

Name: Grade/Class Date

Division Class work Pack

Divide by 2

Essential Question What does dividing by 2 mean?

Common Core
Operations and Algebraic Thinking—
3.OA.A.3 Also 3.OA.A.2, 3.OA.C.7

MATHEMATICAL PRACTICES
MP1, MP2, MP6

Unlock the Problem Real World

There are 10 hummingbirds and 2 feeders in Marissa's backyard. If there are an equal number of birds at each feeder, how many birds are at each one?



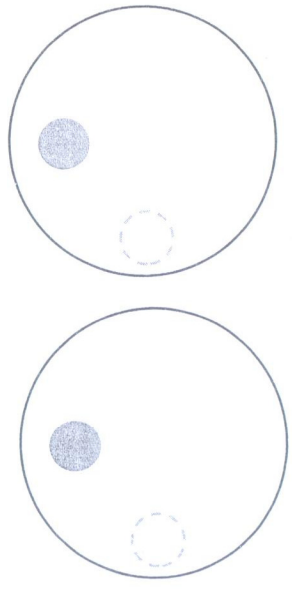
Activity 1

Use counters to find how many in each group.

Materials ■ counters ■ MathBoard

MODEL

- Use 10 counters.
- Draw 2 circles on your MathBoard.
- Place 1 counter at a time in each circle until all 10 counters are used.
- Draw the rest of the counters to show your work.



There are _____ counters in each of the 2 groups.

So, there are _____ hummingbirds at each feeder.

A hummingbird can fly right, left, up, down, forward, backward, and even upside down!



MATHEMATICAL PRACTICES 1

Analyze What does each number in $10 \div 2 = 5$ represent from the word problem?

• What do you need to find?

• Circle the numbers you need to use.

• What can you use to help solve the problem? _____

THINK

_____ in all

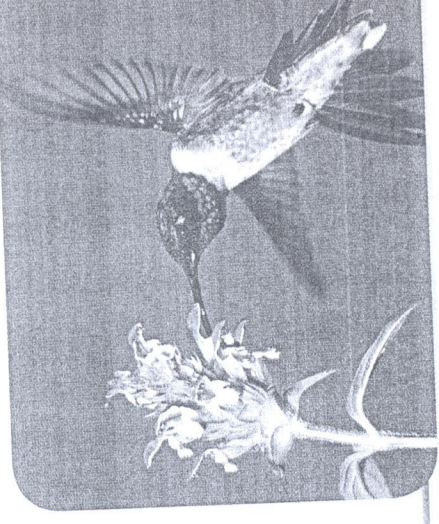
_____ equal groups

_____ in each group

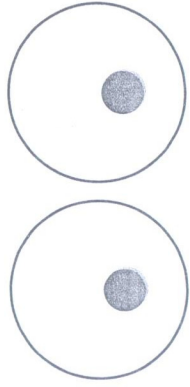
RECORD

$$10 \div 2 = 5 \text{ or } 2 \overline{)10}$$

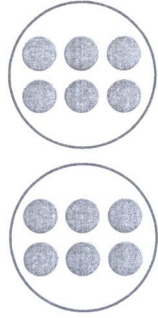
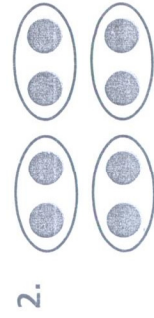
Read: Ten divided by two equals five.



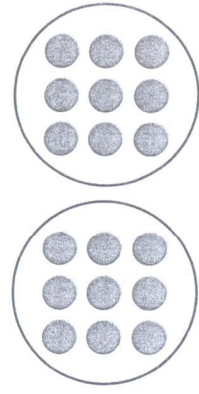
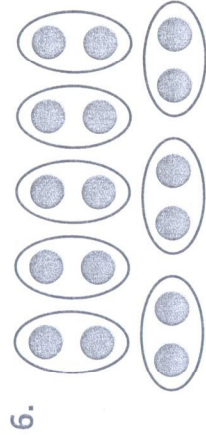
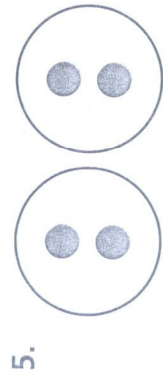
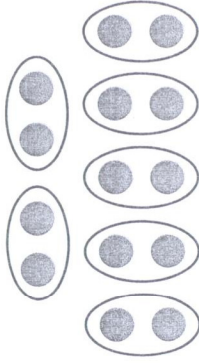
1. Complete the picture to find $6 \div 2$. _____



Write a division equation for the picture.



4.



Find the quotient. You may want to draw a quick picture to help.

8. $2 \div 2 =$ _____

9. $16 \div 2 =$ _____

10. $2 \overline{)20}$

MATHEMATICAL PRACTICE 2

Reason Abstractly **Algebra** Find the unknown number.

11. _____ $\div 2 = 5$

12. _____ $\div 2 = 2$

13. _____ $\div 2 = 3$

14. _____ $\div 2 = 8$

Divide by 10

Essential Question What strategies can you use to divide by 10?

Common Core
Operations and Algebraic Thinking—3.OA.C.7 Also 3.OA.A.2, 3.OA.A.3, 3.OA.A.4, 3.OA.B.6

MATHEMATICAL PRACTICES
 MP2, MP3, MP6

Unlock the Problem *Real World*

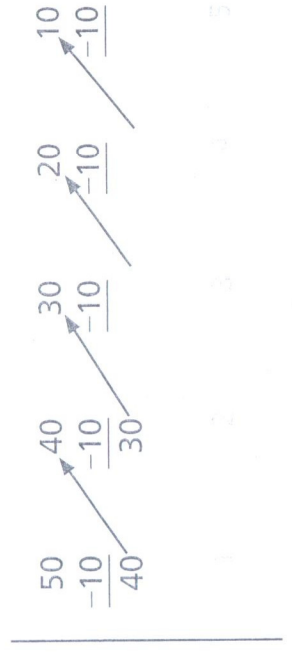
There are 50 students going on a field trip to the Philadelphia Zoo. The students are separated into equal groups of 10 students each. How many groups of students are there?

• What do you need to find?

• Circle the numbers you need to use.

One Way Use repeated subtraction.

- Start with 50.
- Subtract 10 until you reach 0.
- Count the number of times you subtract 10.



You subtracted 10 five times. $50 \div 10 =$ _____

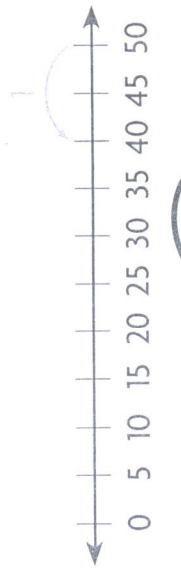
So, there are _____ groups of 10 students.

Other Ways

- A** Use a number line.
- Start at 50 and count back by 10s until you reach 0.
- Count the number of times you jumped back 10.

You jumped back by 10 five times.

$50 \div 10 =$ _____



Math Talk

MATHEMATICAL PRACTICES 3

Compare Representations How is counting on a number line to divide by 10 different from counting on a number line to multiply by 10?



1. Use repeated subtraction to find $30 \div 10$. _____

Think: How many times do you subtract 10?

$$\begin{array}{r} 30 \\ -10 \\ \hline 20 \end{array} \quad \begin{array}{r} 20 \\ -10 \\ \hline 10 \end{array}$$

Find the unknown factor and quotient.

2. $10 \times \underline{\quad} = 40$ $\underline{\quad} = 40 \div 10$ 3. $10 \times \underline{\quad} = 60$ $60 \div 10 = \underline{\quad}$

Find the quotient.

4. $\underline{\quad} = 20 \div 10$ 5. $10 \overline{)50}$ 6. $10 \overline{)70}$ 7. $90 \div 10 = \underline{\quad}$

Find the unknown factor and quotient.

8. $10 \times \underline{\quad} = 70$ $70 \div 10 = \underline{\quad}$ 9. $10 \times \underline{\quad} = 10$ $10 \div 10 = \underline{\quad}$

Find the quotient.

10. $50 \div 10 = \underline{\quad}$ 11. $\underline{\quad} = 60 \div 10$ 12. $10 \overline{)40}$ 13. $10 \overline{)80}$

MATHEMATICAL PRACTICE 2

Reason Quantitatively **Algebra** Write $<$, $>$, or $=$.

14. $10 \div 1 \bigcirc 4 \times 10$ 15. $17 - 6 \bigcirc 18 \div 2$ 16. $4 \times 4 \bigcirc 8 + 8$

17. $23 + 14 \bigcirc 5 \times 8$ 18. $70 \div 10 \bigcirc 23 - 16$ 19. $9 \times 0 \bigcirc 9 + 0$

20. **GO DEEPER** There are 70 pieces of chalk in a box. If each of 10 students gets an equal number of chalk pieces, how many pieces of chalk does each student get?

THINK SMARTER Lilly found 40 seashells. She put 10 seashells in each bucket. How many buckets did Lilly use? Show your work.

_____ buckets

Divide by 5

Essential Question What does dividing by 5 mean?

Common Core Operations and Algebraic Thinking—
3.OA.A.3 Also 3.OA.A.2, 3.OA.C.7

MATHEMATICAL PRACTICES
MP1, MP2, MP6, MP7

Unlock the Problem Real World

Kaley wants to buy a new cage for Coconut, her guinea pig. She has saved 35¢. If she saved a nickel each day, for how many days has she been saving?

- How much is a nickel worth?

One Way Count up by 5s.

- Begin at 0.
- Count up by 5s until you reach 35. 0, 5, 10, _____, _____, _____
- Count the number of times you count up. 1 2 3 4 5 6 7

You counted up by 5 seven times. $35 \div 5 = \underline{\quad}$

So, Kaley has been saving for _____ days.



Another Way

Count back on a number line.

- Start at 35.
- Count back by 5s until you reach 0. Complete the jumps on the number line.
- Count the number of times you jumped back 5.



You jumped back by 5 _____ times.

$35 \div 5 = \underline{\quad}$

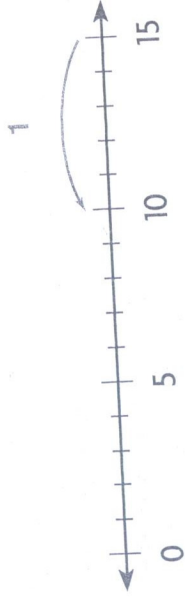


Math Talk

MATHEMATICAL PRACTICES 2

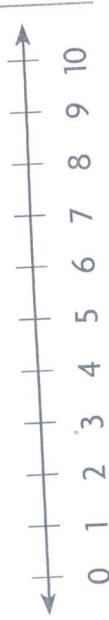
Reason Abstractly What if Kaley saved 7¢ each day instead of a nickel? What would you do differently to find how many days she has saved?

1. Count back on the number line to find $15 \div 5$.



Use count up or count back on a number line to solve.

2. $10 \div 2 =$ _____



3. $20 \div 5 =$ _____



Find the quotient.

4. $50 \div 5 =$ _____

5. $5 \div 5 =$ _____

6. $45 \div 5 =$ _____

Find the quotient.

_____ $= 20 \div 5$

_____ $= 18 \div 2$

_____ $= 0 \div 5$

_____ $= 10 \div 5$

_____ $= 40 \div 10$

_____ $= 4 \div 2$

$10 \overline{)30}$

$2 \overline{)16}$

$5 \overline{)45}$

$5 \overline{)15}$

Problem Solving • Applications

MATHEMATICAL PRACTICE 1

Evaluate Guinea pigs eat hay, pellets, and vegetables. If Wonder Hay comes in a 5-pound bag and costs \$15, how much does 1 pound of hay cost?

GO DEEPER

Ana picks 25 apples. Pedro picks 20 apples. Ana and Pedro use the apples to make apple pies. They put 5 apples in each pie. How many apple pies can they make?

Math Talk

MATHEMATICAL PRACTICES 6

Explain how counting up to solve a division problem is like counting back on a number line.

Divide by 3

Essential Question What strategies can you use to divide by 3?

Common
Core

Operations and Algebraic
Thinking—3.OA.C.7 Also 3.OA.A.2,
3.OA.A.3, 3.OA.A.4, 3.OA.B.6

MATHEMATICAL PRACTICES

MP1, MP2, MP4



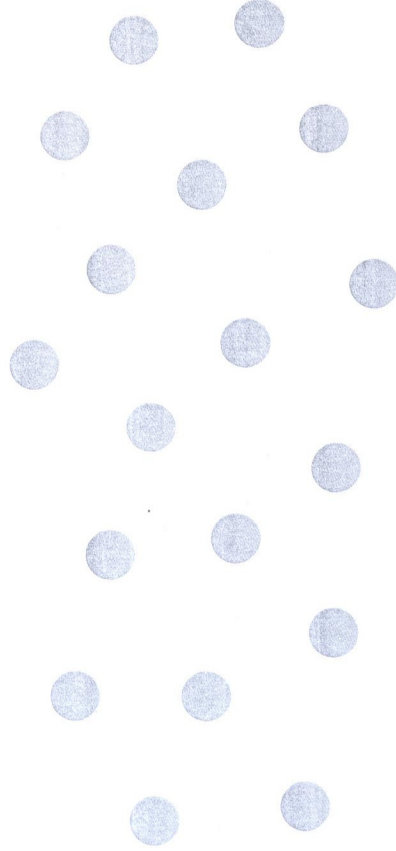
Unlock the Problem

Real
World

For field day, 18 students have signed up for the relay race. Each relay team needs 3 students. How many teams can be made?

One Way Make equal groups.

- Look at the 18 counters below.
- Circle as many groups of 3 as you can.
- Count the number of groups.



Math
Talk

MATHEMATICAL PRACTICES 1

Make Sense of

Problems Suppose the question asked how many students would be on 3 equal teams. How would you model 3 equal teams? Would the quotient be the same?

There are _____ groups of 3.

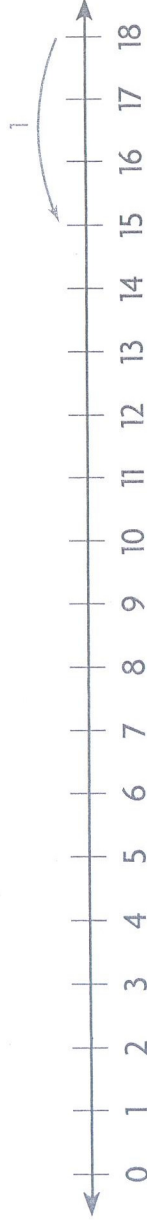
So, _____ teams can be made.

You can write $18 \div 3 =$ _____ or $3 \overline{)18}$.

Other Ways

A Count back on a number line.

- Start at 18.
- Count back by 3s as many times as you can. Complete the jumps on the number line.
- Count the number of times you jumped back 3.



You jumped back by 3 _____ times.

1. Circle groups of 3 to find $12 \div 3$. _____



Find the quotient.

2. $6 \div 3 = \underline{\quad}$ 3. $\underline{\quad} = 14 \div 2$ 4. $21 \div 3 = \underline{\quad}$ 5. $\underline{\quad} = 30 \div 5$

Practice: Copy and Solve Find the quotient. Draw a quick picture to help.

6. $9 \div 3$

7. $10 \div 5$

8. $18 \div 2$

9. $24 \div 3$

Find the quotient.

10. $\underline{\quad} = 12 \div 2$

11. $40 \div 5 = \underline{\quad}$

13. $\underline{\quad} = 20 \div 10$

14. $3 \overline{)15}$

15. $2 \overline{)4}$

16. $5 \overline{)20}$

17. $3 \overline{)18}$

Jem pastes 21 photos and 15 postcards in a scrap album. She puts 3 items on each page. How many pages does Jem fill in the scrap album?

CODE BREAKER

Sue plants 18 pink flowers and 9 yellow flowers in flowerpots. She plants 3 flowers in each flowerpot. How many flowerpots does Sue use?

Name _____

Divide by 4

Common Core Operations and Algebraic Thinking — 3.OA.C.7 Also 3.OA.A.2, 3.OA.A.3, 3.OA.A.4, 3.OA.B.6

MATHEMATICAL PRACTICES MP2, MP4, MP6

Essential Question What strategies can you use to divide by 4?

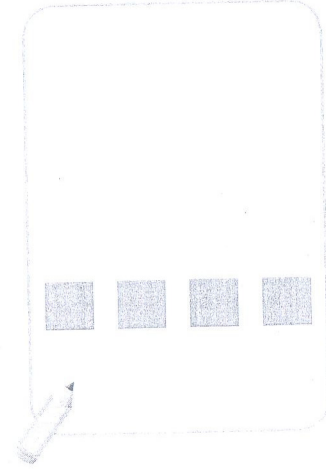
Unlock the Problem **Red World**

A tree farmer plants 12 red maple trees in 4 equal rows. How many trees are in each row?

What strategy could you use to solve the problem?

One Way Make an array.

- Look at the array.
- Continue the array by drawing 1 tile in each of the 4 rows until all 12 tiles are drawn.
- Count the number of tiles in each row.



There are _____ tiles in each row.

So, there are _____ trees in each row.

Write: _____ ÷ _____ = _____ or $4 \overline{)12}$

Read: Twelve divided by four equals three.

Other Ways

- A** Make equal groups.
 - Draw 1 counter in each group.
 - Continue drawing 1 counter at a time until all 12 counters are drawn.

There are _____ counters in each group.



Math Talk

MATHEMATICAL PRACTICES **C**

Compare How is making an array to solve the problem like making equal groups?

Share and Show



Use a related multiplication fact.

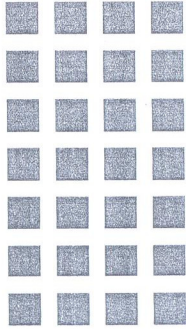
$$12 \div 4 = n$$

Think: What number completes the multiplication fact?

$$4 \times n = 12$$

$$4 \times 3 = 12$$

1. Use the array to find $28 \div 4$.



Find the quotient.

2. $\underline{\quad} = 21 \div 3$

3. $8 \div 4 = \underline{\quad}$

4. $\underline{\quad} = 40 \div 5$

5. $24 \div 4 = \underline{\quad}$

Find the unknown number.

6. $20 \div 4 = a$

7. $12 \div 2 = p$

8. $27 \div 3 = \blacktriangle$

$a = \underline{\quad}$ $p = \underline{\quad}$

$\blacktriangle = \underline{\quad}$

$t = \underline{\quad}$

Practice: Copy and Solve Draw tiles to make an array.
Find the quotient.

10. $30 \div 10$

11. $15 \div 5$

12. $40 \div 4$

13. $16 \div 2$

Find the quotient.

14. $12 \div 3 = \underline{\quad}$

15. $20 \div 4 = \underline{\quad}$

16. $4 \overline{)16}$

17. $5 \overline{)25}$

Algebra Complete the table.

\div	9	12	15	18
3				

\div	20	24	28	32
4				

Mr. Benz arranges 24 music stands in class. He puts the stands in 4 equal rows. How many music stands are in each row?

1. Continue making equal groups to find $18 \div 6$. _____



Find the unknown factor and quotient.

2. $\square \times 6 = 36$ $36 \div 6 = \square$

3. $6 \times \square = 12$

$12 \div 6 = \square$

Find the quotient.

4. $\square = 0 \div 2$

5. $6 \div 6 = \square$

6. $\square = 28 \div 4$

7. $42 \div 6 = \square$

$12 \div 6 = \square$ $\square = 6 \div 1$

$2 \overline{)10}$

Find the unknown number.

$24 \div 6 = n$

$40 \div 5 = \triangle$

$60 \div 10 = m$

$18 \div 6 = \square$

$n = \square$ $\triangle = \square$ $m = \square$ $\square = \square$

Mr. Brooks has 36 students in his gym class. He makes 6 teams. If each team has the same number of students, how many students are on each team?



Sandy bakes 18 pies. She keeps 2 of the pies. She sells the rest of the pies to 4 people at a bake sale. If each person buys the same number of pies, how many pies does Sandy sell to each person?

Divide by 7

Essential Question What strategies can you use to divide by 7?

Operations and Algebraic Thinking—
3.OA.C.7 Also 3.OA.A.2, 3.OA.A.3,
3.OA.A.4, 3.OA.B.6

Common Core

MATHEMATICAL PRACTICES
MP1, MP6, MP8

Unlock the Problem

Yasmin used 28 large apples to make 7 loaves of apple bread. She used the same number of apples for each loaf. How many apples did Yasmin use for each loaf?

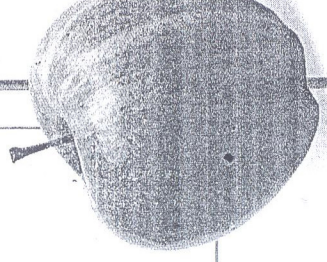
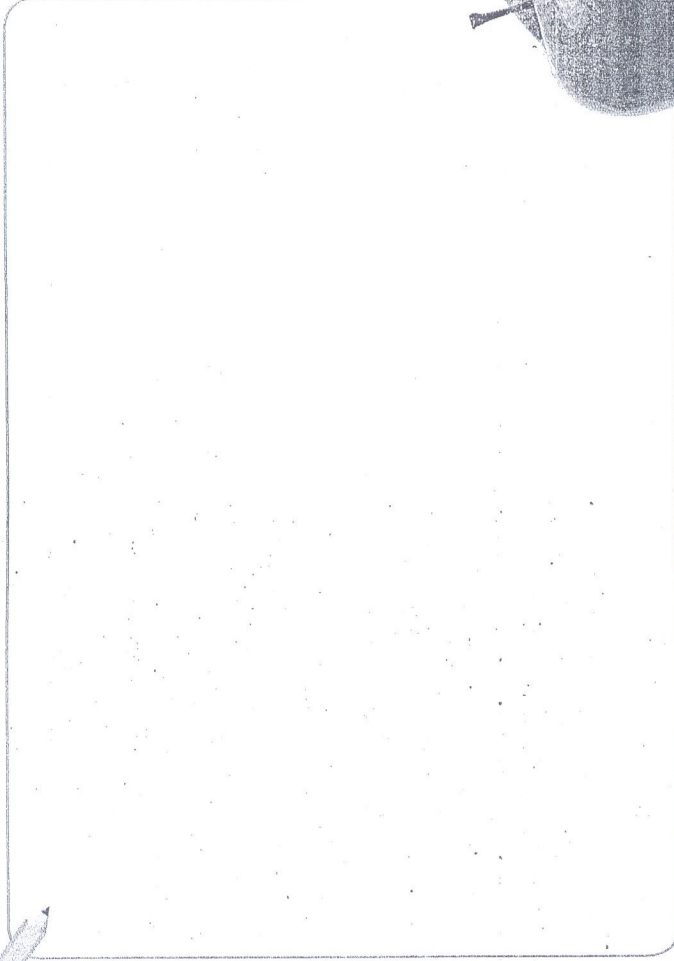


Do you need to find the number of equal groups or the number in each group?

What label will your answer have?

One Way Make an array.

- Draw 1 tile in each of 7 rows.
- Continue drawing 1 tile in each of the 7 rows until all 28 tiles are drawn.
- Count the number of tiles in each row.



There are _____ tiles in each row.

So, Yasmin used _____ for each loaf.

You can write $28 \div 7 =$ _____ or $7 \overline{)28}$.



MATHEMATICAL PRACTICES 1

Make Sense of Problems Why can you use division to solve the problem?

Use the related multiplication fact to find $42 \div 7$.

$$6 \times 7 = 42$$

$$42 \div 7 = \underline{\quad}$$



Generalize Why can you use a related multiplication fact to solve a division problem?

Find the unknown factor and quotient.

2. $7 \times \underline{\quad} = 7$ $7 \div 7 = \underline{\quad}$

3. $7 \times \underline{\quad} = 35$

$35 \div 7 = \underline{\quad}$

Find the quotient.

4. $4 \div 2 = \underline{\quad}$ 5. $56 \div 7 = \underline{\quad}$

6. $\underline{\quad} = 20 \div 5$

7. $\underline{\quad} = 21 \div 7$

$48 \div 6 = \underline{\quad}$ $7 \div 1 = \underline{\quad}$

$7 \overline{)21}$

$2 \overline{)8}$

Find the unknown number.

$60 \div 10 = \square$ $70 \div 7 = k$

$m = 63 \div 9$

$r = 12 \div 6$

$\square = \underline{\quad}$ $k = \underline{\quad}$

$m = \underline{\quad}$

$r = \underline{\quad}$

Elliot earned \$49 last month walking his neighbor's dog. He earns \$7 each time he walks the dog. How many times did Elliot walk his neighbor's dog last month?

What is the unknown factor and quotient?

$7 \times \square = 63$

$63 \div 7 = \square$

Clare bought 35 peaches to make peach jam. She uses 7 peaches for each jar of jam. How many jars can Clare make?

There are 49 jars of peach salsa packed into 7 gift boxes. If each box has the same number of jars of salsa, how many jars are in each box?

\div	56	42	49	35
7				

What division equation is related to the following multiplication equation?

$3 \times 4 = 12$

Divide by 8

Essential Question What strategies can you use to divide by 8?

Common Core

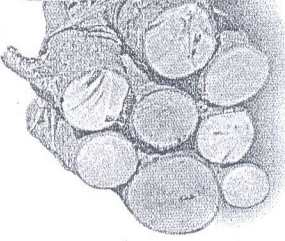
Operations and Algebraic Thinking—
3.OA.A.3, 3.OA.A.4

MATHEMATICAL PRACTICES

MP1, MP2, MP4, MP5, MP6

Unlock the Problem *Real World*

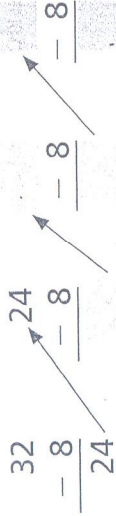
At Stephen's camping store, firewood is sold in bundles of 8 logs. He has 32 logs to put in bundles. How many bundles of firewood can he make?



• What will Stephen do with the 32 logs?

One Way Use repeated subtraction.

- Start with 32.
- Subtract 8 until you reach 0.
- Count the number of times you subtract 8.



Number of times you subtract 8: 1 2 3 4

You subtracted 8 _____ times.

So, Stephen can make _____ bundles of firewood.

You can write $32 \div 8 = \underline{\quad}$ or $8 \overline{)32}$.

Another Way Use a related multiplication fact.

$32 \div 8 = \square \quad \square \times 8 = 32$

$4 \times 8 = 32$

Think: What number _____ or $8 \overline{)32}$ completes the multiplication fact?



MATHEMATICAL PRACTICES 1

Make Sense of Problems How does knowing $4 \times 8 = 32$ help you find $32 \div 8$?

Use repeated subtraction to find $24 \div 8$. _____

$$\begin{array}{r} 24 \\ - 8 \\ \hline 16 \end{array}$$

8

$$\begin{array}{r} 16 \\ - 8 \\ \hline 8 \end{array}$$

8

$$\begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$$

Think: How many times do you subtract 8?

Find the unknown factor and quotient.

1. $8 \times \underline{\quad} = 56$ $56 \div 8 = \underline{\quad}$

2. $\underline{\quad} \times 8 = 40$ $40 \div 8 = \underline{\quad}$

Find the quotient.

3. $18 \div 3 = \underline{\quad}$ 4. $\underline{\quad} = 48 \div 8$

5. $56 \div 7 = \underline{\quad}$ 6. $7 \times \underline{\quad} = 32 \div 8$

7. $28 \div 4 = \underline{\quad}$

8. $42 \div 7 = \underline{\quad}$

9. $\square \overline{)64}$

10. $1 \overline{)8}$

Find the unknown number.

11. $16 \div p = 8$

12. $t \div 8 = 2$

13. $64 \div \triangle = 8$

14. $m \div 8 = 10$

15. $p = \underline{\quad}$

16. $t = \underline{\quad}$

17. $\triangle = \underline{\quad}$

18. $m = \underline{\quad}$

19. Mrs. Wilke spends \$72 on pies for the school fair. Each pie costs \$8. How many pies does Mrs. Wilke buy for the school fair?

Find the unknown factor and quotient.

$8 \times \square = 40$

$40 \div 8 = \square$

20. Josh is dividing 64 bags of trail mix equally among 8 campers. How many bags of trail mix will each camper get?

Divide by 9

Operations and Algebraic Thinking—
3.OA.C.7 Also 3.OA.A.2, 3.OA.A.3,
 3.OA.A.4, 3.OA.B.6

Common
 Core

MATHEMATICAL PRACTICES

MP2, MP3, MP4

Unlock the Problem
 Real World

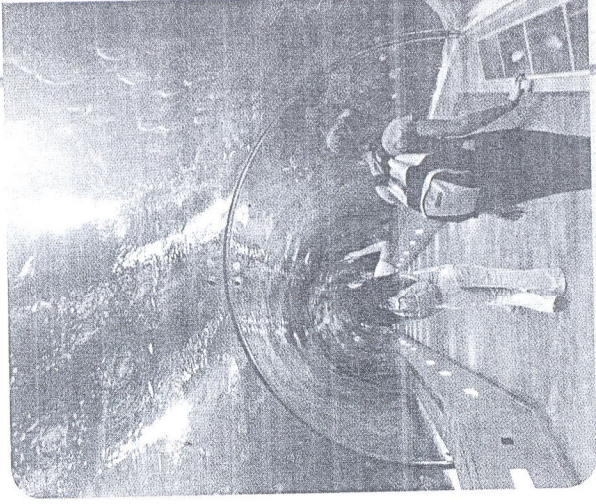


Becket's class goes to the aquarium. The 27 students from the class are separated into 9 equal groups. How many students are in each group?

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

One Way Make equal groups.

- Draw 9 circles to show 9 groups.
- Draw 1 counter in each group.
- Continue drawing 1 counter at a time until all 27 counters are drawn.



There are _____ counters in each group.

So, there are _____ in each group.

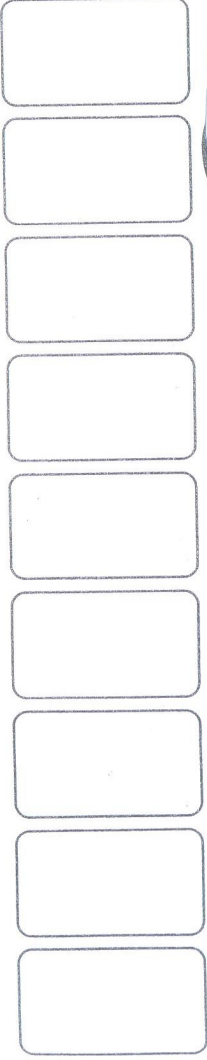
You can write $27 \div 9 =$ _____ or $9 \overline{)27}$.



MATHEMATICAL PRACTICES 2

Reason Quantitatively
 What is another way you could solve the problem?

Draw counters in the groups to find $18 \div 9$.



Find the quotient.

2. $\underline{\quad} = 45 \div 9$

3. $36 \div 6 = \underline{\quad}$

4. $9 \div 1 = \underline{\quad}$

5. $\underline{\quad} = 54 \div 9$

6. $7 \overline{)28}$

7. $9 \overline{)9}$

8. $5 \overline{)40}$

9. $9 \overline{)36}$

10. $\underline{\quad} = 36 \div 4$

11. $\underline{\quad} = 72 \div 9$

12. $81 \div 9 = \underline{\quad}$

13. $\underline{\quad} = 27 \div 9$

14. $4 \overline{)12}$

15. $9 \overline{)63}$

16. $2 \overline{)16}$

17. $5 \overline{)25}$

Find the unknown number.

18. $64 \div 8 = e$

19. $0 \div 9 = g$

20. $\blacksquare = 20 \div 4$

21. $s = 9 \div 9$

$e = \underline{\quad}$

$g = \underline{\quad}$

$\blacksquare = \underline{\quad}$

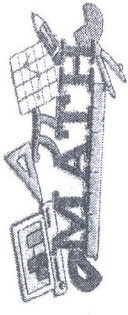
$s = \underline{\quad}$

MATHEMATICAL PRACTICE 4

Write an Equation Each van going to the aquarium carries 9 students. If 63 third-grade students go to the aquarium, what multiplication fact can you use to find the number of vans that will be needed?

Baseball games have 9 innings. The Little Tigers played 72 innings last season. How many games did the Little Tigers play last year?

\div	54	45	72	63
9				



Name: _____

Class: 3

Van has 45 new baseball cards. He puts them in a binder that holds 9 cards on each page. How many pages does he fill?

A crate of oranges has trays inside that hold 9 oranges each. There are 72 oranges in the crate. If all trays are filled, how many trays are there?

Three friends share some grapes equally. If each gets 9 grapes, How many grapes are there altogether?

Sherif has 28 game pieces for a game. Each player gets 4 pieces. How many people can play?

Billy buys 22 baseball cards. He keeps 10 cards and divide the rest equally among 2 friends. How many cards will each friend get?

Castello has 24 toy cars. He puts an equal number of cars into each of 3 boxes. How many cars will be in 2 of the boxes?

The art teacher has 48 paintbrushes. She puts 8 paintbrushes on each table in her classroom. How many tables are in her classroom?

Salma has \$ 20 to spend on gifts for her friends. Her mother gives her \$ 5 more. If each gift costs \$5, How many gifts can she buy?
