}$ of the building was complete. By the end of the third month, $\frac{3}{6}$ of the building was complete. If this pattern continues, how many months will it take to complete the building?
 - a. Find: _____
 - b. How? _____
 - c. Solve.

Month	1	2	3	4	5	6
Building	1	2	3			
Completion	6	6	6			

Pattern rule: ______.

It will take _____ months to complete the building.

d. Is the answer reasonable? Explain.