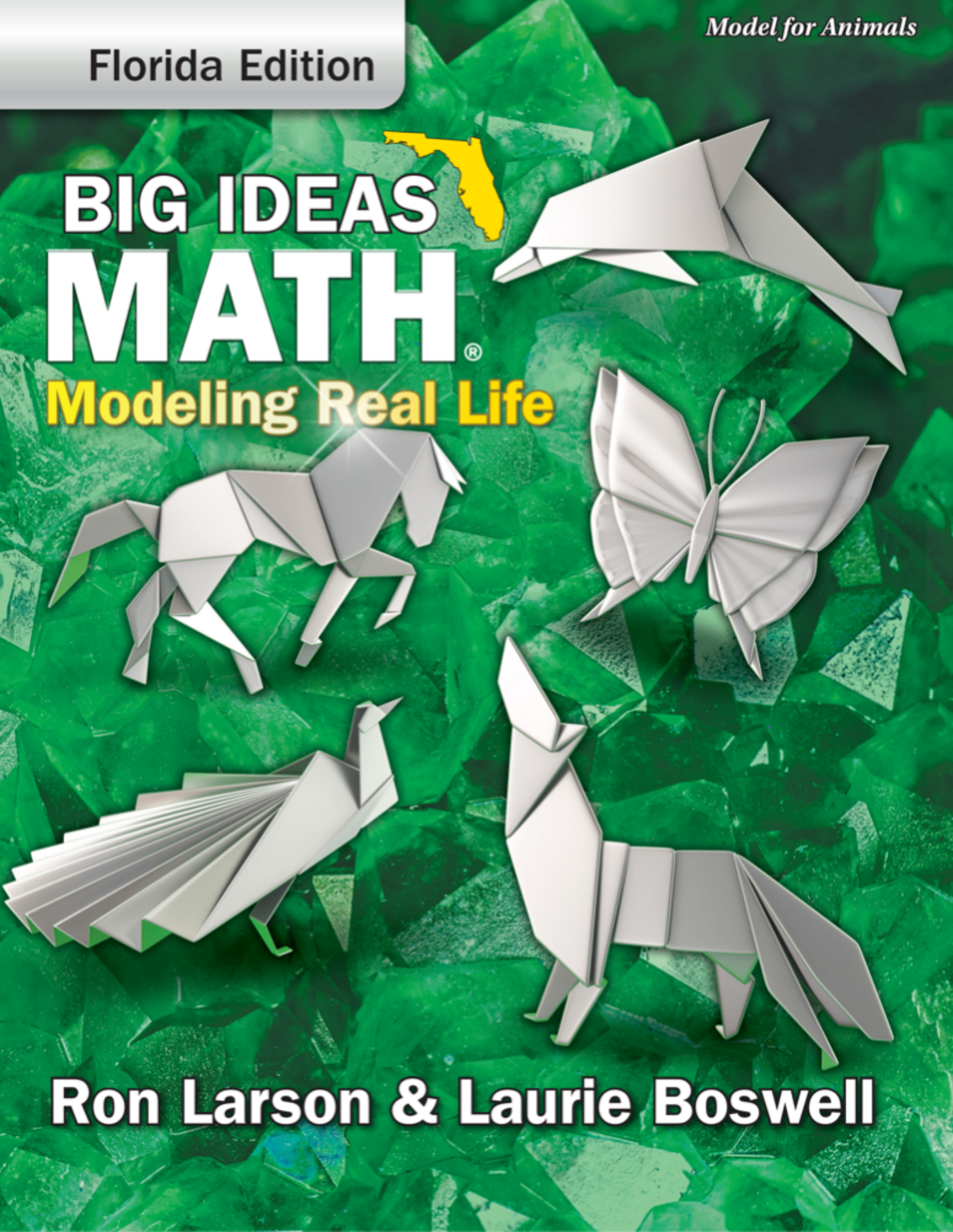
Florida Edition

Model for Animals

BIG IDEAS MATH®

Modeling Real Life



Ron Larson & Laurie Boswell

1 Understand Multiplication and Division

- What are some different types of mammals?
- A goat eats about 3 pounds of food each day. How can you use multiplication to find the amount the goat eats each week?

Chapter Learning Target:
Understand multiplication and division.

Chapter Success Criteria:
- I can identify equal groups.
- I can explain a multiplication equation.
- I can compare multiplication to division.
- I can model multiplication and division problems.

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Name _____

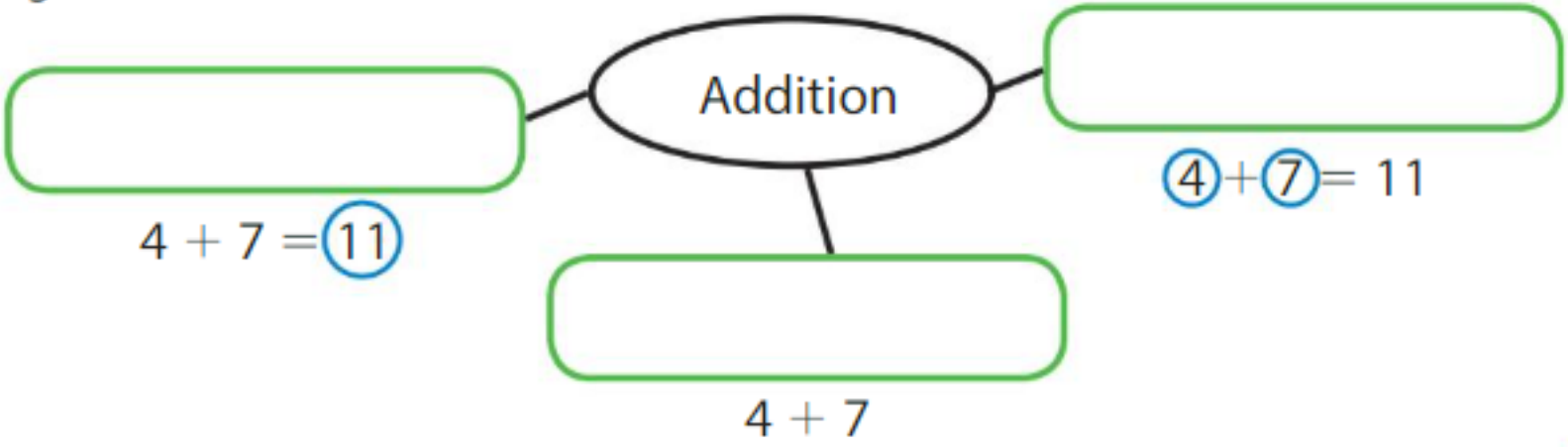
1 Vocabulary

Review Words

addends
expression
sum

Organize It

Use the review words to complete the graphic organizer.



Define It

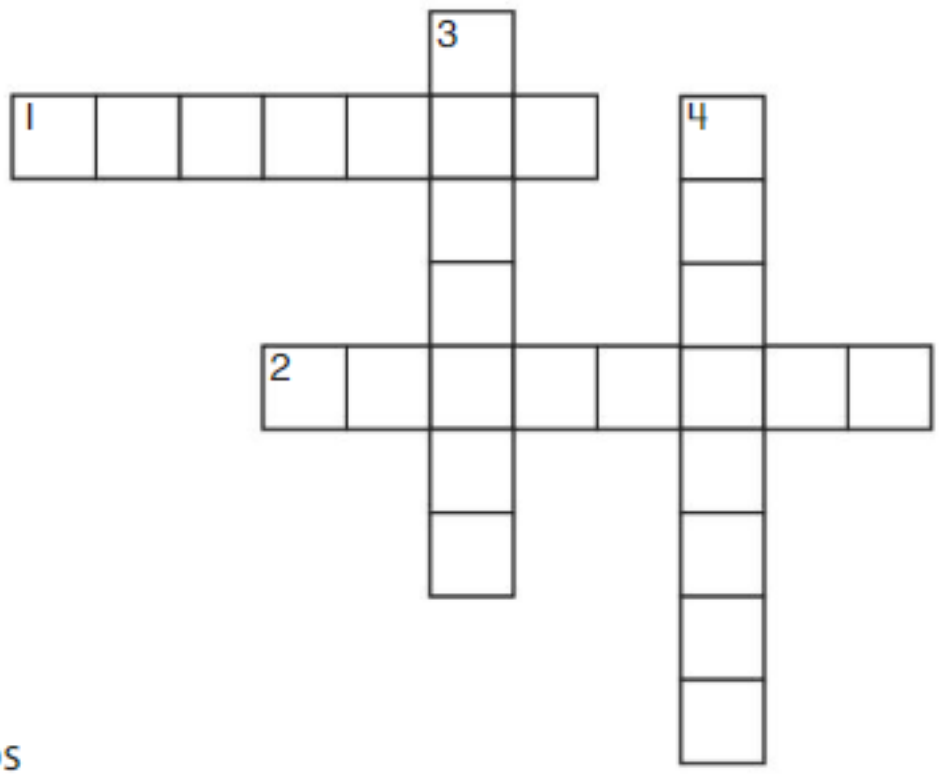
Use your vocabulary cards to complete the puzzle.

Across

1. Numbers that are multiplied to get a product
2. A mathematical sentence that uses an equal sign, =, to show that two expressions are equal

Down

3. The answer to a multiplication problem
4. An operation that separates a group of objects into groups of equal size



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English Spanish

Chapter 1 Vocabulary Cards

array

column

Commutative Property of Multiplication

division

division symbol

equal groups

equation

factors

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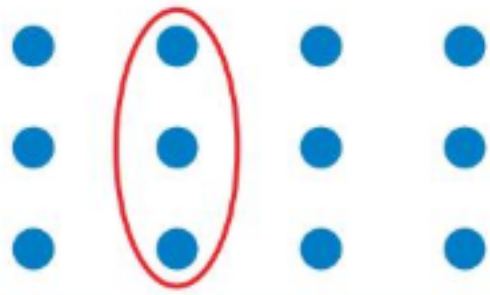
A vertical (up and down) arrangement of objects in an array



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A group of objects arranged into rows and columns

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An operation that separates a group of objects into groups of equal size

$12 \div 3 = 4$

$12 \div 4 = 3$

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Changing the order of factors does not change the product.

$4 \times 3 = 12$ $3 \times 4 = 12$

So, $4 \times 3 = 3 \times 4$.

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Groups that have the same number of objects

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$12 \div 3 = 4$

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Numbers that are multiplied to get a product

$3 \times 4 = 12$

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A mathematical sentence that uses an equal sign, =, to show that two expressions are equal.

$4 \times 3 = 12$

$12 \div 4 = 3$

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multiplication

multiplication symbol

product

row

tape diagram

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English Spanish

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$3 \times 4 = 12$

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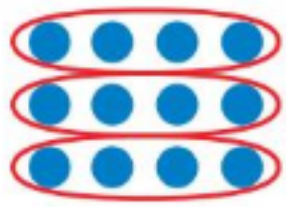
An operation that gives the total number of objects when you combine equal groups



$3 \times 4 = 12$

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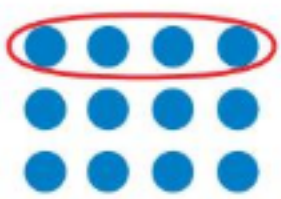
A horizontal (left to right) arrangement of objects in an array



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The answer to a multiplication problem

$3 \times 4 = 12$

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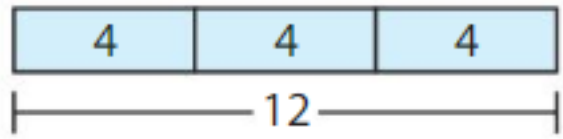
A model that shows a whole divided into parts



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English Spanish

Name _____

Use Equal Groups to Multiply

1.1

Learning Target: Use equal groups to multiply.

Success Criteria:

- I can identify equal groups.
- I can write a repeated addition equation for equal groups.
- I can write a multiplication equation for equal groups.

FLORIDA STANDARDS
MAFS.3.OA.1.1

Explore and Grow

Put 24 counters into equal groups. Draw to show your groups.

Put 24 counters into a different number of equal groups.
Draw to show your groups.

MP **Structure** Compare your models. How are the models the same? How are they different?

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English Spanish

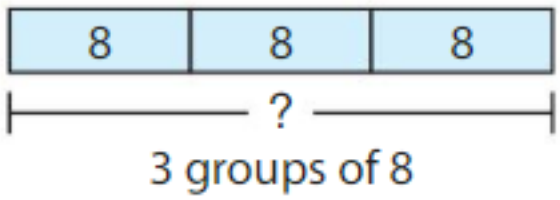
Think and Grow: Using Equal Groups to Multiply

Multiplication is an operation that gives the total number of objects when you combine equal groups.

Example How many counters are there in all?

Each group has the same number of counters, so they are **equal groups**.

tape diagram



3 groups of 8

Repeated addition equation: $8 + 8 + 8 =$ _____

multiplication symbol

Multiplication equation: $3 \times 8 =$ _____

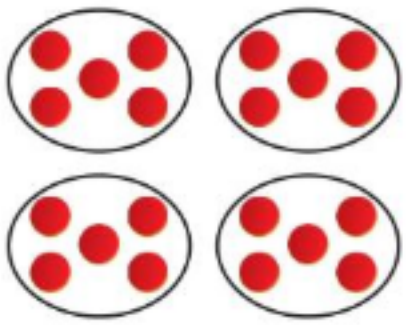
number of equal groups — size of equal groups — total

An **equation** is a mathematical sentence that uses an equal sign, =, to show that two expressions are equal.

Show and Grow

Use the model to complete the statements.

1.

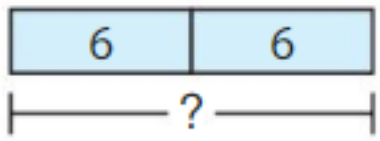


_____ groups of _____

_____ + _____ + _____ + _____ = _____

_____ × _____ = _____

2.



_____ groups of _____

_____ + _____ = _____

_____ × _____ = _____

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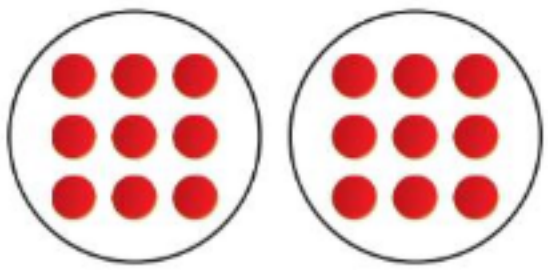
English Spanish

Name _____

Apply and Grow: Practice

3. Use the model to complete the statements.



_____ groups of _____

_____ + _____ = _____

_____ × _____ = _____

Draw equal groups. Then complete the equations.

4. 4 groups of 2

_____ + _____ + _____ + _____ = _____

_____ × _____ = _____

5. 3 groups of 5

_____ + _____ + _____ = _____

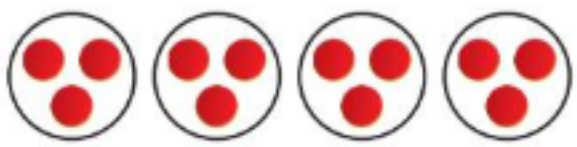
_____ × _____ = _____

Write the addition equation as a multiplication equation.

6. $8 + 8 + 8 = 24$

7. $7 + 7 + 7 + 7 + 7 = 35$

8. **YOU BE THE TEACHER** Newton says he circled 3 groups of 4 counters. Is he correct? Explain.



9. **DIG DEEPER!** You wash 5 cars. How many tires do you wash?

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English Spanish

Think and Grow: Modeling Real Life

You buy 6 packs of 10 trading cards. How many cards do you buy in all?

Complete the statement: _____ groups of _____

Repeated addition equation:

Multiplication equation:

You buy _____ cards in all.

Show and Grow

10. You buy 8 packs of 4 highlighters. How many highlighters do you buy in all?

11. **DIG DEEPER!** You make 5 bracelets. Each of your bracelets has 3 beads. Your friend makes 6 bracelets. Each of your friend's bracelets has 2 beads. How many beads do you and your friend use in all?

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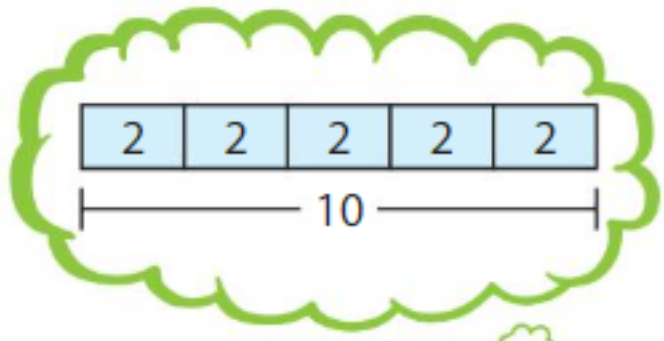
English Spanish

Name _____

Homework & Practice 1.1

Learning Target: Use equal groups to multiply.

Example Use the model to complete the statements.

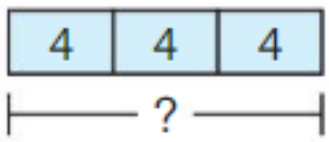


5 groups of 2

2 + 2 + 2 + 2 + 2 = 10

5 × 2 = 10

1. Use the model to complete the statements.



_____ groups of _____

_____ + _____ + _____ = _____

_____ × _____ = _____

Draw equal groups. Then complete the equations.

2. 2 groups of 8

_____ + _____ = _____

_____ × _____ = _____

3. 5 groups of 3

_____ + _____ + _____ + _____ + _____ = _____

_____ × _____ = _____

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English Spanish

Write the addition equation as a multiplication equation.

4. $3 + 3 + 3 + 3 + 3 + 3 = 18$

5. $2 + 2 + 2 + 2 + 2 + 2 + 2 = 14$

6. **DIG DEEPER!** You have 16 action figures. Can you put an equal number of figures on 3 shelves? Explain.

7. **Which One Doesn't Belong?** Which one does *not* belong with the other two?

2 groups of 3

$2 + 2 + 2 = 6$

8. **Modeling Real Life** You make 7 gift bags for your friends. Each gift bag has 3 pom-pom pets. How many pom-pom pets are there in all?

9. **DIG DEEPER!** Newton has 2 stacks of 5 books. Descartes has 3 stacks of 4 books. How many books do they have in all?

Review & Refresh

10. $50 + 30 =$ _____

11. $27 + 40 =$ _____

12. $19 + 20 =$ _____

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English Spanish

Name _____

Use Number Lines to Multiply

1.2

Learning Target: Use a number line to multiply.

Success Criteria:

- I can explain the parts of a multiplication equation.
- I can use a number line to skip count.

FLORIDA STANDARDS

MAFS.3.OA.1.1
MAFS.3.OA.1.3

Explore and Grow

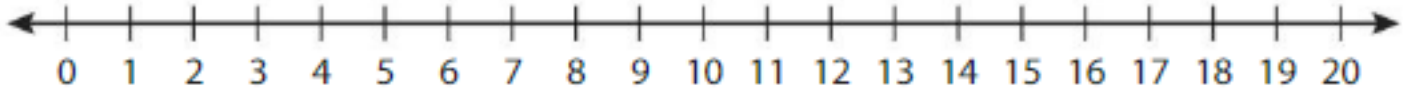
Find the sums. Use each sum as the missing addend in the next equation. Model the problems on the number line.

$0 + 3 =$ _____

_____ $+ 3 =$ _____

_____ $+ 3 =$ _____

_____ $+ 3 =$ _____



MP **Reasoning** How can you use a number line to help you find 4×3?

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Think and Grow: Multiplication and Number Lines

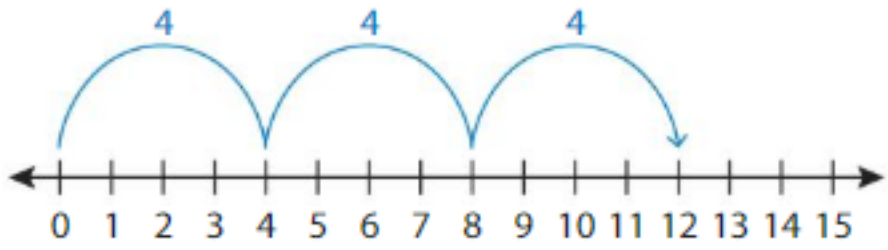
Example Find 3×4.

3×4 means 3 groups of 4.

Number of jumps: _____

Size of each jump: _____

Start at 0. Skip count by 4s three times.

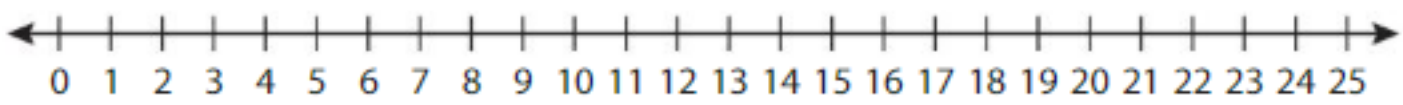


$3 \times 4 =$ _____

Show and Grow

1. Find 2×4.

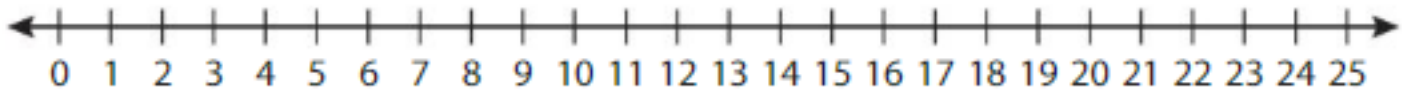
Number of jumps: _____ Size of each jump: _____



$2 \times 4 =$ _____

2. Find 6×3.

Number of jumps: _____ Size of each jump: _____



$6 \times 3 =$ _____

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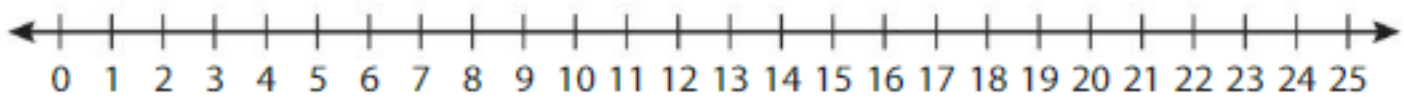
English Spanish

Name _____

Apply and Grow: Practice

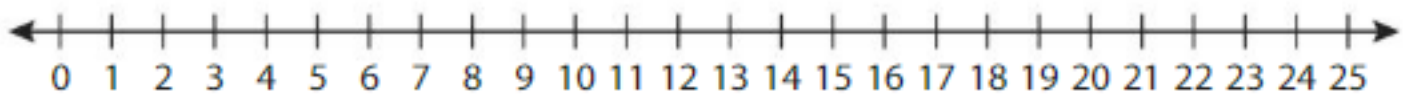
3. Find 3×5.

Number of jumps: _____ Size of each jump: _____



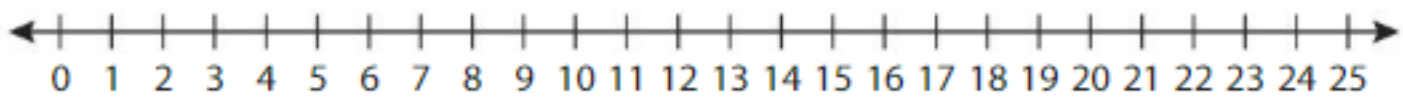
$3 \times 5 =$ _____

4. Find 5×4.



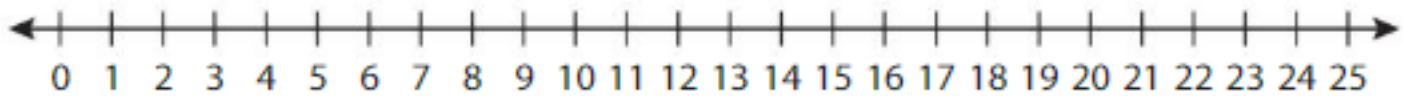
$5 \times 4 =$ _____

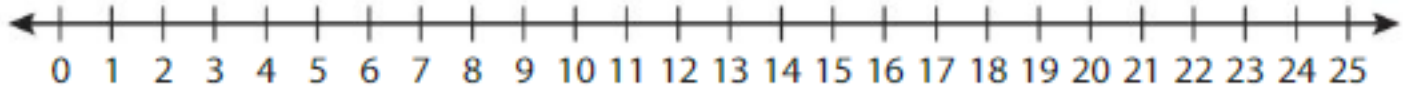
5. Find 3×8.



$3 \times 8 =$ _____

6. MP **Structure** Draw jumps to show 4 groups of 6 and 6 groups of 4.
Think: How are they the same? How are they different?





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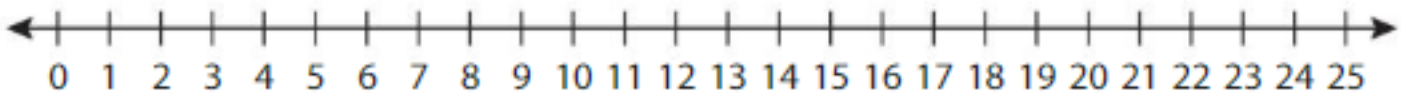
English Spanish

Think and Grow: Modeling Real Life

A group of lions is called a *pride*. There are 2 prides in a savanna. Each pride has 9 lions. How many lions are there in all?

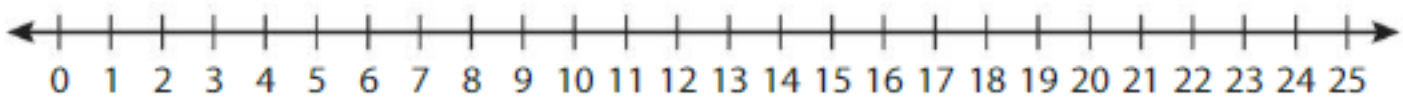
Model:



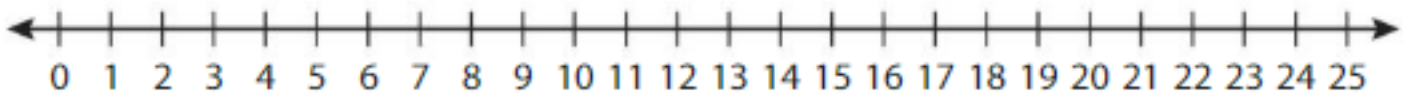
There are _____ lions in all.

Show and Grow

7. There are 3 bike racks at a park. Each bike rack has 4 bikes. How many bikes are there in all?



8. DIG DEEPER! You dig 8 holes. You plant 2 flower bulbs in each hole. You have 5 bulbs left. How many flower bulbs did you have to start?



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English Spanish

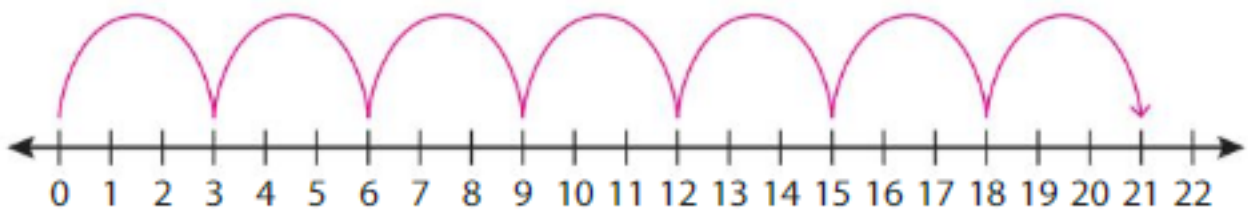
Name _____

Homework & Practice 1.2

Learning Target: Use a number line to multiply.

Example Find 7×3.

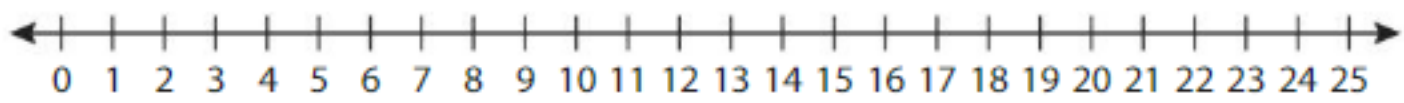
Number of jumps: 7 Size of each jump: 3



$7 \times 3 = 21$

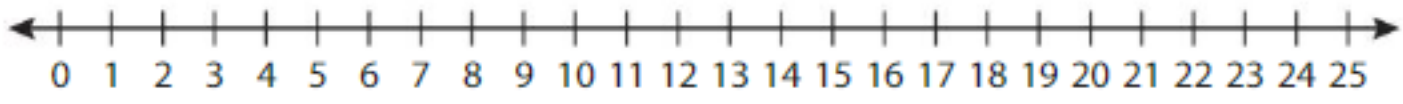
1. Find 3×6.

Number of jumps: _____ Size of each jump: _____



$3 \times 6 =$ _____

2. Find 4×5.



$4 \times 5 =$ _____

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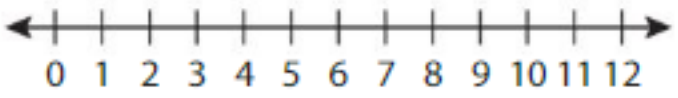
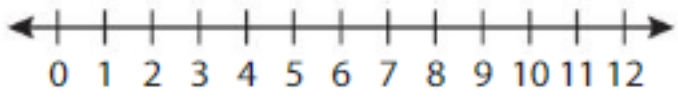
English Spanish

3. MP **Structure** Complete the multiplication equations in two different ways. Model each equation on the number line.

____ × ____ = 12



____ × ____ = 12



4. **Writing** Explain how you can use a number line to find 5 × 3.

5. **Modeling Real Life** You have 6 boxes of blueberry muffins. Each box has 4 muffins. How many muffins do you have in all?

6. DIG DEEPER! You fill 8 pages of a photo album. Each page has 3 photos. You have 1 photo left. How many photos did you have to start?

Review & Refresh

7. 9 + 8 + 2 = ____

8. 6 + 5 + 3 = ____

9. 7 + 4 + 7 = ____

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English Spanish

Name _____

Use Arrays to Multiply 1.3

Learning Target: Use an array to multiply.

Success Criteria:

- I can identify the number of rows and columns in an array.
- I can draw an array.
- I can write a multiplication equation for an array.

FLORIDA STANDARDS
MAFS.3.OA.1.1
MAFS.3.OA.1.3

Explore and Grow

Put 24 counters into equal rows. Draw your model.

Put 24 counters into a different number of equal rows. Draw your model.

MP **Structure** Compare your models. How are the models the same? How are they different?

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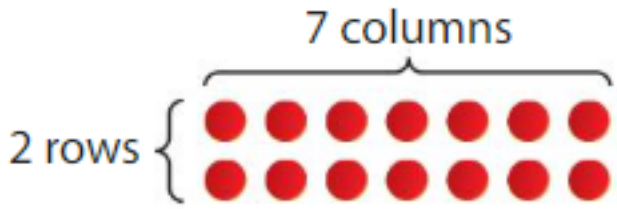
English Spanish

Think and Grow: Multiplication and Arrays

An **array** is a group of objects organized into **rows** and **columns**.
Each row has the same number of objects.

Example How many counters are there in all?



Repeated addition equation: $7 + 7 =$ _____

Multiplication equation: $2 \times 7 =$ _____

number of rows — number in each row — total

Show and Grow

1. How many counters are there in all?

_____ rows

_____ columns

_____ + _____ + _____ + _____ + _____ = _____

_____ × _____ = _____

2. Draw an array to multiply 6×3.

$6 \times 3 =$ _____

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Name _____

Apply and Grow: Practice

Draw an array to multiply.

3. $4 \times 8 =$ _____

4. $3 \times 9 =$ _____

5. $7 \times 3 =$ _____

6. $6 \times 5 =$ _____

7. MP **Number Sense** Newton has a 2×10 array of baseballs. He adds another row. How many baseballs does he add? Write a multiplication equation for his new array.

He adds _____ baseballs.

_____ × _____ = _____

8. DIG DEEPER! Use 6 counters to make as many different arrays as possible using all of the counters. Draw the arrays. Then write a multiplication equation for each array.

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Think and Grow: Modeling Real Life

A phone has 6 rows of apps with 4 apps in each row. How many apps are on the phone?

Draw:

Equation:

There are _____ apps on the phone.

Show and Grow

9. Your classroom has 3 rows of desks with 10 desks in each row. How many desks are in your classroom?

10. DIG DEEPER! A square array has an equal number of rows and columns. A farmer has 9 corn seeds to plant in a square array. Draw the square array the farmer can use to plant all of the seeds. How many rows and columns are there?

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English Spanish

Name _____

Homework & Practice 1.3

Learning Target: Use an array to multiply.

Example How many counters are there in all?

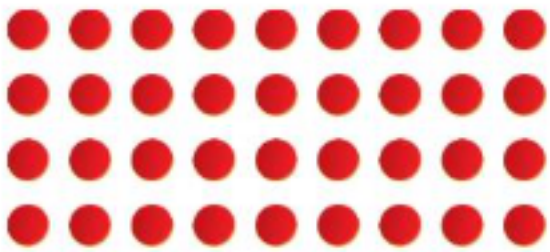
3 rows

5 columns

5 + 5 + 5 = 15

3 × 5 = 15

1. How many counters are there in all?



_____ rows

_____ columns

_____ + _____ + _____ + _____ = _____

_____ × _____ = _____

Draw an array to multiply.

2. 9 × 2 = _____

3. 4 × 5 = _____

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English Spanish

4. **YOU BE THE TEACHER** Descartes has 24 counters. He says he can use all the counters to make an array with 3 rows. Is he correct? Explain.

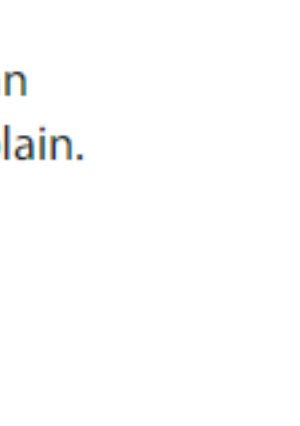
5. **Number Sense** Newton has a 4×8 array of dominoes. He adds 2 more rows. How many dominoes does he add? Write a multiplication equation for his new array.

He adds _____ dominoes.

_____ $\times$ _____ = _____

6. **Modeling Real Life** An art teacher hangs 2 rows of paintings with 10 paintings in each row. How many paintings does she hang?

7. **DIG DEEPER!** A museum has 16 shark teeth to display in a square array. Draw the square array the museum can use to display all of the teeth. How many rows and columns are there?



Review & Refresh

Complete the equation.

8. $3 + 8 = 8 +$ _____

9. $10 + 0 =$ _____ $+ 10$

10. $6 +$ _____ $= 7 + 6$

11. _____ $+ 8 = 8 + 9$

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English Spanish

Name _____

Multiply in Any Order 1.4

Learning Target: Multiply factors in any order.

Success Criteria:

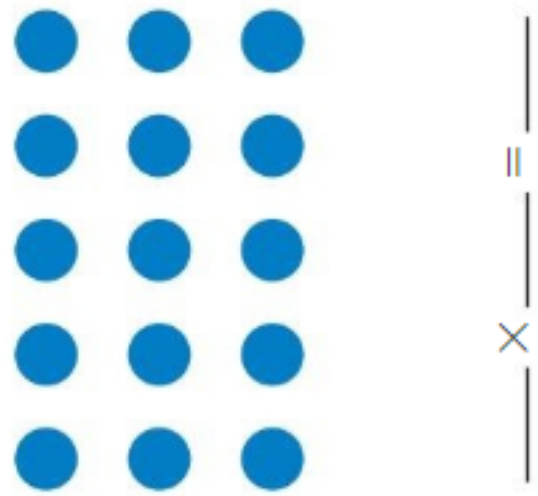
- I can use arrays to show the Commutative Property of Multiplication.
- I can write two multiplication equations for an array.
- I can use the Commutative Property of Multiplication.

FLORIDA STANDARDS

MAFS.3.OA.1.1
MAFS.3.OA.1.3
MAFS.3.OA.2.5

Explore and Grow

Write the multiplication equation for the array. Turn your paper and write the equation for the array.



_____ × _____ = _____

Structure Compare the equations. How are they the same? How are they different?

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Think and Grow: Commutative Property of Multiplication

In a multiplication equation, the numbers that are multiplied are called **factors**. The answer is called the **product**.

$3 \times 5 = 15$

factors product

Commutative Property of Multiplication: Changing the order of factors does not change the product.

Example Complete the statements.

3 rows of _____

$3 \times 4 =$ _____

4 rows of _____

$4 \times 3 =$ _____

So, $3 \times$ _____ $= 4 \times$ _____.

Show and Grow

1. Complete the statements.

_____ rows of _____

_____ × _____ = _____

_____ rows of _____

_____ × _____ = _____

So, _____ × _____ = _____ × _____.

2. Draw an array to show the Commutative Property of Multiplication. Complete the statements.

_____ × _____ = _____

_____ × _____ = _____

So, _____ × _____ = _____ × _____.

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English Spanish

Name _____

Apply and Grow: Practice

Draw an array to show the Commutative Property of Multiplication.
Complete the statements.

3.

_____ × _____ = _____

_____ × _____ = _____

So, _____ × _____ = _____ × _____.

4.

_____ × _____ = _____

_____ × _____ = _____

So, _____ × _____ = _____ × _____.

5.

_____ × _____ = _____

_____ × _____ = _____

So, _____ × _____ = _____ × _____.

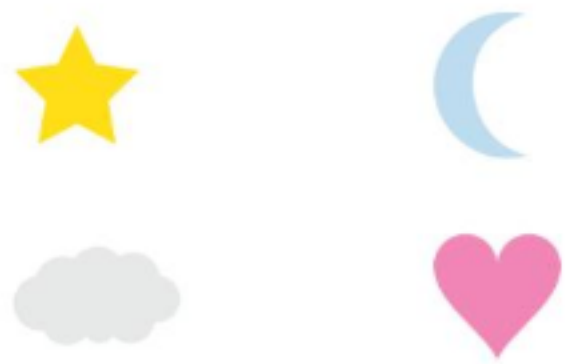
Complete the equation.

6. $8 \times 3 = 3 \times$ _____

7. $10 \times 2 =$ _____ $\times 10$

8. $1 \times$ _____ $= 9 \times 1$

9. MP **Structure** Which shape completes the equation?



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Think and Grow: Modeling Real Life

Your friend makes 7 rows of 6 stickers. You want to put the same number of stickers into 6 rows. How many stickers do you put in each row? Explain.

You put _____ stickers in each row.

Explain:

Show and Grow

10. Your friend makes 9 rows of 4 award ribbons. You want to put the same number of award ribbons into 4 rows. How many award ribbons do you put in each row? Explain.

11. **DIG DEEPER!** You have 2 rows of 8 toy cars. Your friend has 5 rows of 2 toy cars. How can you use the Commutative Property of Multiplication to find how many rows your friend needs to add so that you both have the same number of toy cars?

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English Spanish

Name _____

Homework & Practice 1.4

Learning Target: Multiply factors in any order.

Example Complete the statements.

2 rows of 4

2 × 4 = 8

4 rows of 2

4 × 2 = 8

So, 2 × 4 = 4 × 2.

1. Complete the statements.

_____ rows of _____

_____ × _____ = _____

_____ rows of _____

_____ × _____ = _____

So, _____ × _____ = _____ × _____.

2. Draw an array to show the Commutative Property of Multiplication. Complete the statements.

_____ × _____ = _____

_____ × _____ = _____

So, _____ × _____ = _____ × _____.

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3. **Structure** Which two arrays can you use to show the Commutative Property of Multiplication?

---

4. **Precision** Write two equations that show the Commutative Property of Multiplication.

____ × ____ = ____ × ____ | ____ × ____ = ____ × ____

---

5. **Modeling Real Life** A computer lab has 6 rows of 5 computers. A technology teacher wants to rearrange the computers into 5 rows. How many computers does the teacher put in each row? Explain.

---

6. **DIG DEEPER!** You have 6 rows of 4 pennies. Your friend has 2 rows of 6 pennies. How many rows does your friend need to add so that you both have the same number of pennies?

Review & Refresh

7. Newton hits a ball 5 fewer times than Descartes does. Newton hits the ball 9 times. How many times does Descartes hit the ball?

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English Spanish

Name _____

Divide: Size of Equal Groups

1.5

Learning Target: Use division to find the size of equal groups.

Success Criteria:

- I can model equal groups.
- I can identify the size of equal groups.
- I can write a division equation.

FLORIDA STANDARDS

MAFS.3.OA.1.2
MAFS.3.OA.1.3

Explore and Grow

Put 18 counters in 6 equal groups. Draw to show your groups.

Number of counters in each group: _____

Put 18 counters in 3 equal groups. Draw to show your groups.

Number of counters in each group: _____

MP **Structure** How does changing the number of equal groups change the number of counters in each group?

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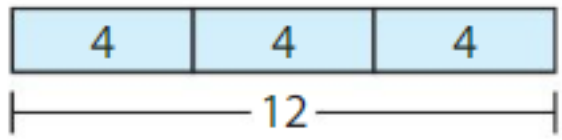
English Spanish

Think and Grow: Using Equal Groups to Divide

Division is an operation that gives the size of equal groups or the number of equal groups. When you know the total number of objects and the number of equal groups, you can divide to find the size of each group.

Example Divide 12 counters into *3 equal groups*. How many counters are in each group?



12 ÷ 3 is read as "twelve divided by three."

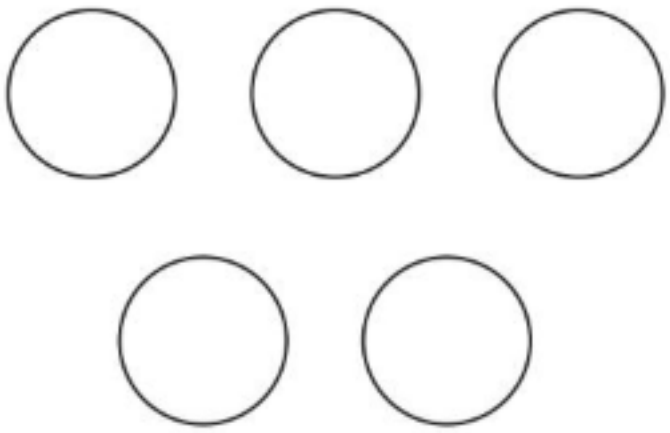
division symbol

Division equation: 12 ÷ 3 = ____

total — number of equal groups — size of each group

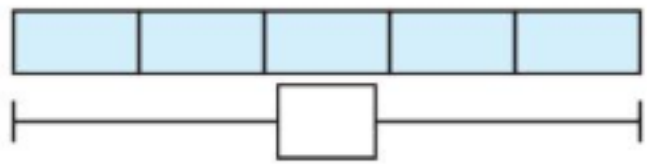
Show and Grow

1. Divide 15 counters into 5 equal groups. How many counters are in each group?



15 ÷ 5 = ____

Use the tape diagram to model the equation.



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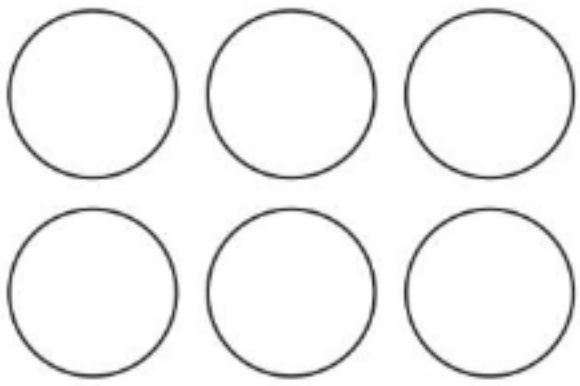
English Spanish

Name _____

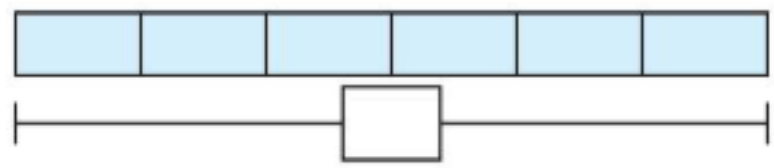
Apply and Grow: Practice

2. Divide 30 counters into 6 equal groups. How many counters are in each group?



30 ÷ 6 = _____

Use the tape diagram to model the equation.



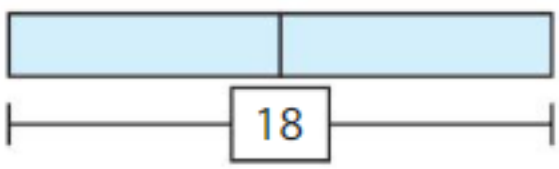
3. Divide 16 counters into 2 equal groups. How many counters are in each group?

16 ÷ 2 = _____

4. Divide 9 counters into 3 equal groups. How many counters are in each group?

9 ÷ 3 = _____

5. MP **Structure** Write the division equation that matches the tape diagram.



_____ ÷ _____ = _____

6. DIG DEEPER! Newton has a tennis ball collection. He can divide the balls into 3 equal groups with none left over. He can also divide the balls into 4 equal groups with none left over. How many tennis balls does he have?

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English Spanish

Think and Grow: Modeling Real Life

You have 30 seashells. You put an equal number of seashells in 5 bags. How many seashells are in each bag?

Model:

Division equation:

There are _____ seashells in each bag.

Show and Grow

7. You have 28 rocks. You put an equal number of rocks in 4 piles. How many rocks are in each pile?

8. **DIG DEEPER!** Newton and Descartes each have 40 quarters. Newton puts his quarters into 5 equal groups. Descartes puts his quarters into 4 equal groups. Who has more quarters in each group?

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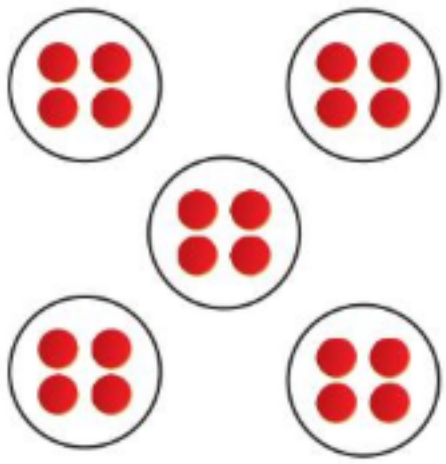
English Spanish

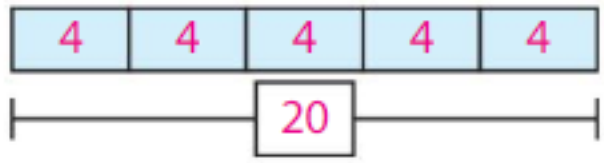
Name _____

Homework & Practice 1.5

Learning Target: Use division to find the size of equal groups.

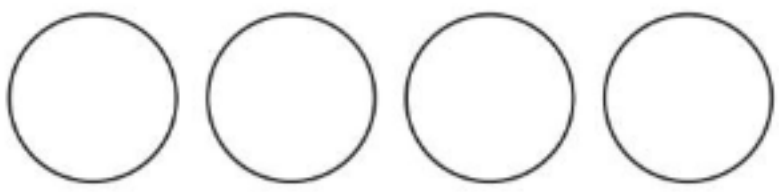
Example Divide 20 counters into 5 equal groups. How many counters are in each group?





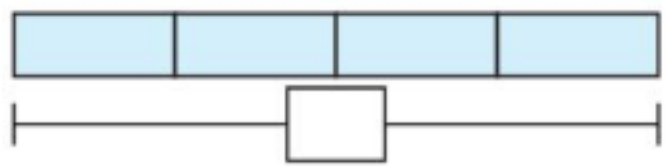
$20 \div 5 = \underline{4}$

1. Divide 16 counters into 4 equal groups. How many counters are in each group?



$16 \div 4 = \_\_\_\_$

Use the tape diagram to model the equation.



2. Divide 28 counters into 7 equal groups. How many counters are in each group?

$28 \div 7 = \_\_\_\_$

3. Divide 27 counters into 3 equal groups. How many counters are in each group?

$27 \div 3 = \_\_\_\_$

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English Spanish

4. **YOU BE THE TEACHER** Newton says you *cannot* divide 18 counters into 3 equal groups. Is he correct?

5. **Precision** A class has 14 boys and 18 girls. Can the teacher divide the class equally into 4 groups with no students remaining? Explain.

6. **Modeling Real Life** You have 14 erasers. You and your friend share them equally. How many erasers do you and your friend each get?

7. **DIG DEEPER!** Newton and Descartes each have 42 glow-in-the-dark stickers. Newton divides his into 6 equal groups. Descartes divides his into 7 equal groups. Who has more stickers in each group?

Review & Refresh

8.
$$\begin{array}{r} 26 \\ +\ 15 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 32 \\ +\ 55 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 49 \\ +\ 12 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 24 \\ +\ 68 \\ \hline \end{array}$$

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English Spanish

Name _____

Divide: Number of Equal Groups

1.6

Learning Target: Use division to find the number of equal groups.

Success Criteria:

- I can model equal groups.
- I can identify the number of equal groups.
- I can write a division equation.

FLORIDA STANDARDS

MAFS.3.OA.1.2
MAFS.3.OA.1.3

Explore and Grow

Put 24 counters in equal groups of 4. Draw to show your groups.

Number of groups: _____

Put 24 counters in equal groups of 6. Draw to show your groups.

Number of groups: _____

MP **Structure** How does changing the size of the groups change the number of equal groups?

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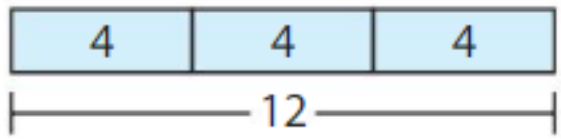
English Spanish

Think and Grow: Using Equal Groups to Divide

When you know the total number of objects and the size of each group, you can divide to find the number of equal groups.

Example Divide 12 counters into *groups of 4*. How many groups are there?



Division equation: $12 \div 4 = \_\_\_\_$

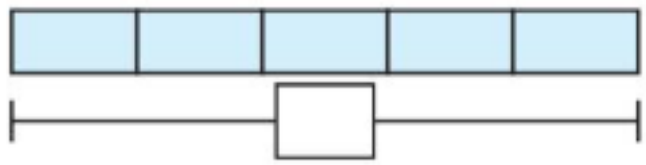
- 12 ↑ total
- 4 ↑ number in each group
- ____ ↖ number of equal groups

Show and Grow

1. Divide 10 counters into groups of 2. How many groups are there?

$10 \div 2 = \_\_\_\_$

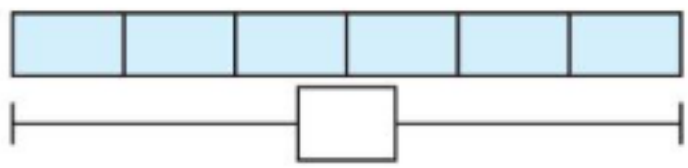
Use the tape diagram to model the equation.



2. Divide 24 counters into groups of 4. How many groups are there?

$24 \div 4 = \_\_\_\_$

Use the tape diagram to model the equation.



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English Spanish

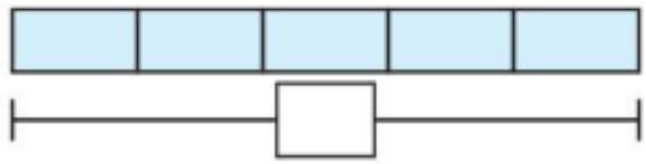
Name _____

Apply and Grow: Practice

3. Divide 30 counters into groups of 6. How many groups are there?

30 ÷ 6 = _____

Use the tape diagram to model the equation.



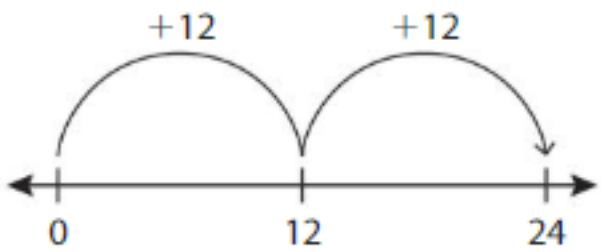
4. Divide 15 counters into groups of 5. How many groups are there?

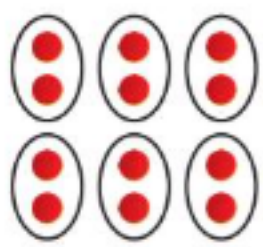
15 ÷ 5 = _____

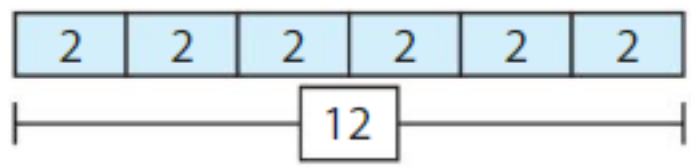
5. Divide 16 counters into groups of 4. How many groups are there?

16 ÷ 4 = _____

6. MP **Structure** You want to bake as many loaves of banana bread as possible with 12 eggs. Each loaf of bread requires 2 eggs. Which models can you use to find how many loaves of bread you can make?







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Think and Grow: Modeling Real Life

A florist uses 35 roses to make bouquets. Each bouquet has 7 roses. How many bouquets does the florist make?

Equation:

Model:

The florist makes _____ bouquets.

Show and Grow

7. A farmer puts 48 eggs into cartons. He puts 6 eggs in each carton. How many cartons does he use?

8. DIG DEEPER! Newton uses his subway pass 3 times each day. Descartes uses his pass 2 times each day. Who will use all of his rides first? Explain.

	Subway Rides Left
Newton	24
Descartes	18

Would your answer change if Newton and Descartes both use their passes 3 times each day? Explain.

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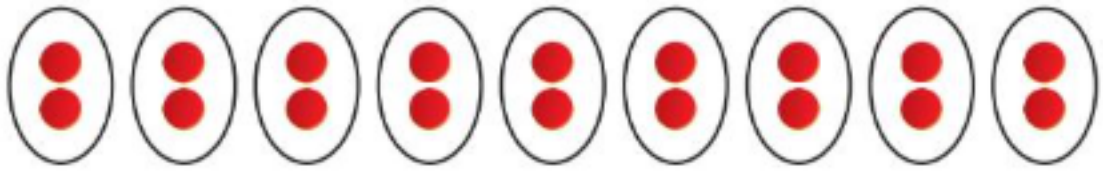
English Spanish

Name _____

Homework & Practice 1.6

Learning Target: Use division to find the number of equal groups.

Example Divide 18 counters into groups of 2. How many groups are there?

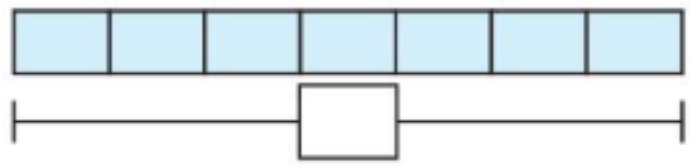


$18 \div 2 =$ 9

1. Divide 28 counters into groups of 4. How many groups are there?

$28 \div 4 =$ _____

Use the tape diagram to model the equation.



2. Divide 25 counters into groups of 5. How many groups are there?

$25 \div 5 =$ _____

3. Divide 12 counters into groups of 6. How many groups are there?

$12 \div 6 =$ _____

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4. **Writing** Write and solve a problem in which you need to find the number of equal groups.

5. MP **Reasoning** Your classroom has 30 chairs that need to be stacked with 5 chairs in each stack. Your teacher already made 2 stacks. How many stacks of chairs still need to be made?

6. DIG DEEPER! You have more than 30 and fewer than 40 piñata toys. You divide them into groups with 8 in each group. How many groups do you make?

7. **Modeling Real Life** A street vendor puts 42 apples into baskets. She puts 6 apples in each basket. How many baskets does she use?

8. DIG DEEPER! Newton and Descartes are at an amusement park. Newton uses 2 tickets to ride each roller coaster. Descartes uses 3 tickets to ride at the front of each roller coaster. Who runs out of tickets first? Explain.

	Coaster Tickets
Newton	14
Descartes	21

Newton Descartes They run out of tickets at the same time.

Review & Refresh

Find the difference. Use addition to check your answer.

9.

$$\begin{array}{r} 96 \\ -\ 58 \\ \hline \end{array} \qquad + \_\_\_\_$$

10.

$$\begin{array}{r} 48 \\ -\ 32 \\ \hline \end{array} \qquad + \_\_\_\_$$

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English Spanish

Name _____

Use Number Lines to Divide

1.7

Learning Target: Use a number line to divide.

Success Criteria:

- I can use a number line to skip count backward.
- I can write repeated subtraction equations and a division equation.

FLORIDA STANDARDS
MAFS.3.OA.1.3

Explore and Grow

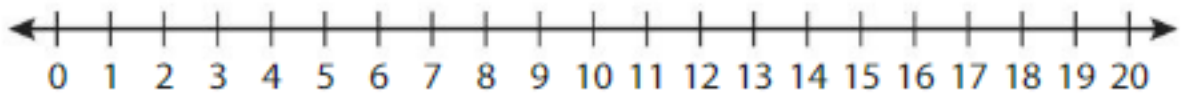
Find the difference. Use each difference as the starting number in the next equation. Model the problems on the number line.

12 − 3 = _____

_____ − 3 = _____

_____ − 3 = _____

_____ − 3 = _____



MP **Structure** How can you use a number line to help you find 12 ÷ 3?

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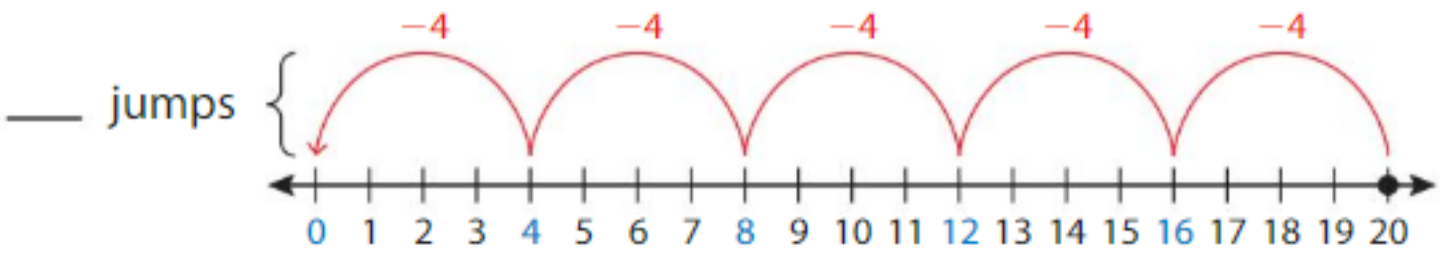
Think and Grow: Number Lines and Repeated Subtraction

Example Find 20 ÷ 4.

One Way: Use a number line. Start at 20. Count back by 4s until you reach 0.



There are 5 groups of 4. So, 20 ÷ 4 = _____.

Another Way:

Use repeated subtraction. Start with 20. Subtract 4 until you reach 0.

$20 - 4 = 16$
$16 - 4 = 12$
$12 - 4 = 8$
$8 - 4 = 4$
$4 - 4 = 0$

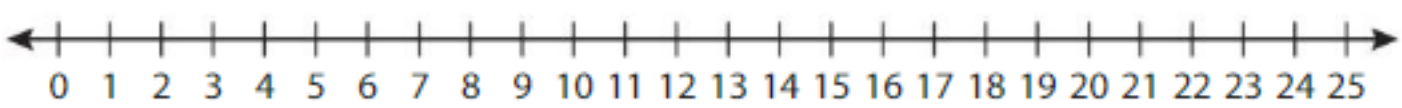
You subtract 4 _____ times.

$20 \div 4 =$ _____

Show and Grow

Complete the equations.

1. 24 ÷ 6 = _____



2. 16 ÷ 8 = _____

16 − 8 = _____

_____ − 8 = 0

3. 27 ÷ 9 = _____

27 − 9 = _____

_____ − 9 = _____

_____ − 9 = 0

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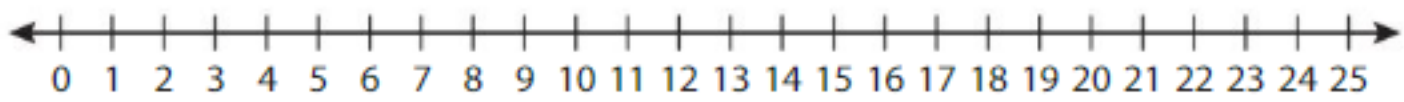
English Spanish

Name _____

Apply and Grow: Practice

Complete the equations.

4. 25 ÷ 5 = _____



5. 21 − 7 = _____

_____ − 7 = _____

_____ − 7 = 0

_____ ÷ _____ = _____

6. 36 − 9 = _____

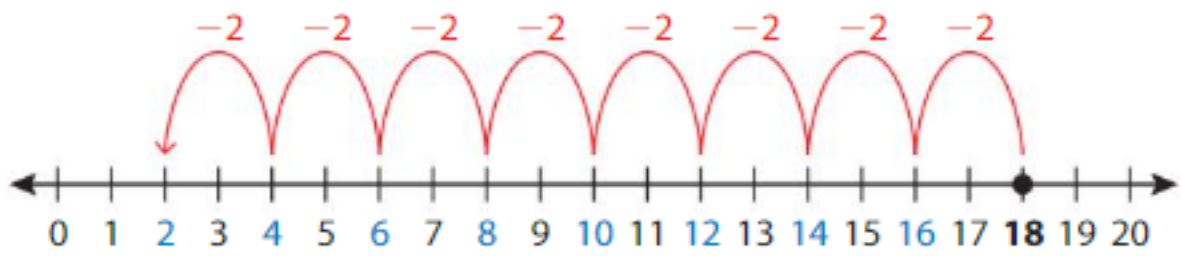
_____ − 9 = _____

_____ − 9 = _____

_____ − 9 = 0

_____ ÷ _____ = _____

7. **YOU BE THE TEACHER** Descartes uses a number line to find 18 ÷ 2. Is he correct? Explain.



18 ÷ 2 = 8

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Think and Grow: Modeling Real Life

Each age group is divided into teams with 6 players on each team. Each team receives a trophy at the end of the season. How many trophies are needed?

Age Group	Number of Players
6–7 years old	18
8–9 years old	24

Division equations:

Addition equation:

_____ trophies are needed.

Show and Grow

8. Each age group is put into cabins with 8 campers in each cabin. How many cabins are needed?

Age Group	Number of Campers
5–7 years old	32
8–10 years old	24

The two age groups are combined into one group. Does the total number of cabins that are needed change? Explain.

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Name _____

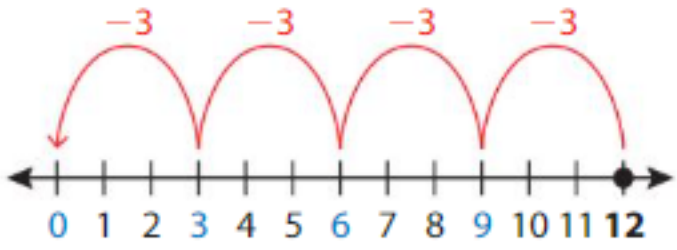
Homework & Practice 1.7

Learning Target: Use a number line to divide.

Example Find 12 ÷ 3.

One Way:

12 ÷ 3 = 4



Another Way:

12 − 3 = 9

9 − 3 = 6

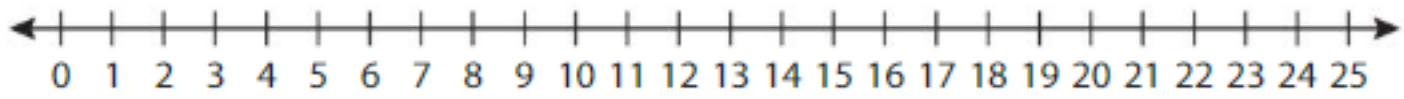
6 − 3 = 3

3 − 3 = 0

12 ÷ 3 = 4

Complete the equations.

1. 9 ÷ 3 = _____



2. 20 − 5 = _____

_____ − 5 = _____

_____ − 5 = _____

_____ − 5 = 0

_____ ÷ _____ = _____

3. 10 − 2 = _____

_____ − 2 = _____

_____ − 2 = _____

_____ − 2 = _____

_____ − 2 = 0

_____ ÷ _____ = _____

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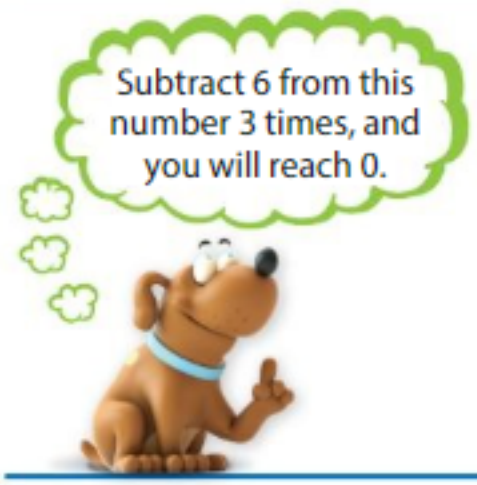
4. **YOU BE THE TEACHER** Descartes uses repeated subtraction to find 15 ÷ 5. Is he correct? Explain.



5. **DIG DEEPER!** Find Newton's missing number. Explain how you solved.

6. **Modeling Real Life** Each age group is divided into groups of 7 swimmers. How many groups are there in each age group?

Age Group	Number of Swimmers
6–8 years old	28
9–11 years old	14

The two age groups are combined into one group. Does the total number of groups change? Explain.

Review & Refresh

7. Circle the values of the underlined digit.

5<u>8</u>1 | 8 tens | 8 | 80

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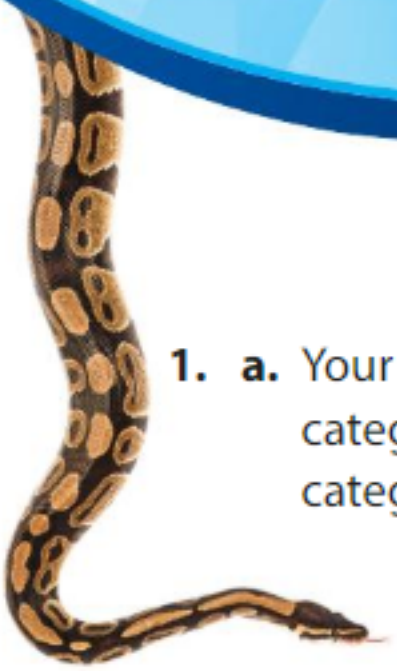
English Spanish

Name _____

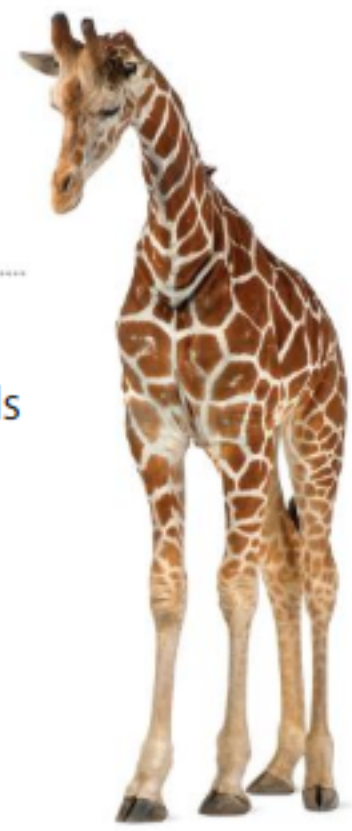
Performance Task 1



1. a. Your science teacher gives you 71 picture cards to sort into categories, living and nonliving. You sort 11 cards into the nonliving category. How many cards do you sort into the living category?

b. You sort the living cards into 2 categories, plants and animals. The numbers of cards in each category are equal. How many cards are in the animal category?

c. You divide the animal cards into 6 equal groups. How many animal cards are in each group?



d. The animals in 5 of the groups have backbones, and the animals in the other group do not have backbones. How many more cards have animals with backbones? Explain.

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Hooray Array!

Getting Started: Fill in your board with each number from the Number List. You may write each number in any square. Each square can only have one number.

Directions:

1. Choose a player to be the caller. The caller selects a Hooray Array Equation Card and reads the equation.
2. All players solve the equation and place a counter on the answer. Cover only 1 number per turn.
3. Repeat the process with players taking turns as the caller.
4. The winner is the first player who creates a 3 × 3 array on the board and yells, "HOORAY ARRAY!"

		FREE		

Number List

2
3
3
4
4
5
6
6
6
7
8
8
9
9
10
12
12
15
16
18
18
20
24
24

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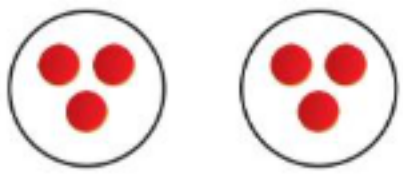
English Spanish

Name _____

Chapter Practice 1

1.1 Use Equal Groups to Multiply

1. Use the model to complete the statements.



_____ groups of _____

_____ + _____ = _____

_____ × _____ = _____

Draw equal groups. Then complete the equations.

2. 3 groups of 6

_____ + _____ + _____ = _____

_____ × _____ = _____

3. 4 groups of 5

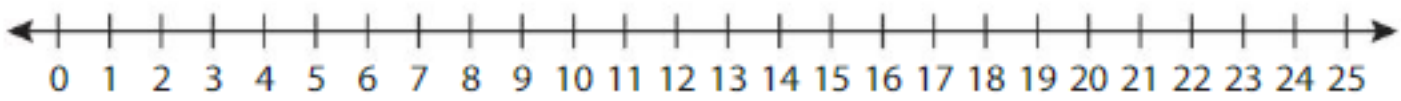
_____ + _____ + _____ + _____ = _____

_____ × _____ = _____

1.2 Use Number Lines to Multiply

4. Find 8 × 3.

Number of jumps: _____ Size of each jump: _____



8 × 3 = _____

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1.3 Use Arrays to Multiply

Draw an array to multiply.

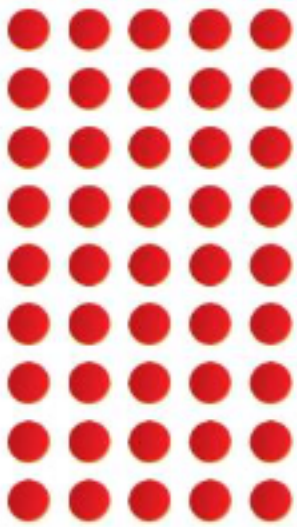
5. $2 \times 8 =$ _____

6. $7 \times 4 =$ _____

7. **YOU BE THE TEACHER** Newton has 32 counters. He says that he can use all the counters to make an array with 6 rows. Is he correct? Explain.

1.4 Multiply in Any Order

8. Draw an array to show the Commutative Property of Multiplication. Complete the statements.



_____ × _____ = _____

_____ × _____ = _____

So, _____ × _____ = _____ × _____.

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Complete the equation.

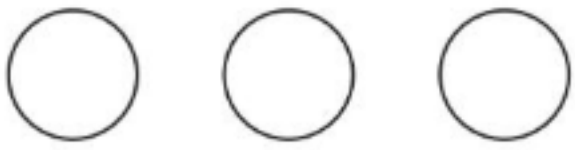
9. $4 \times 10 = 10 \times$ _____

10. $3 \times 9 =$ _____ $\times 3$

11. $8 \times$ _____ $= 4 \times 8$

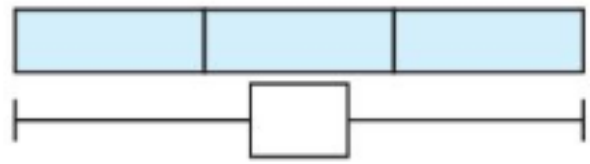
1.5 Divide: Size of Equal Groups

12. Divide 27 counters into 3 equal groups. How many counters are in each group?



$27 \div 3 =$ _____

Use the tape diagram to model the equation.



13. Divide 32 counters into 4 equal groups. How many counters are in each group?

$32 \div 4 =$ _____

14. Divide 12 counters into 4 equal groups. How many counters are in each group?

$12 \div 4 =$ _____

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1.6 Divide: Number of Equal Groups

15. Divide 15 counters into groups of 3. How many groups are there?

15 ÷ 3 = _____

16. Divide 20 counters into groups of 2. How many groups are there?

20 ÷ 2 = _____

17. **Modeling Real Life** Newton and Descartes are trying a new music app. Newton uses 4 credits a day to hear songs without commercials. Descartes uses 2 credits a day to hear songs with commercials. Who runs out of credits first? Explain.

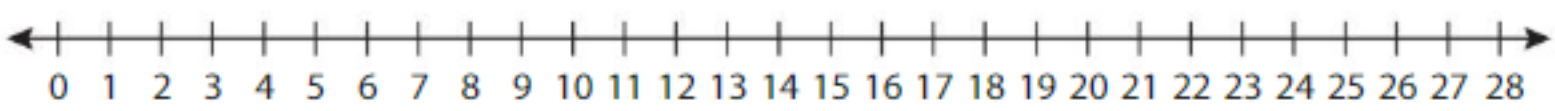
	Credits
Newton	24
Descartes	14

Newton Descartes They run out of credits at the same time.

1.7 Use Number Lines to Divide

Complete the equations.

18. 28 ÷ 7 = _____



19. 18 − 9 = _____

_____ − 9 = 0

_____ ÷ _____ = _____

20. 12 − 4 = _____

_____ − 4 = _____

_____ − 4 = 0

_____ ÷ _____ = _____

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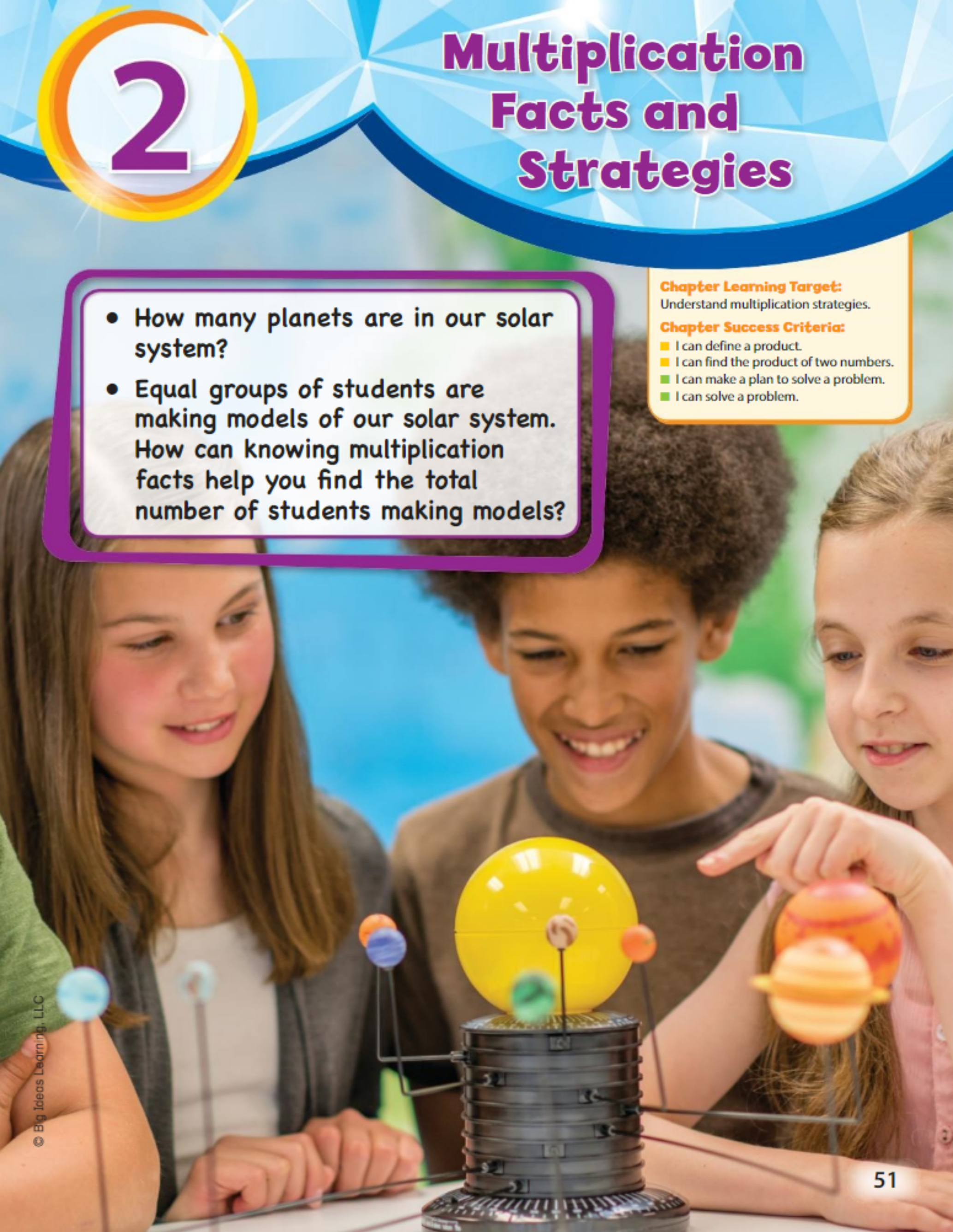
2 Multiplication Facts and Strategies

- How many planets are in our solar system?
- Equal groups of students are making models of our solar system. How can knowing multiplication facts help you find the total number of students making models?

Chapter Learning Target:
Understand multiplication strategies.

Chapter Success Criteria:
- I can define a product.
- I can find the product of two numbers.
- I can make a plan to solve a problem.
- I can solve a problem.



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Name _____

2 Vocabulary

Review Words

array
equal groups
repeated addition

Organize It

Use the review words to complete the graphic organizer.

Ways to Show Multiplication	Examples	Non-Examples
	$4 + 4 + 4$	$2 + 3 + 4$

Define It

Use your vocabulary cards to match.

1. multiple

The product of any number and 1 is that number.

$10 \times 1 = 10$ $1 \times 2 = 2$

2. Multiplication Property of Zero

The product of a number and any other counting number

3. Multiplication Property of One

The product of any number and 0 is 0.

$5 \times 0 = 0$ $0 \times 2 = 0$

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Chapter 2 Vocabulary Cards

Distributive Property (with addition)

multiple

Multiplication Property of One

Multiplication Property of Zero

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The product of a number and any other counting number

$1 \times 5 = 5$

$2 \times 5 = 10$

$3 \times 5 = 15$

$4 \times 5 = 20$

multiples of 5

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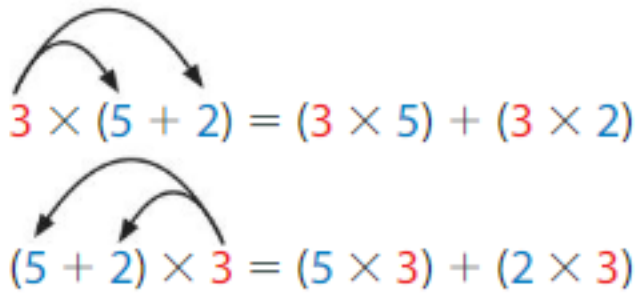

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The product of any number and 0 is 0.

$5 \times 0 = 0$ $0 \times 2 = 0$

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The product of any number and 1 is that number.

$10 \times 1 = 10$ $1 \times 2 = 2$

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Name _____

Multiply by 2

2.1

Learning Target: Multiply by 2.

Success Criteria:

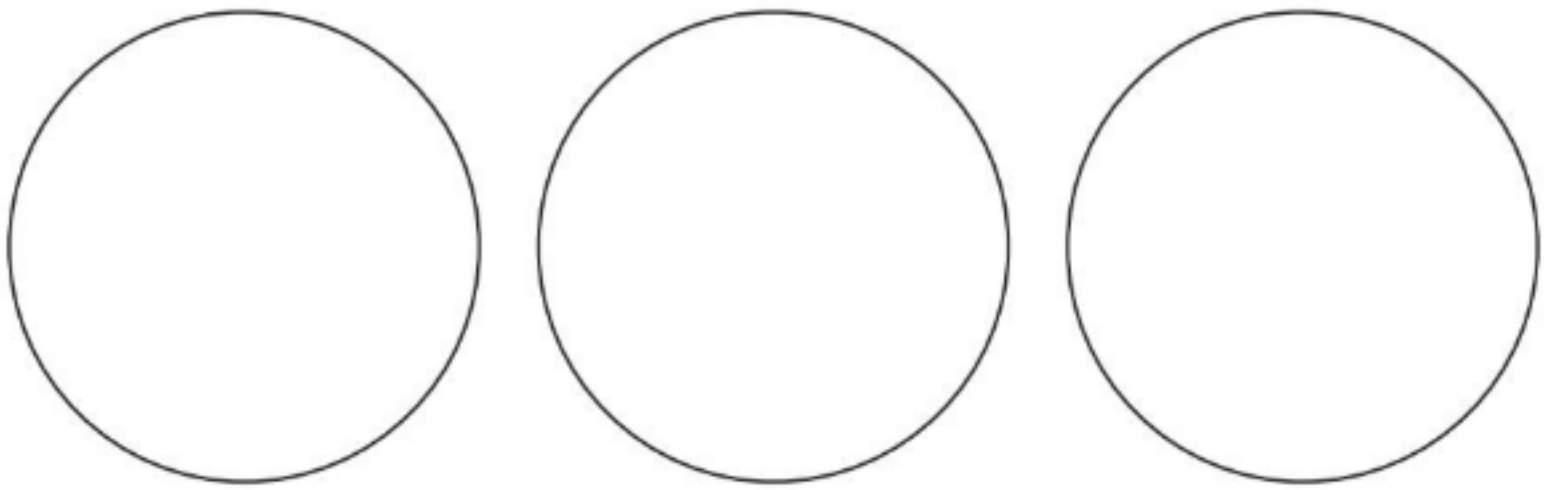
- I can use a model to multiply by 2.
- I can find the product of a number and 2.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7
MAFS.3.OA.4.9

Explore and Grow

Model 3×2 using equal groups.



$3 \times 2 =$ _____

MP **Structure** How can you use the model to find 4×2?

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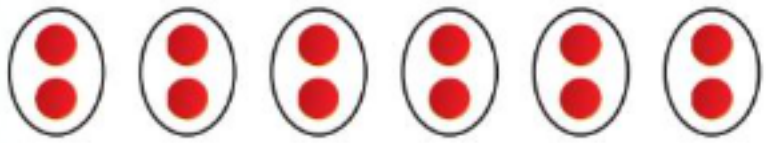
Think and Grow: Multiply by 2

Example Find 6×2.

Model six groups of two.



$2 + 2 + 2 + 2 + 2 + 2 =$ _____

$6 \times 2 =$ _____ or $\begin{array}{r} 6 \\ \times\ 2 \\ \hline \square \end{array}$

A **multiple** of a number is the product of that number and any other counting number.

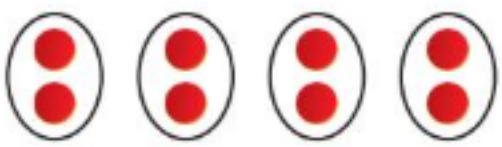
Example Complete the table and the statements.

2s Facts	
$1 \times 2 =$ _____	$6 \times 2 =$ _____
$2 \times 2 =$ _____	$7 \times 2 =$ _____
$3 \times 2 =$ _____	$8 \times 2 =$ _____
$4 \times 2 =$ _____	$9 \times 2 =$ _____
$5 \times 2 =$ _____	$10 \times 2 =$ _____

- Multiples of 2 end in _____, _____, _____, _____, or _____.
- A number times 2 is always an _____ number.

Show and Grow

1. Complete the equations for the model.



_____ + _____ + _____ + _____ = _____

_____ × _____ = _____

Find the product.

2. $7 \times 2 =$ _____

3. $2 \times 3 =$ _____

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English Spanish

Name _____

Apply and Grow: Practice

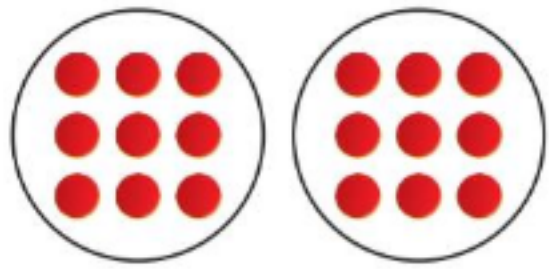
Complete the equations for the model.

4.

_____ + _____ + _____ + _____ + _____ = _____

_____ × _____ = _____

5.



_____ + _____ = _____

_____ × _____ = _____

Find the product.

6. 2 × 2

7. 3 × 2

8. 2 × 10

9. 1 × 2

10. 6 × 2

11. 2 × 8

12. 4 × 2

13. 7 × 2

Find the missing factor.

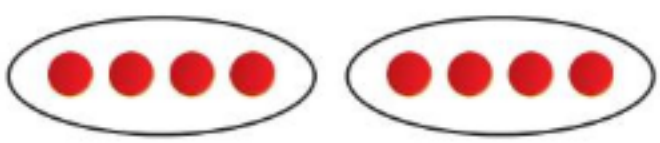
14. 2 × _____ = 14

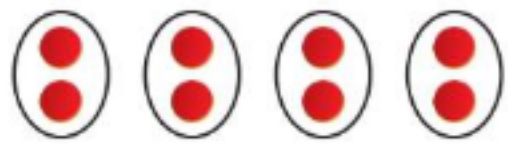
15. 2 × _____ = 20

16. 5 × _____ = 10

17. How many gloves are in 9 pairs of gloves?

18. MP **Structure** How are the models similar? How are they different?





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Think and Grow: Modeling Real Life

A sled dog team must have at least 6 rows of 2 dogs. A musher has 15 dogs. Does he have enough dogs for a team?

Multiplication equation:

The musher _____ have enough dogs for a team.

Show and Grow

19. Your teacher asks you to make 2 rows of 8 chairs. There are 18 chairs. Do you have enough chairs?

20. You have 5 pairs of socks. Do you have enough socks to make 12 sock puppets?

DIG DEEPER! You want to make as many sock puppets as you can with the socks that you have. You need 2 googly eyes for each puppet. How many googly eyes do you need?

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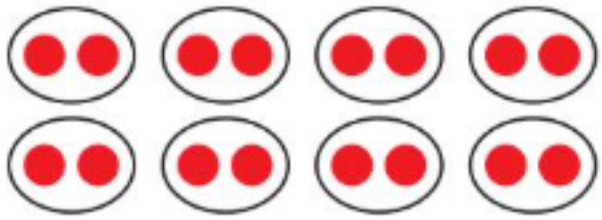
English Spanish

Name _____

Homework & Practice 2.1

Learning Target: Multiply by 2.

Example Find 8×2.



$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = \underline{16}$

$8 \times 2 = \underline{16}$ or $\underline{\times\ 2}$

$\boxed{16}$

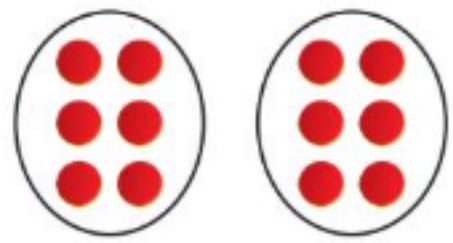
Complete the equations for the model.

1.

_____ + _____ + _____ = _____

_____ × _____ = _____

2.



_____ + _____ = _____

_____ × _____ = _____

Find the product.

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

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

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

6. $\begin{array}{r} 2 \\ \times\ 9 \\ \hline \end{array}$

7. $\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$

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

9. $\begin{array}{r} 5 \\ \times\ 2 \\ \hline \end{array}$

10. $\begin{array}{r} 2 \\ \times\ 1 \\ \hline \end{array}$

Find the missing factor.

11. $2 \times \_\_\_\_ = 16$

12. $2 \times \_\_\_\_ = 18$

13. $\_\_\_\_ \times 3 = 6$

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English Spanish

14. A pendulum swings once every 2 seconds. How long will it take for the pendulum to swing 4 times?

15. **Repeated Reasoning** Complete the multiplication table.

×	1	2	3	4	5	6	7	8	9	10
2										

16. You buy a shirt that costs $7 and a pair of pants that costs 2 times as much. Write a multiplication equation to show the cost of the pants.

____ × ____ = ____

How much money do you spend in all? ____

17. **Modeling Real Life** A plumber needs to install handles in 9 sinks. Each sink has a hot water handle and a cold water handle. He has 19 handles. Does he have enough handles?

18. **Modeling Real Life** You have 6 pairs of chopsticks. Do you have enough chopsticks for 4 people if they each get a pair?

DIG DEEPER! You want to make wrappers for each pair of chopsticks that you have. You need 2 pieces of paper for each wrapper. How many pieces of paper do you need?

Review & Refresh

Compare.

19. 923 ◯ 854

20. 621 ◯ 63

21. 746 ◯ 752

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English Spanish

Name _____

Multiply by 5 2.2

Learning Target: Multiply by 5.

Success Criteria:

- I can use a model to multiply by 5.
- I can find the product of a number and 5.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7
MAFS.3.OA.4.9

Explore and Grow

Model 3×5 on the number line.

$3 \times 5 =$ _____

Model 4×5 on the number line.

$4 \times 5 =$ _____

MP **Structure** Compare your models. How are the models the same? How are they different?

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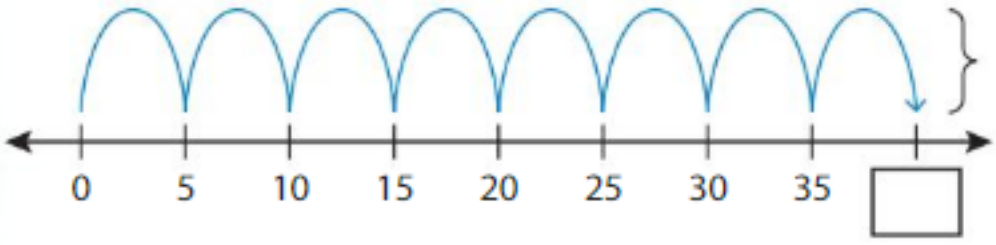
Think and Grow: Multiply by 5

Example Find 8×5.

Skip count by 5s eight times.



8 jumps of 5

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

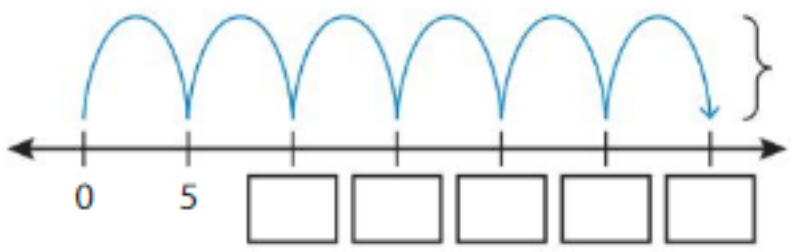
Example Complete the table and the statements.

5s Facts	
$1 \times 5 =$ ____	$6 \times 5 =$ ____
$2 \times 5 =$ ____	$7 \times 5 =$ ____
$3 \times 5 =$ ____	$8 \times 5 =$ ____
$4 \times 5 =$ ____	$9 \times 5 =$ ____
$5 \times 5 =$ ____	$10 \times 5 =$ ____

- Multiples of 5 end in ____ or ____.
- An odd number times 5 is always an _____ number.
- An even number times 5 is always an _____ number.

Show and Grow

1. Complete the model and the equation.



____ jumps of 5

____ $\times$ ____ $=$ ____

Find the product.

2. $9 \times 5 =$ ____

3. $5 \times 4 =$ ____

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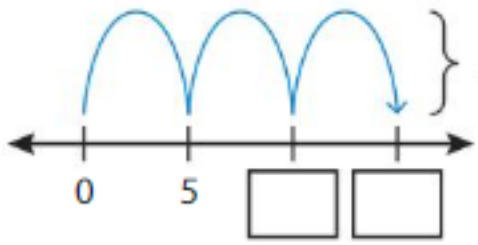
English Spanish

Name _____

Apply and Grow: Practice

Complete the model and the equation.

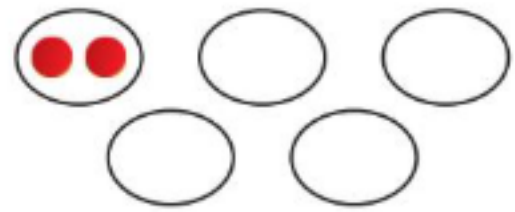
4.



_____ jumps of 5

_____ × _____ = _____

5. 5 groups of 2



_____ × _____ = _____

Find the product.

6. 4 × 5

7. 5 × 10

8. 8 × 5

9. 9 × 5

10. 6 × 5

11. 5 × 1

12. 5 × 5

13. 5 × 7

Find the missing factor.

14. 5 × _____ = 35

15. _____ × 5 = 50

16. 10 = 2 × _____

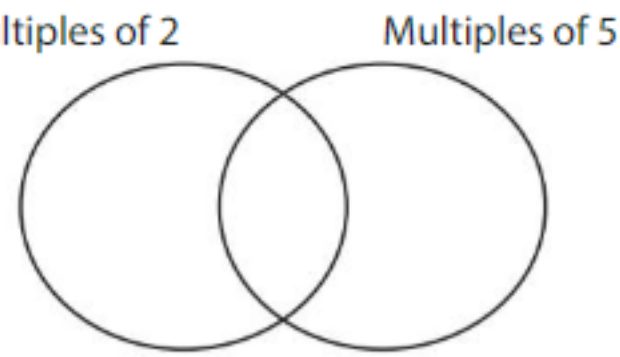
17. MP **Number Sense** Which numbers are multiples of 5?
Think: How do you know?

50 37 63 20 92 12 5 85

18. DIG DEEPER! Use each number to complete the Venn diagram.

4 10 14 20 12

15 35 48 6 5



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English Spanish

Think and Grow: Modeling Real Life

A summer camp is in session 5 days each week for 8 weeks. Each day, 1 camper is chosen to lead the camp song. There are 35 campers. Can each camper lead the camp song?

Multiplication equation:

Each camper _____ lead the camp song.

Show and Grow

19. Your teacher has 5 packs of spinning toys. There are 5 toys in each pack. There are 27 students in your class. Does every student get a spinning toy?

20. You recycle 9 bottles and receive 5¢ for each bottle. You spend 25¢ on a pack of gum. How many cents do you have left?

DIG DEEPER! How many more bottles do you need to recycle to buy another pack of gum?

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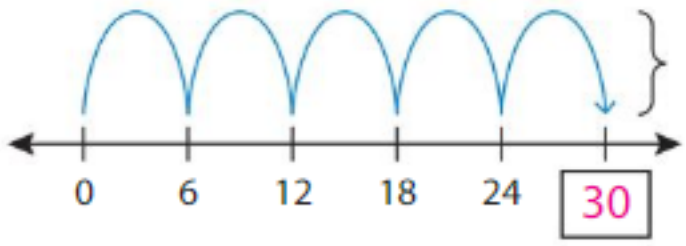
English Spanish

Name _____

Homework & Practice 2.2

Learning Target: Multiply by 5.

Example Find 5×6.

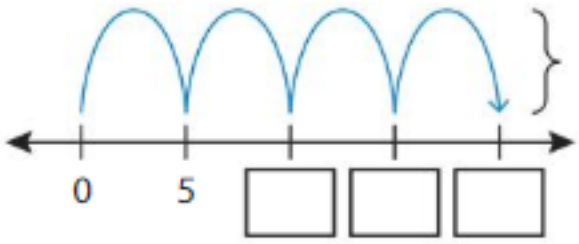


5 jumps of 6

$5 \times 6 =$ 30 or $\begin{array}{r} 5 \\ \times\ 6 \\ \hline 30 \end{array}$

Complete the model and the equation.

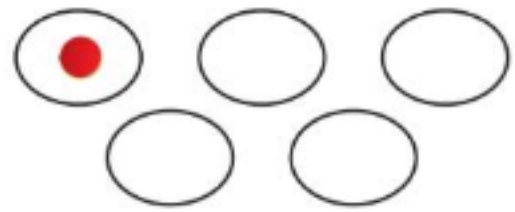
1.



_____ jumps of 5

_____ × _____ = _____

2. 5 groups of 1



_____ × _____ = _____

Find the product.

3. $\begin{array}{r} 5 \\ \times\ 3 \\ \hline \end{array}$

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

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

6. $\begin{array}{r} 5 \\ \times\ 2 \\ \hline \end{array}$

7. $\begin{array}{r} 5 \\ \times\ 9 \\ \hline \end{array}$

8. $\begin{array}{r} 5 \\ \times\ 7 \\ \hline \end{array}$

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

10. $\begin{array}{r} 5 \\ \times\ 6 \\ \hline \end{array}$

Find the missing factor.

11. $5 \times$ _____ $= 20$

12. $45 = 5 \times$ _____

13. _____ $\times 5 = 15$

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English Spanish

14. There are 8 teams in a basketball tournament. Each team has 5 players. How many players are in the tournament?

15. MP **Reasoning** Newton has some nickels. He says they have a total value of 14 cents. Explain how you know that Newton is incorrect.

16. MP **Number Sense** Tell whether the number is a multiple of 2, 5, or both. Explain.

25

16

17. **Modeling Real Life** A firefighter visits 5 houses. Each house has 3 smoke detectors that need a new battery. She has 18 batteries. Does every smoke detector get a new battery?

18. **Modeling Real Life** Descartes earns $5 for each lawn that he mows. He mows 7 lawns. He spends $20 on a video game. How much money does he have left?

DIG DEEPER! How many more lawns does Descartes have to mow to buy another video game?

Review & Refresh

19. Count by tens.

_____, 20, _____, 40, _____, _____, 70, _____, _____, _____

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English Spanish

Name _____

Multiply by 10 2.3

Learning Target: Multiply by 10.

Success Criteria:

- I can use a model to multiply by 10.
- I can find the product of a number and 10.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7
MAFS.3.OA.4.9

Explore and Grow

Model 6×10 on the tape diagram.

$6 \times 10 =$ _____

MP **Structure** How can you use the model to find 7×10?

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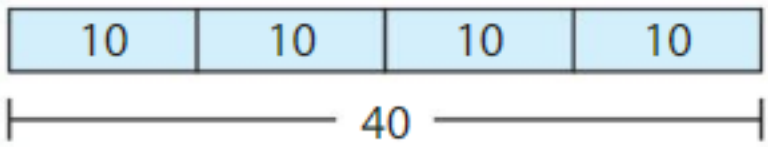
English Spanish

Think and Grow: Multiply by 10

Example Find 4×10.

Model four groups of ten.



$10 + 10 + 10 + 10 =$ ____

4

$4 \times 10 =$ ____ or $\times$ 10

□

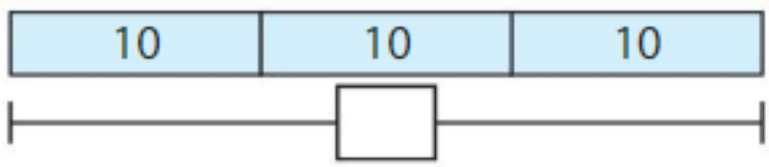
Example Complete the table and the statements.

10s Facts	
$1 \times 10 =$ ____	$6 \times 10 =$ ____
$2 \times 10 =$ ____	$7 \times 10 =$ ____
$3 \times 10 =$ ____	$8 \times 10 =$ ____
$4 \times 10 =$ ____	$9 \times 10 =$ ____
$5 \times 10 =$ ____	$10 \times 10 =$ ____

- Multiples of 10 end in ____.
- A number times 10 is always an _____ number.

Show and Grow

1. Complete the model and the equations.



____ + ____ + ____ = ____

____ × ____ = ____

Find the product.

2. $8 \times 10 =$ ____

3. $10 \times 5 =$ ____

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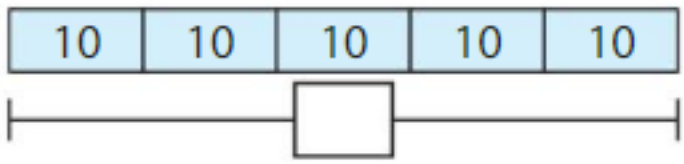
English Spanish

Name _____

Apply and Grow: Practice

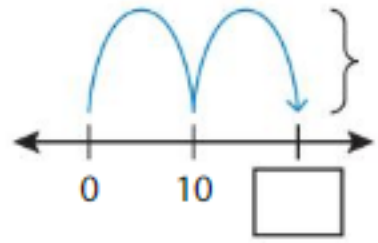
Complete the model and the equation.

4.



_____ × _____ = _____

5.



_____ jumps of 10

_____ × _____ = _____

Find the product.

6. 4 × 10

7. 10 × 10

8. 10 × 7

9. 9 × 10

10. 6 × 10

11. 2 × 10

12. 10 × 3

13. 10 × 1

Tell whether the product is *even* or *odd*.

14. 6 × 2 _____

15. 5 × 3 _____

16. 8 × 10 _____

17. 5 × 10 _____

18. 10 × 7 _____

19. 5 × 7 _____

20. There are 10 millimeters in 1 centimeter. The width of a cell phone is 6 centimeters. What is the width of the phone in millimeters?

21. MP **Patterns** Complete the table using the words *even* or *odd*.

×	2	5	10
even number			
odd number			

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English Spanish

Think and Grow: Modeling Real Life

Newton has 8 dimes. Descartes has 75¢. Who has more money?

Multiplication equation:

_____ has more money.

Show and Grow

22. You have 10 nickels. Your friend has 46¢. Who has more money?

23. You have 34 trading cards. You buy 3 packs of cards. Each pack has 10 cards. How many trading cards do you have now?

24. Your teacher has 10 calculators. Each calculator uses 4 batteries. The batteries come in packs of 10. How many packs of batteries does your teacher buy? Explain.

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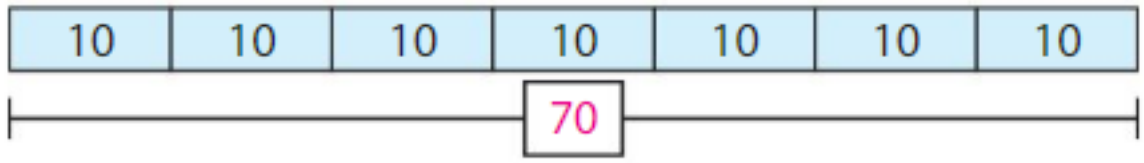
English Spanish

Name _____

Homework & Practice 2.3

Learning Target: Multiply by 10.

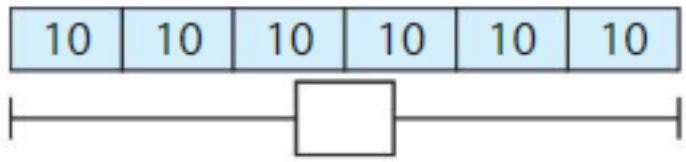
Example Find 7×10.



$7 \times 10 =$ 70 or $\begin{array}{r} 7 \\ \times\ 10 \\ \hline 70 \end{array}$

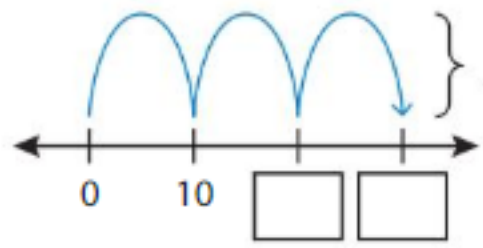
Complete the model and the equation.

1.



_____ × _____ = _____

2.



_____ jumps of 10

_____ × _____ = _____

Find the product.

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

4. $\begin{array}{r} 8 \\ \times\ 10 \\ \hline \end{array}$

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

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

7. $\begin{array}{r} 10 \\ \times\ 9 \\ \hline \end{array}$

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

9. $\begin{array}{r} 10 \\ \times\ 1 \\ \hline \end{array}$

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

Find the missing factor.

11. $10 \times$ _____ $= 90$

12. $60 = 10 \times$ _____

13. _____ $\times 10 = 70$

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English Spanish

14. **Structure** You buy a thank-you card for $1. You pay using all dimes. How many dimes do you use?

15. **Number Sense** In bowling, knocking down all 10 pins at once is called a *strike*. You roll strikes in your first two turns and knock down 4 pins in your third turn. How many pins do you knock down in all?

16. **Reasoning** Ten years is called a *decade*. Your neighbor is 70 years old. For how many decades has he been alive? Explain.

17. **Modeling Real Life** You have 2 dimes. Your friend has 24¢. Who has more money?

18. **Modeling Real Life** Your teacher has 35 balloons. She buys 4 packs of balloons. Each pack has 10 balloons. How many balloons does she have now?

Review & Refresh

Find the difference.

19.
$$\begin{array}{r} 489 \\ -\ 187 \\ \hline \end{array}$$

20.
$$\begin{array}{r} 625 \\ -\ 297 \\ \hline \end{array}$$

21.
$$\begin{array}{r} 951 \\ -\ 682 \\ \hline \end{array}$$

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English Spanish

Name _____

Multiply by 0 or 1

2.4

Learning Target: Use properties to multiply by 0 or 1.

Success Criteria:

- I can explain the multiplication properties of 0 and 1.
- I can find the product of a number and 0.
- I can find the product of a number and 1.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.5
MAFS.3.OA.3.7
MAFS.3.OA.4.9

Explore and Grow

Draw an array to find the products.

$5 \times 3 =$ _____

$5 \times 2 =$ _____

$5 \times 1 =$ _____

What pattern do you see?

MP **Repeated Reasoning** How can you use the pattern to find 5×0?

$5 \times 0 =$ _____

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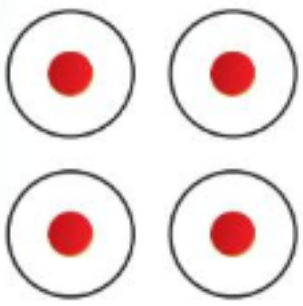
English Spanish

Think and Grow: The Multiplication Properties of 0 and 1

Multiplication Property of Zero: The product of any number and 0 is 0.

Multiplication Property of One: The product of any number and 1 is that number.

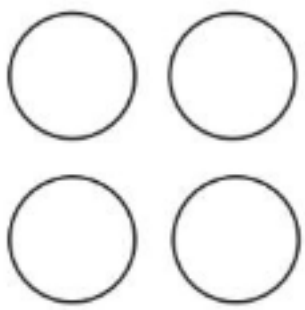
Example There are 4 groups with 1 counter in each group. How many counters are there in all?



4 groups of 1

$4 \times 1 =$ _____ or $\begin{array}{r} 4 \\ \times\ 1 \\ \hline \square \end{array}$

Example There are 4 groups with 0 counters in each group. How many counters are there in all?



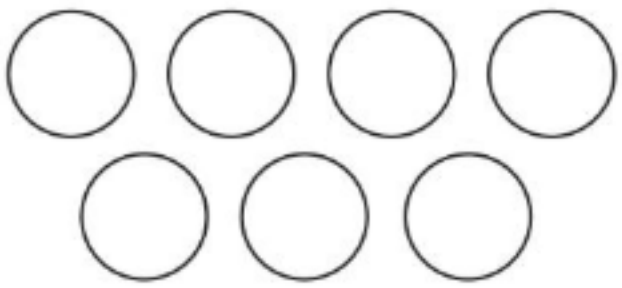
4 groups of 0

$4 \times 0 =$ _____ or $\begin{array}{r} 4 \\ \times\ 0 \\ \hline \square \end{array}$

Show and Grow

Write an equation for the model.

1.



_____ × _____ = _____

2.

_____ × _____ = _____

Find the product.

3. $8 \times 1 =$ _____

4. $6 \times 0 =$ _____

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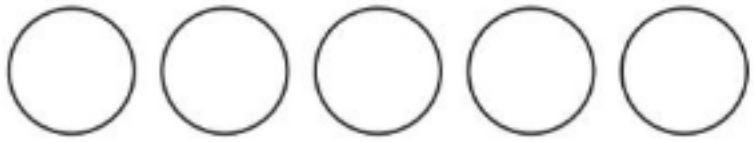
English Spanish

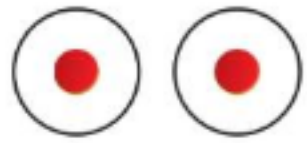
Name _____

Apply and Grow: Practice

Complete the equation for the model.

5. 

_____ × _____ = _____

6. 

_____ × _____ = _____

Find the product.

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

8.
$$\begin{array}{r} 2 \\ \times\ 0 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 0 \\ \times\ 0 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 1 \\ \times\ 9 \\ \hline \end{array}$$

Find the missing factor.

11. $10 \times$ _____ $= 0$

12. _____ $\times 1 = 5$

13. $1 \times$ _____ $= 8$

Compare.

14. $1 \times 4 \bigcirc 6 \times 0$

15. $9 \times 0 \bigcirc 7 \times 0$

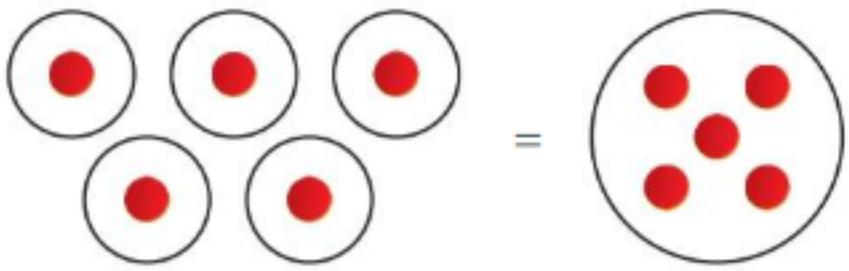
16. $3 \times 1 \bigcirc 6 \times 1$

17. MP **Logic** Complete each statement with *always*, *sometimes*, or *never*.

The product of any number and 0 is _____ 0.

The product of any number and 1 is _____ that number.

18. MP **Structure** Use the model to complete the statements. Which two properties are shown?



_____ groups of _____ = 1 group of _____

_____ × 1 = _____ × _____

_____ = 5

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English Spanish

Think and Grow: Modeling Real Life

There are 4 performers riding unicycles and 3 performers using balance boards in a talent show. How many wheels are used in the talent show?

Unicycle:
1 wheel

Balance board:
no wheels

Multiplication equations:

Addition equation:

There are _____ wheels used in the talent show.

Show and Grow

19. A *solo* is a performance by 1 person. A *duet* is a performance by 2 people. There are 5 students performing solos and 0 students performing duets at a school concert. How many students perform a solo or a duet?

20. A group of 6 adults and 9 students attend a school concert. What is the total cost for the group?

School Concert	
Age	**Ticket Price**
Adult	$1
Student	Free

DIG DEEPER! How much money would it cost the group to attend the concert if the tickets cost $1 for all ages? Explain.

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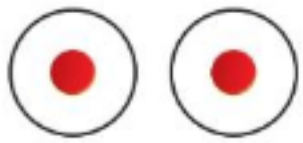
English Spanish

Name _____

Homework & Practice 2.4

Learning Target: Use properties to multiply by 0 and 1.

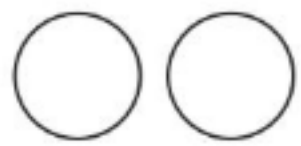
Example There are 2 groups with 1 counter in each group. How many counters are there in all?



2 groups of 1

$2 \times 1 =$ 2 or $\begin{array}{r} 2 \\ \times\ 1 \\ \hline \boxed{2} \end{array}$

Example There are 2 groups with 0 counters in each group. How many counters are there in all?



2 groups of 0

$2 \times 0 =$ 0 or $\begin{array}{r} 2 \\ \times\ 0 \\ \hline \boxed{0} \end{array}$

Complete the equation for the model.

1.

_____ × _____ = _____

2.

_____ × _____ = _____

Find the product.

3. $\begin{array}{r} 10 \\ \times\ 1 \\ \hline \end{array}$

4. $\begin{array}{r} 6 \\ \times\ 0 \\ \hline \end{array}$

5. $\begin{array}{r} 1 \\ \times\ 7 \\ \hline \end{array}$

6. $\begin{array}{r} 0 \\ \times\ 1 \\ \hline \end{array}$

Find the missing factor.

7. _____ × 4 = 0

8. 1 × _____ = 2

9. 9 × _____ = 9

Compare.

10. 0 × 9 ◯ 10 × 0

11. 4 × 1 ◯ 8 × 0

12. 6 × 1 ◯ 1 × 6

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English Spanish

13. **Logic** Which equation is true?

$8 \times 0 \stackrel{?}{=} 8 + 0$ $\quad$ $3 \times 1 \stackrel{?}{=} 3 + 1$

$6 + 1 \stackrel{?}{=} 6 \times 1$ $\quad$ $4 \times 1 \stackrel{?}{=} 4 + 0$

14. **Writing** How are the problems the same? How are they different?

$5 \times 1 = 5$ $\quad$ $5 + 0 = 5$

15. **Modeling Real Life** U.S. presidents can serve two 4-year terms. A president serves the first term, but is not reelected. How many years does the president serve?

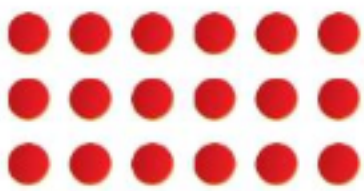
16. **Modeling Real Life** There are 5 adults and 8 children in a group. What is the total cost for the group to ride the Ferris wheel?

Ferris Wheel	
Age	**Ticket Price**
Adult	$1
Child	Free

DIG DEEPER! How much money would it cost the group to ride the Ferris wheel if the tickets cost $1 for all ages? Explain.

Review & Refresh

17. Use the array to fill in the blanks.



_____ rows _____ columns

_____ × _____ = _____

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English Spanish

Name _____

Use the Distributive Property

2.5

Learning Target: Use the Distributive Property to multiply.

Success Criteria:

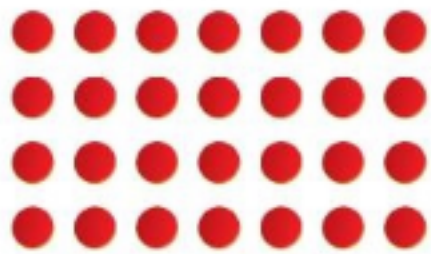
- I can use known facts to find a product.
- I can find the sum of products.
- I can explain how to use the Distributive Property.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.5
MAFS.3.OA.3.7

Explore and Grow

Break apart the 4 × 7 array into two smaller arrays. Write an equation for each new array.



Equation: _____ Equation: _____

MP **Structure** Find the sum of your two products. Compare the sum to the total number of objects in the original array. What do you notice?

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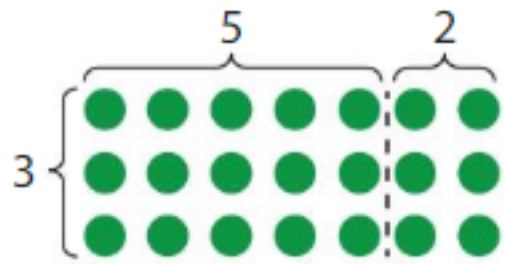
Think and Grow: Using the Distributive Property with Addition

Distributive Property (with addition)

$3 \times (5 + 2) = (3 \times 5) + (3 \times 2)$ $\quad$ $(5 + 2) \times 3 = (5 \times 3) + (2 \times 3)$

Example Use the Distributive Property to find 3×7.

One Way: Rewrite 7 as 5 + 2.



$3 \times 7 = \quad 3 \times (5 + 2)$

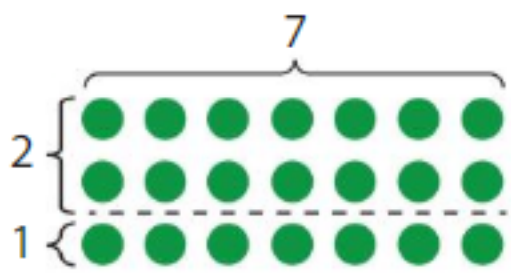
$3 \times 7 = (3 \times 5) + (3 \times 2)$

$3 \times 7 =$ ____ + ____

$3 \times 7 =$ ____

Distribute the 3 to the 5 and the 2.

Another Way: Rewrite 3 as 2 + 1.



$3 \times 7 = \quad (2 + 1) \times 7$

$3 \times 7 = (2 \times 7) + (1 \times 7)$

$3 \times 7 =$ ____ + ____

$3 \times 7 =$ ____

Distribute the 7 to the 2 and the 1.

Show and Grow

1. Use the Distributive Property to show two different ways to find 2×4.

$2 \times 4 = \quad 2 \times (\_\_\_\_ + \_\_\_\_)$

$2 \times 4 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$2 \times 4 =$ ____ + ____

$2 \times 4 =$ ____

$2 \times 4 = \quad (\_\_\_\_ + \_\_\_\_) \times 4$

$2 \times 4 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$2 \times 4 =$ ____ + ____

$2 \times 4 =$ ____

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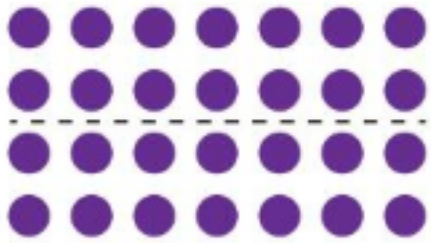
English Spanish

Name _____

Apply and Grow: Practice

Use the Distributive Property to find the product.

2.



$4 \times 7 = (\_\_\_\_ + \_\_\_\_) \times 7$

$4 \times 7 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$4 \times 7 = \_\_\_\_ + \_\_\_\_$

$4 \times 7 = \_\_\_\_$

3.

$6 \times 6 = 6 \times (\_\_\_\_ + \_\_\_\_)$

$6 \times 6 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$6 \times 6 = \_\_\_\_ + \_\_\_\_$

$6 \times 6 = \_\_\_\_$

Use the Distributive Property to fill in the blanks.

4. $7 \times 4 = 7 \times (\_\_\_\_ + 2)$

$= (7 \times \_\_\_\_) + (\_\_\_\_ \times 2)$

$= \_\_\_\_ + \_\_\_\_$

$= \_\_\_\_$

5. $3 \times 6 = (\_\_\_\_ + \_\_\_\_) \times 6$

$= (\_\_\_\_ \times 6) + (\_\_\_\_ \times 6)$

$= \_\_\_\_ + \_\_\_\_$

$= \_\_\_\_$

6. Which One Doesn't Belong? Which expression *cannot* be used to find 3×7?

$3 \times (5 + 2)$ $3 \times (7 + 1)$

$(2 + 1) \times 7$ $(1 + 2) \times 7$

7. Writing Explain how you can use the Distributive Property to find 5×12.

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Think and Grow: Modeling Real Life

A scooter rental center has 6 rows of scooters. There are 9 scooters in each row. Can 50 people each rent a scooter at the same time?

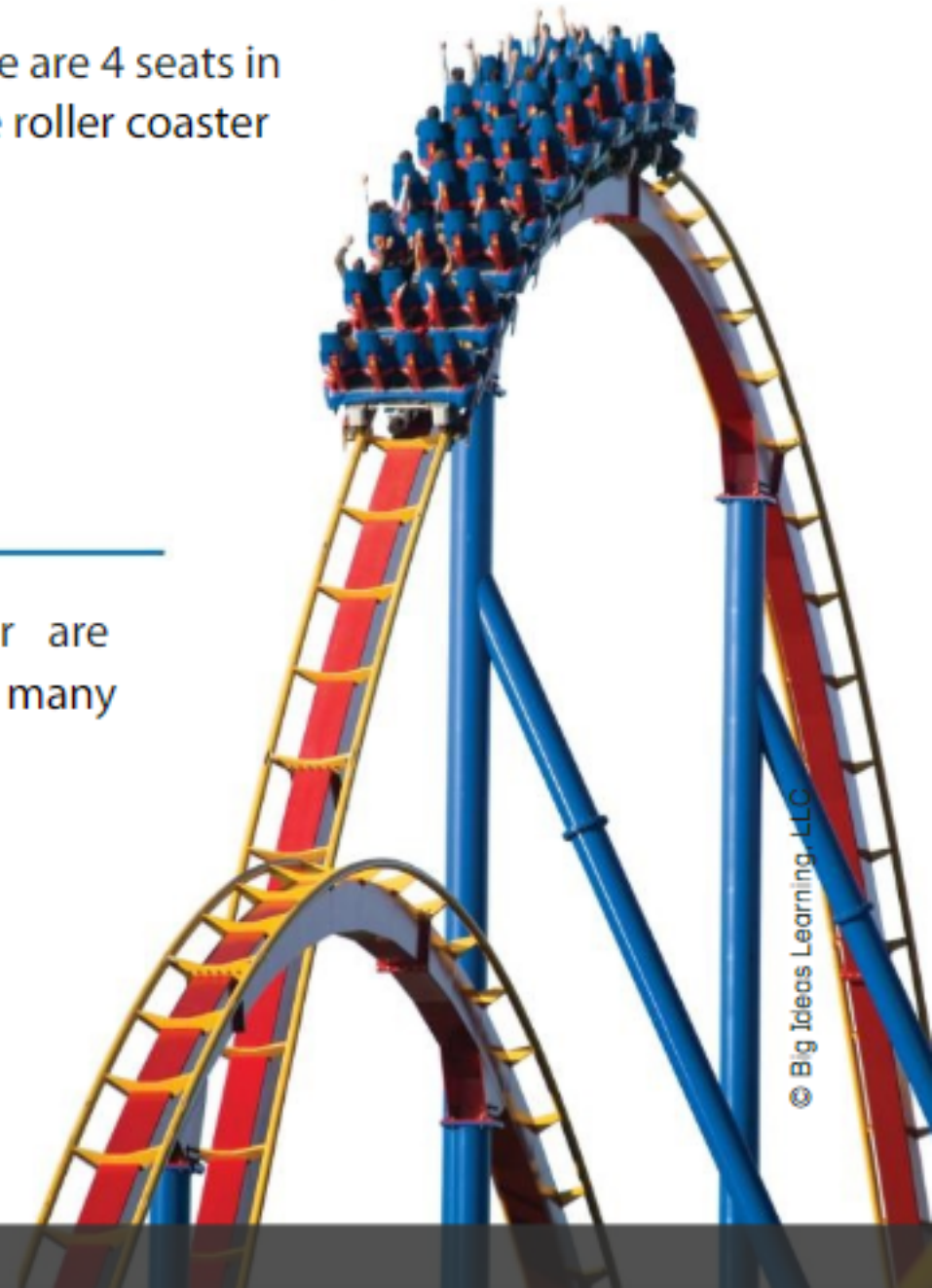
Multiplication expression:

Distributive Property:

50 people _____ each rent a scooter at the same time.

Show and Grow

8. A roller-coaster train has 9 rows of seats. There are 4 seats in each row. Can a group of 38 students ride the roller coaster at the same time?



9. DIG DEEPER! A joke book has 20 pages. Ther are 5 jokes on each page. You read 16 jokes. How many jokes do you have left to read?

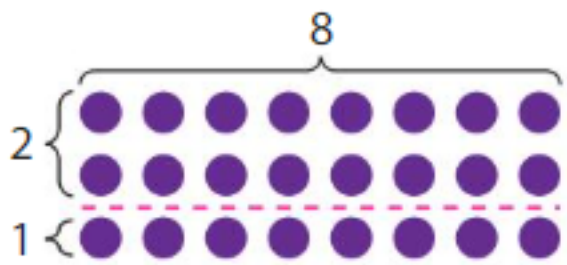
English Spanish

Name _____

Homework & Practice 2.5

Learning Target: Use the Distributive Property to multiply.

Example Use the Distributive Property to find 3×8.



$3 \times 8 = (2 + 1) \times 8$

$3 \times 8 = (2 \times 8) + (1 \times 8)$

$3 \times 8 =$ 16 + 8

$3 \times 8 =$ 24

Use the Distributive Property to find the product.

1.

$4 \times 4 =$ $4 \times (\_\_\_\_ + \_\_\_\_)$

$4 \times 4 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$4 \times 4 =$ $\_\_\_\_ + \_\_\_\_$

$4 \times 4 =$ $\_\_\_\_$

2.

$3 \times 9 = (\_\_\_\_ + \_\_\_\_) \times 9$

$3 \times 9 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$3 \times 9 =$ $\_\_\_\_ + \_\_\_\_$

$3 \times 9 =$ $\_\_\_\_$

Use the Distributive Property to fill in the blanks.

3. $8 \times 6 = \_\_\_\_ \times (5 + \_\_\_\_)$

$= (8 \times 5) + (\_\_\_\_ \times \_\_\_\_)$

$= \_\_\_\_ + \_\_\_\_$

$= \_\_\_\_$

4. $7 \times 7 = 7 \times (5 + \_\_\_\_)$

$= (\_\_\_\_ \times 5) + (7 \times \_\_\_\_)$

$= \_\_\_\_ + \_\_\_\_$

$= \_\_\_\_$

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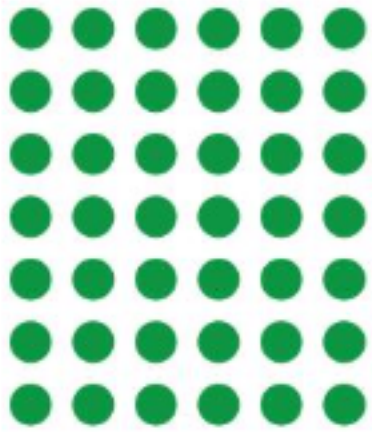
English Spanish

5. MP **Structure** Which ways can you break apart the array?

$(7 \times 5) + (7 \times 1)$ $(7 \times 2) + (7 \times 3)$

$(5 \times 4) + (2 \times 2)$ $(5 \times 6) + (2 \times 6)$



---

6. MP **Logic** Your friend breaks apart an array into a 4×5 array and a 4×2 array. Draw a picture to show the original array.

---

7. DIG DEEPER! Is the equation true? Does it demonstrate the Distributive Property? Explain.

$$4 \times 8 \stackrel{?}{=} (4 \times 5) + (4 \times 2) + (4 \times 1)$$

---

8. **Modeling Real Life** Newton sleeps 9 hours each night. How many hours does he sleep in 1 week?

---

9. **Modeling Real Life** There are 3 lanes of cars sitting at a red light. Each lane has 6 cars in it. How many cars are sitting at the red light?

Review & Refresh

10. Some kids are at an arcade. Seventeen of them leave. There are 39 left. How many kids were at the arcade to start?

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English Spanish

Name _____

Problem Solving: Multiplication 2.6

Learning Target: Use the problem-solving plan to solve word problems.

Success Criteria:

- I can understand a problem.
- I can make a plan to solve.
- I can solve a problem.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Use any strategy to solve.

You, Newton, and Descartes each have 4 marbles. How many marbles are there in all?

There are _____ marbles in all.

MP **Repeated Reasoning** Explain to your partner how you solved the problem.

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Think and Grow: Using the Problem-Solving Plan

Example A bookshelf has 5 shelves. There are 8 comic books on each shelf. You take 3 of them to read. How many comic books are left on the shelves?

Understand the Problem

What do you know?

- There are _____ shelves.
- There are _____ comic books on each shelf.
- You take _____ comic books to read.

What do you need to find?

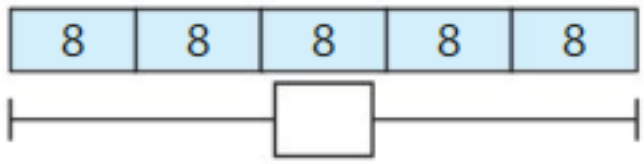
- You need to find how many _____ are left on the shelves after you take _____ of them.

Make a Plan

How will you solve?

- Multiply _____ by _____ to find how many _____ are on the shelves.
- Then subtract _____ from the product.

Solve



$5 \times 8 =$ _____

$8 + 8 + 8 + 8 + 8 =$ _____

_____ $- 3 =$ _____

There are _____ comic books left on the shelves.

Show and Grow

1. A photo album has 10 pages. Each page holds 6 photos. You put 52 photos in the album. How many more photos can you put in the album?

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Name _____

Apply and Grow: Practice

2. Your classroom has 5 groups of desks with 5 desks in each group. There are 22 students in your class. What information do you know that would help you find how many empty desks there are?

3. You buy 2 boxes of cherry gelatin, 4 boxes of strawberry gelatin, and 3 boxes of orange gelatin. Each box contains 2 packets of gelatin. How many packets of gelatin do you buy?

4. A pack of gum has 5 pieces. You have 3 packs of gum and give 4 friends each 1 piece. How many pieces of gum do you have left?

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Think and Grow: Modeling Real Life

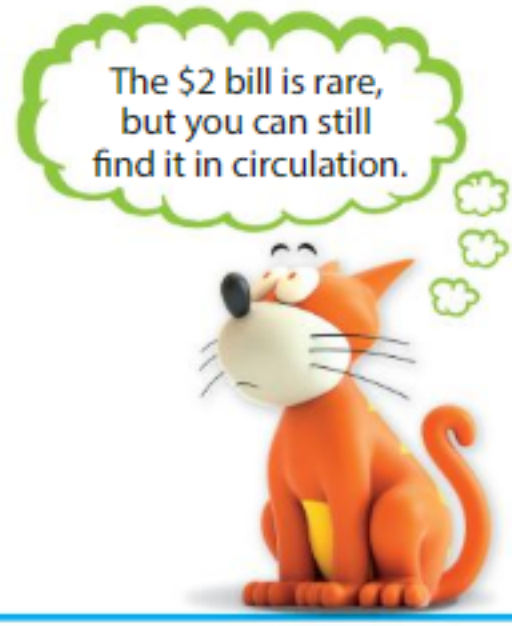
Descartes has four $10 bills, seven $5 bills, and one $2 bill.
How much money does he have in all?

Understand the problem:

Make a plan:

Solve:

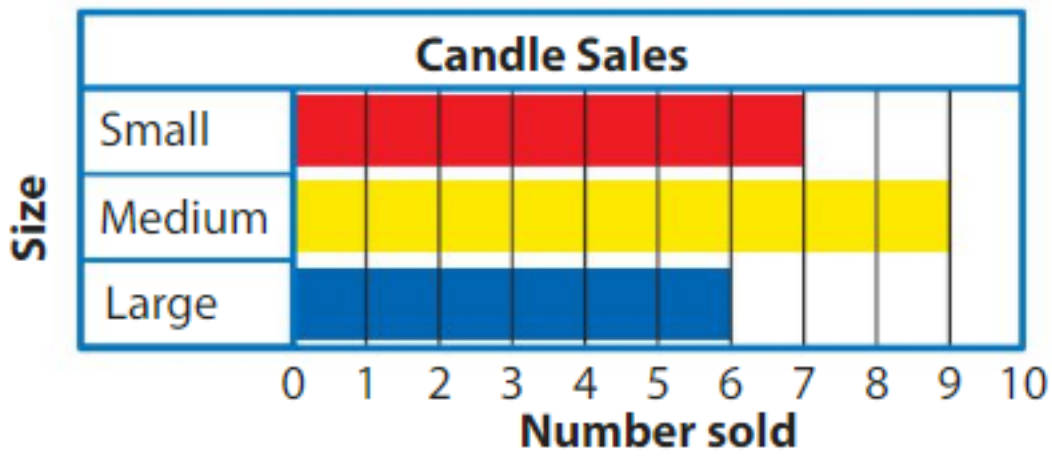
Descartes has $_____.



Show and Grow

5. A teacher has 10 boxes of dry-erase markers. Five boxes have 4 markers each, 2 boxes have 8 markers each, and 3 boxes have 10 markers each. How many dry-erase markers does the teacher have in all?

6. DIG DEEPER! You sell candles as a fundraiser. You earn $2 for each small candle you sell, $5 for each medium candle, and $10 for each large candle. You pay $8 to have the candles shipped. How much money do you raise?



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English Spanish

Name _____

Homework & Practice 2.6

Learning Target: Use the problem-solving plan to solve word problems.

Example You have 6 packages of muffins. There are 2 muffins in each package. You give 3 muffins away. How many muffins are left?

Understand the Problem

What do you know?

- There are 6 packages of muffins.
- There are 2 muffins in each package.
- You give 3 muffins away.

What do you need to find?

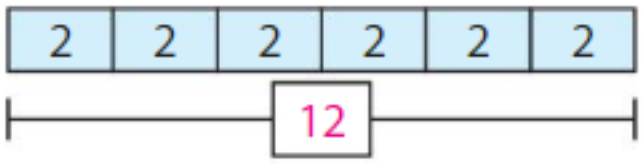
- You need to find how many muffins are left after you give 3 away.

Make a Plan

How will you solve?

- Multiply 6 by 2 to find how many muffins there are in all.
- Then subtract 3 from the product.

Solve



$6 \times 2 = 12$

$2 + 2 + 2 + 2 + 2 + 2 = 12$

$12 - 3 = 9$

There are 9 muffins left.

1. You buy 2 books and 3 magazines. Each book costs $8 and each magazine costs $2. How much money do you spend in all?

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2. In a game, teams earn 10 points for each correct answer and lose 5 points for each incorrect answer. Your team answers 7 questions correctly and 3 questions incorrectly. How many points does your team have?

3. An origami cube requires 3 pieces of orange paper, 2 pieces of yellow paper, and 1 piece of blue paper. You make 5 cubes. How many pieces of paper do you need?

4. **Writing** Write and solve your own word problem that involves multiplication.

5. **Modeling Real Life** A group of students orders 6 small, 5 medium, and 3 large smoothies. The students pay with five $10 bills. How much change do they receive?

Smoothie Prices	
Small	$2
Medium	$4
Large	$5

Review & Refresh

Find the sum.

6.
$$\begin{array}{r} 490 \\ +\ 137 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 625 \\ +\ 297 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 386 \\ +\ 364 \\ \hline \end{array}$$

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English Spanish

Name _____

Performance Task 2

1. Three students make a model of our solar system.

a. Student A buys foam spheres to make the Sun and the planets. He pays with a $10 bill. What is his change?

Item	Cost
Foam sphere	$1
Wooden rod	$1
Bottle of paint	$2
Paintbrush	$1

b. Student B buys wooden rods to attach each planet to the sun. She pays with two $5 bills. What is her change?

c. Student C spends $13 on 3 paintbrushes and some bottles of paint. How many bottles of paint does Student C buy?

d. What is the total cost of the project? If the 3 students divide the cost equally, how much would they each spend?

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Three in a Row: Multiplication

Directions:

1. Players take turns.
2. On your turn, spin both spinners. Multiply the two numbers and cover the product.
3. The first player to get three counters in a row, horizontally, vertically, or diagonally, wins!

Game A

10	4	2
6	5	20
8	50	0

Game B

3	40	50
1	0	30
15	25	10

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Name _____

Chapter Practice 2

2.1 Multiply by 2

Find the product.

1. $\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$

2. $\begin{array}{r} 3 \\ \times\ 2 \\ \hline \end{array}$

3. $\begin{array}{r} 2 \\ \times\ 2 \\ \hline \end{array}$

4. $\begin{array}{r} 2 \\ \times\ 9 \\ \hline \end{array}$

Find the missing factor.

5. $2 \times \_\_\_\_ = 2$

6. $2 \times \_\_\_\_ = 20$

7. $\_\_\_\_ \times 4 = 8$

2.2 Multiply by 5

Find the product.

8. $\begin{array}{r} 5 \\ \times\ 3 \\ \hline \end{array}$

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

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

11. $\begin{array}{r} 5 \\ \times\ 2 \\ \hline \end{array}$

12. MP **Number Sense** Lightning strikes our planet 6 times every second. How many lightning strikes occur in 5 seconds?

2.3 Multiply by 10

Find the product.

13. $\begin{array}{r} 10 \\ \times\ 8 \\ \hline \end{array}$

14. $\begin{array}{r} 10 \\ \times\ 10 \\ \hline \end{array}$

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

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

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2.4 Multiply by 0 and 1

Find the product.

17. $\begin{array}{r} 1 \\ \times\ 6 \\ \hline \end{array}$

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

19. $\begin{array}{r} 1 \\ \times\ 0 \\ \hline \end{array}$

20. $\begin{array}{r} 4 \\ \times\ 1 \\ \hline \end{array}$

Compare.

21. $0 \times 10 \bigcirc 9 \times 0$

22. $2 \times 1 \bigcirc 5 \times 0$

23. $7 \times 1 \bigcirc 1 \times 8$

2.5 Use the Distributive Property

Use the Distributive Property to fill in the blanks.

24. $7 \times 3 = (\_\_\_\_ + 2) \times 3$

$= (\_\_\_\_ \times 3) + (2 \times \_\_\_\_)$

$= \_\_\_\_ + \_\_\_\_$

$= \_\_\_\_$

25. $6 \times 6 = 6 \times (\_\_\_\_ + \_\_\_\_)$

$= (6 \times \_\_\_\_) + (6 \times \_\_\_\_)$

$= \_\_\_\_ + \_\_\_\_$

$= \_\_\_\_$

2.6 Problem Solving: Multiplication

26. You place your trading card collection into an album that has 5 pages. You put 9 cards on each page. Some of the cards are the same, so you give 3 cards to a friend. How many trading cards do you have left?

27. **Modeling Real Life** In a game, you start with ten \$1 bills, five \$5 bills, and two \$10 bills. How much money do you start with in all?

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3 More Multiplication Facts and Strategies

Chapter Learning Target:
Understand multiplication strategies.

Chapter Success Criteria:
- I can define a product.
- I can find the product of two numbers.
- I can make a plan to solve a problem.
- I can solve a problem.

- What is origami?
- You want to make 7 paper cubes. You need 6 sheets of paper to make each cube. How can you find the total number of sheets you need?

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Name _____

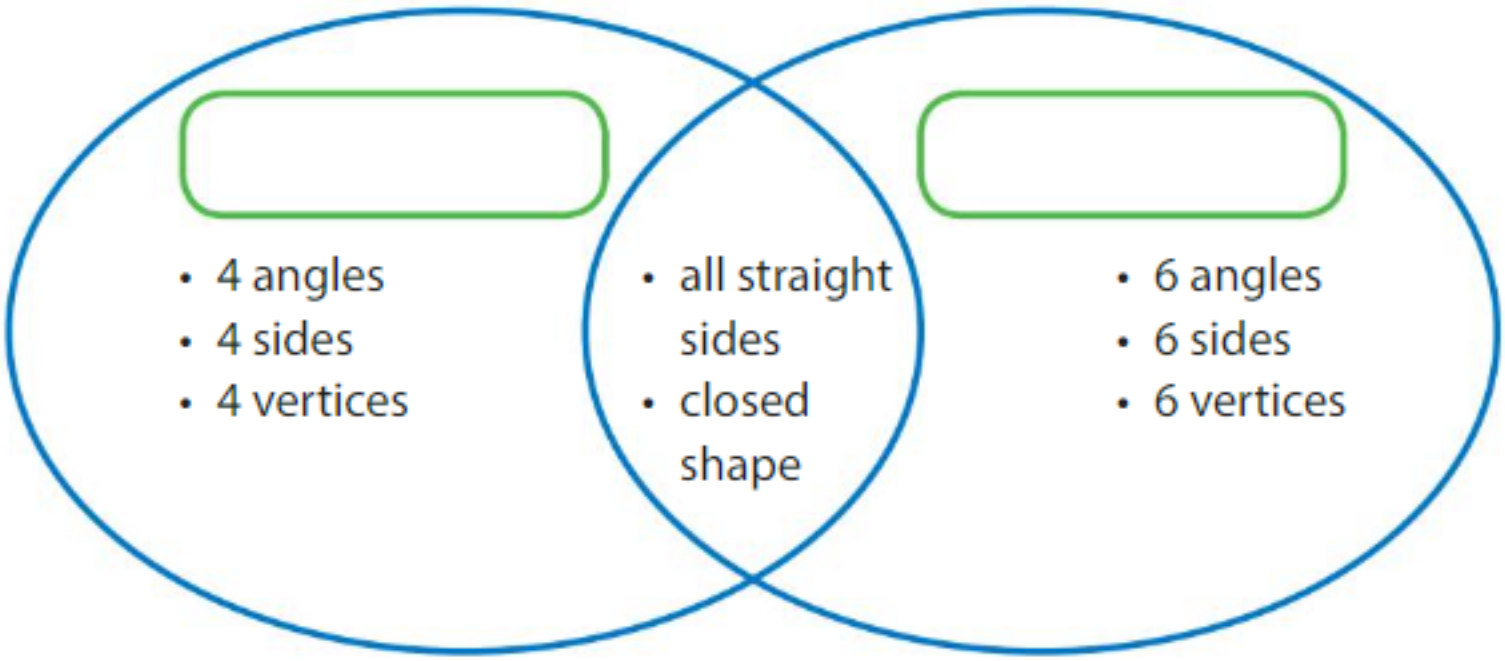
3 Vocabulary

Review Words

hexagon
quadrilateral

Organize It

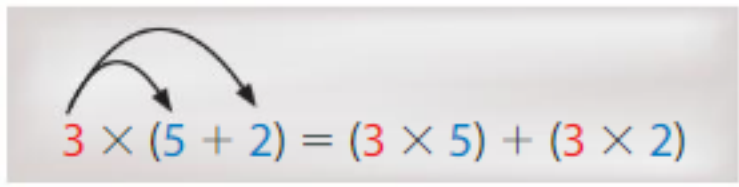
Use the review words to complete the graphic organizer.



Define It

Use your vocabulary cards to match.

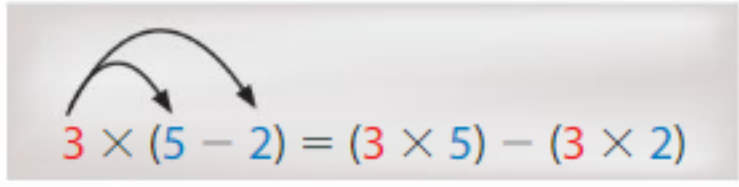
1. Associative Property of Multiplication



2. Distributive Property (with addition)

$2 \times (3 \times 4) = (2 \times 3) \times 4$

3. Distributive Property (with subtraction)



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Chapter 3 Vocabulary Cards

Associative Property of Multiplication

Distributive Property (with addition)

Distributive Property (with subtraction)

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$3 \times (5 + 2) = (3 \times 5) + (3 \times 2)$

$(5 + 2) \times 3 = (5 \times 3) + (2 \times 3)$

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Changing the grouping of factors does not change the product.

$2 \times (3 \times 4) = 24$

$(2 \times 3) \times 4 = 24$

So, $2 \times (3 \times 4) = (2 \times 3) \times 4$.

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$3 \times (5 - 2) = (3 \times 5) - (3 \times 2)$

$(5 - 2) \times 3 = (5 \times 3) - (2 \times 3)$

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English Spanish

Name _____

Multiply by 3 — 3.1

Learning Target: Multiply by 3.

Success Criteria:

- I can use a model to multiply by 3.
- I can use known multiplication facts to multiply by 3.
- I can find the product of a number and 3.

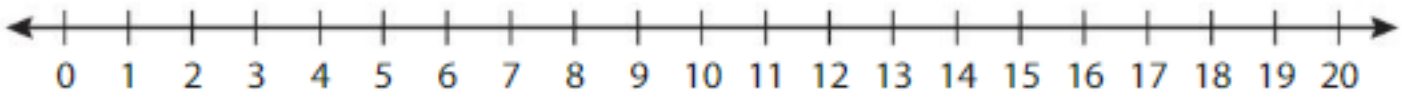
FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Use the number line to find the product.

$4 \times 3 =$ _____



MP **Repeated Reasoning** Explain how you can use the number line to find products greater than 20. Complete the table.

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

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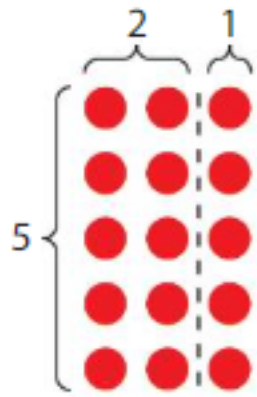
English Spanish

Think and Grow: Multiply by 3

Example Find 5×3.



$5 \times 3 = \quad 5 \times (2 + 1)$ Rewrite 3 as $2 + 1$.

$5 \times 3 = (5 \times 2) + (5 \times 1)$ Distributive Property

$5 \times 3 =$ ____ + ____

$5 \times 3 =$ ____

Show and Grow

Find the product.

1. 6×3

$6 \times 3 = \quad 6 \times (\_\_\_\_ + \_\_\_\_)$

$6 \times 3 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$6 \times 3 = \quad \_\_\_\_ \quad + \quad \_\_\_\_$

$6 \times 3 =$ ____

2. 3×4

$3 \times 4 = \quad (\_\_\_\_ + \_\_\_\_) \times 4$

$3 \times 4 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$3 \times 4 = \quad \_\_\_\_ \quad + \quad \_\_\_\_$

$3 \times 4 =$ ____

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English Spanish

Name _____

Apply and Grow: Practice

Find the product.

3. 2×3

$2 \times 3 =$ $\quad 2 \times (\_\_\_\_ + \_\_\_\_)$

$2 \times 3 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$2 \times 3 =$ $\_\_\_\_ \quad + \quad \_\_\_\_$

$2 \times 3 =$ $\_\_\_\_$

4. 3×7

$3 \times 7 =$ $\quad (\_\_\_\_ + \_\_\_\_) \times 7$

$3 \times 7 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$3 \times 7 =$ $\_\_\_\_ \quad + \quad \_\_\_\_$

$3 \times 7 =$ $\_\_\_\_$

5. $3 \times 8 =$ _____

6. $3 \times 1 =$ _____

7. $3 \times 3 =$ _____

8. $3 \times 5 =$ _____

9.
$$\begin{array}{r} 3 \\ \times\ 6 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 10 \\ \times\ 3 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 4 \\ \times\ 3 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 3 \\ \times\ 9 \\ \hline \end{array}$$

Compare.

13. $8 \times 3 \bigcirc 3 \times 6$

14. $3 \times 1 \bigcirc 3 \times 10$

15. $3 \times 0 \bigcirc 0 \times 3$

16. A baseball game has 9 innings. Each team gets 3 outs every inning. How many outs does each team get in one game?

17. **YOU BE THE TEACHER** Your friend says 23 is a multiple of 3 because there is a 3 in the ones place. Is your friend correct? Explain.

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English Spanish

Think and Grow: Modeling Real Life

Ten people want to ride a camel. There are 3 camels. Two people can ride on each camel. Are there enough camels for all of the people to ride at the same time?

Multiplication equation:

There _____ enough camels for all of the people.

Show and Grow

18. You want to give each of your 10 friends a sticker. You buy 4 sheets. Each sheet has 3 stickers. Do you have enough stickers?

19. DIG DEEPER! You buy 2 heads of cauliflower and 5 ears of corn. How much money do you spend?

Farm Stand Prices	
Cauliflower	$3
Broccoli	$3
Corn	$1

You buy 3 heads of broccoli and 1 head of cauliflower. How much money do you spend?

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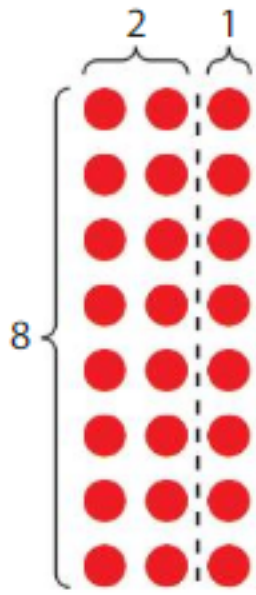
English Spanish

Name _____

Homework & Practice 3.1

Learning Target: Multiply by 3.

Example Find 8×3.



$8 \times 3 = 8 \times (2 + 1)$

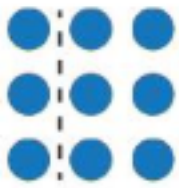
$8 \times 3 = (8 \times 2) + (8 \times 1)$

$8 \times 3 = 16 + 8$

$8 \times 3 = 24$

Find the product.

1. 3×3



$3 \times 3 = 3 \times (\_\_\_ + \_\_\_)$

$3 \times 3 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$3 \times 3 = \_\_\_ + \_\_\_$

$3 \times 3 = \_\_\_$

2. 3×9

$3 \times 9 = (\_\_\_ + \_\_\_) \times 9$

$3 \times 9 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$3 \times 9 = \_\_\_ + \_\_\_$

$3 \times 9 = \_\_\_$

3. $3 \times 2 = \_\_\_$

4. $3 \times 5 = \_\_\_$

5. $7 \times 3 = \_\_\_$

6. $0 \times 3 = \_\_\_$

7.
$$\begin{array}{r} 3 \\ \times\ 4 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 3 \\ \times\ 10 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 6 \\ \times\ 3 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 3 \\ \times\ 1 \\ \hline \end{array}$$

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English Spanish

Compare.

11. $0 \times 3 \bigcirc 3 \times 3$

12. $8 \times 3 \bigcirc 7 \times 3$

13. $18 \bigcirc 6 \times 3$

14. A Russian guitar, called a *balalaika*, has 3 strings. A music teacher is replacing the strings on 5 balalaikas. How many strings does the teacher need?

15. MP **Number Sense** Circle the multiples of 3.

12 14 15 5 21 25

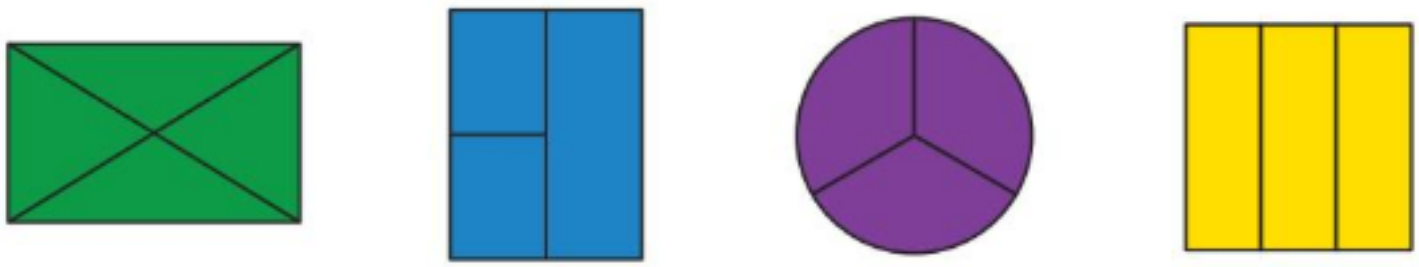
16. **Modeling Real Life** You need 24 tennis balls. You buy 6 packs of 3 tennis balls. Do you have enough tennis balls?

17. DIG DEEPER! Newton buys 3 packs of plates and 3 packs of cups. How much money does he spend?

Party Supply Packs	
Cups	$2
Plates	$4
Napkins	$1

Review & Refresh

18. Which shapes show thirds?



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English Spanish

Name _____

Multiply by 4 3.2

Learning Target: Multiply by 4.

Success Criteria:

- I can use a model to multiply by 4.
- I can use known multiplication facts to multiply by 4.
- I can find the product of a number and 4.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Use the tape diagram to find the product.

$3 \times 4 =$ _____

MP **Repeated Reasoning** Explain how you can use a tape diagram to find the missing products in the table. Complete the table.

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

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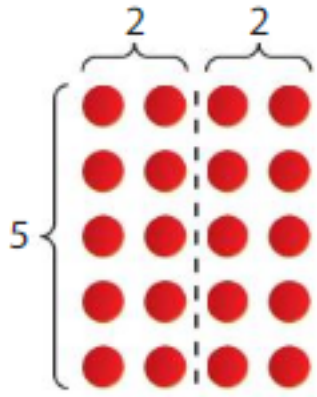
English Spanish

Think and Grow: Multiply by 4

Example Find 5×4.



So, the product of 5×4 is double the product of 5×2.

$5 \times 4 = 5 \times (2 + 2)$ Rewrite 4 as $2 + 2$.

$5 \times 4 = (5 \times 2) + (5 \times 2)$ Distributive Property

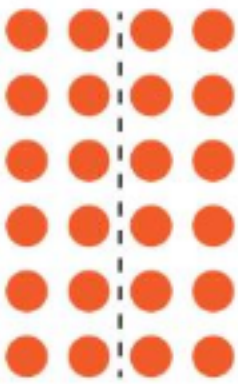
$5 \times 4 =$ ____ + ____

$5 \times 4 =$ ____

Show and Grow

Find the product.

1. 6×4



$6 \times 4 = 6 \times (\_\_\_\_ + \_\_\_\_)$

$6 \times 4 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$6 \times 4 =$ ____ + ____

$6 \times 4 =$ ____

2. 4×8

$4 \times 8 = (\_\_\_\_ + \_\_\_\_) \times 8$

$4 \times 8 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$4 \times 8 =$ ____ + ____

$4 \times 8 =$ ____

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English Spanish

Name _____

Apply and Grow: Practice

Find the product.

3. 4×4

$4 \times 4 =$ $4 \times (\_\_\_\_ + \_\_\_\_)$

$4 \times 4 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$4 \times 4 =$ $\_\_\_\_ + \_\_\_\_$

$4 \times 4 =$ $\_\_\_\_$

4. 4×2

$4 \times 2 =$ $(\_\_\_\_ + \_\_\_\_) \times 2$

$4 \times 2 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$4 \times 2 =$ $\_\_\_\_ + \_\_\_\_$

$4 \times 2 =$ $\_\_\_\_$

5. $4 \times 5 =$ _____

6. $4 \times 7 =$ _____

7. $4 \times 6 =$ _____

8. $4 \times 1 =$ _____

9.
$$\begin{array}{r} 10 \\ \times\ 4 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 3 \\ \times\ 4 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 8 \\ \times\ 4 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 4 \\ \times\ 9 \\ \hline \end{array}$$

Find the missing factor.

13. $4 \times \_\_\_\_ = 0$

14. $\_\_\_\_ \times 4 = 40$

15. $4 = \_\_\_\_ \times 4$

16. MP **Number Sense** You exchange some dollar bills for quarters. How many quarters might you receive?

40	18	24	36	34
22	12	38	16	26

17. **Writing** Explain how you can use 2×3 to find 4×3.

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English Spanish

Think and Grow: Modeling Real Life

The graph shows the number of cars scheduled to get a new set of tires installed. How many new tires are installed on the busiest day?

Cars Getting New Tires									
Monday	◯	◯	◯	◯	◯	◯			
Tuesday	◯	◯	◯	◯	◯	◯	◯		
Wednesday	◯	◯	◯						
Thursday	◯	◯	◯	◯	◯	◯	◯	◯	
Friday	◯	◯	◯	◯					

Each ◯ = 1 car.

What is the busiest day?

Multiplication equation:

_____ new tires are installed on the busiest day.

Show and Grow

18. Use the graph above. How many new tires are installed on the least busy day?

19. **DIG DEEPER!** Descartes is packing bags for party favors. Each bag needs 1 container of bubbles, 5 stickers, and 3 balloons. How many of each item does Descartes need to make 4 bags?

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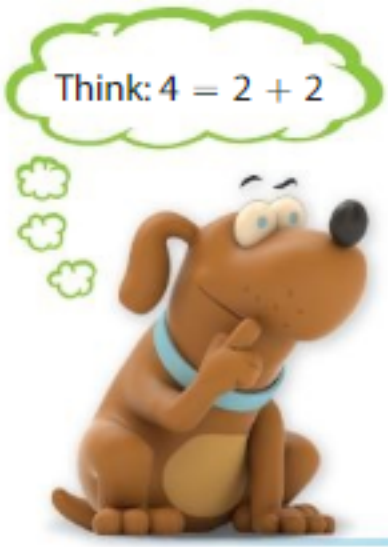
English Spanish

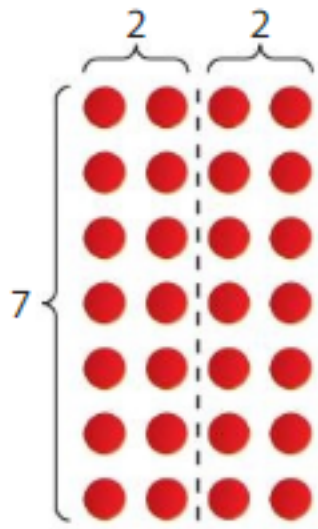
Name _____

Homework & Practice 3.2

Learning Target: Multiply by 4.

Example Find 7×4.





$7 \times 4 = 7 \times (2 + 2)$

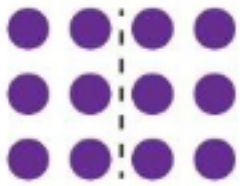
$7 \times 4 = (7 \times 2) + (7 \times 2)$

$7 \times 4 = 14 + 14$

$7 \times 4 = 28$

Find the product.

1. 3×4



$3 \times 4 = 3 \times (\_\_\_ + \_\_\_)$

$3 \times 4 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$3 \times 4 = \_\_\_ + \_\_\_$

$3 \times 4 = \_\_\_$

2. 4×9

$4 \times 9 = (\_\_\_ + \_\_\_) \times 9$

$4 \times 9 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$4 \times 9 = \_\_\_ + \_\_\_$

$4 \times 9 = \_\_\_$

3. $8 \times 4 = \_\_\_$

4. $4 \times 4 = \_\_\_$

5. $10 \times 4 = \_\_\_$

6. $4 \times 6 = \_\_\_$

7.
$$\begin{array}{r} 4 \\ \times\ 5 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 0 \\ \times\ 4 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 1 \\ \times\ 4 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 2 \\ \times\ 4 \\ \hline \end{array}$$

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Find the missing factor.

11. $10 \times \_\_\_\_ = 40$

12. $\_\_\_\_ \times 1 = 4$

13. $8 = \_\_\_\_ \times 4$

---

14. A string quartet has 4 musicians. Each musician's instrument has 4 strings. How many total strings are there in a string quartet?

---

15. **Which One Doesn't Belong?** Which one does *not* belong with the other three?

4×6

6×4

$(2 \times 3) + (2 \times 3)$

$(2 \times 6) + (2 \times 6)$

---

16. **Modeling Real Life** The tally chart shows the number of tables a carpenter makes each day. Each table has 4 legs. How many legs does the carpenter make on the busiest day?

Tables Made	
Monday	𝍸 𝍸
Tuesday	𝍸 |||
Wednesday	||||

---

17. **DIG DEEPER!** Newton is packing lunches. Each lunch needs 1 sandwich, 2 celery sticks, 3 carrot sticks, and 4 strawberries. How many of each item does Newton need to make 4 lunches?

Review & Refresh

Write the number in expanded form and word form.

18. 837

____ + ____ + ____

_____

19. 954

____ + ____ + ____

_____

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English Spanish

Name _____

Multiply by 6 3.3

Learning Target: Multiply by 6.

Success Criteria:

- I can use a model to multiply by 6.
- I can use known multiplication facts to multiply by 6.
- I can find the product of a number and 6.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Use equal groups to find the product. Draw your model.

$4 \times 6 =$ _____

MP **Repeated Reasoning** Explain how you can use equal groups to multiply. Complete the table.

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

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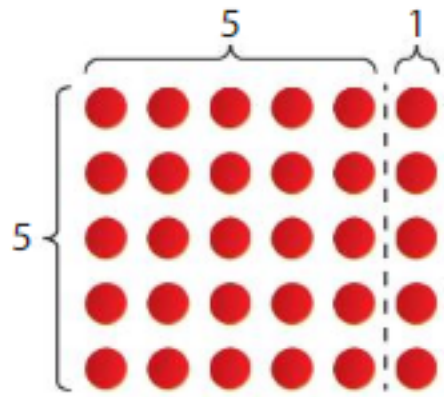
English Spanish

Think and Grow: Multiply by 6

Example Find 5×6.



$5 \times 6 = \quad 5 \times (5 + 1)$ Rewrite 6 as $5 + 1$.

$5 \times 6 = (5 \times 5) + (5 \times 1)$ Distributive Property

$5 \times 6 =$ ____ + ____

$5 \times 6 =$ ____

Show and Grow

Find the product.

1. 3×6

$3 \times 6 = \quad 3 \times (\_\_\_\_ + \_\_\_\_)$

$3 \times 6 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$3 \times 6 =$ ____ + ____

$3 \times 6 =$ ____

2. 6×5

$6 \times 5 = \quad (\_\_\_\_ + \_\_\_\_) \times 5$

$6 \times 5 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$6 \times 5 =$ ____ + ____

$6 \times 5 =$ ____

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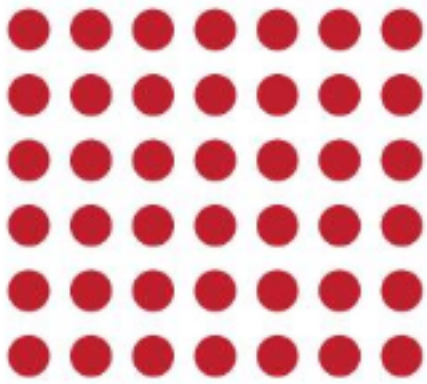
English Spanish

Name _____

Apply and Grow: Practice

Find the product.

3. 6×7



$6 \times 7 =$ (____ + ____) × 7

$6 \times 7 =$ (____ × ____) + (____ × ____)

$6 \times 7 =$ ____ + ____

$6 \times 7 =$ ____

4. 4×6

$4 \times 6 =$ 4 × (____ + ____)

$4 \times 6 =$ (____ × ____) + (____ × ____)

$4 \times 6 =$ ____ + ____

$4 \times 6 =$ ____

5. $8 \times 6 =$ ____

6. $7 \times 6 =$ ____

7. $6 \times 0 =$ ____

8. $6 \times 4 =$ ____

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

10.
$$\begin{array}{r} 6 \\ \times\ 1 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 2 \\ \times\ 6 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 9 \\ \times\ 6 \\ \hline \end{array}$$

Compare.

13. 8×6 ◯ 48

14. 6×0 ◯ 10×6

15. 6×1 ◯ 6×3

16. There are 9 volleyball teams in a tournament. There are 6 players on each team. How many volleyball players are in the tournament?

17. **YOU BE THE TEACHER** Your friend says that all multiples of 3 are also multiples of 6. Is your friend correct? Explain.

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English Spanish

Think and Grow: Modeling Real Life

You have 5 apples. You cut each apple into 8 slices. You have 6 oranges and cut each orange into 4 slices. Do you have more apple slices or orange slices?

Multiplication equations:

Compare: ____ ○ ____

You have more _____ slices.

Show and Grow

18. Your friend makes 6 bracelets each day for 7 days. Your cousin makes 10 bracelets each day for 3 days. Who makes fewer bracelets?

19. You draw 6 octagons. How many sides do you draw?

20. You draw 9 hexagons. How many sides do you draw?

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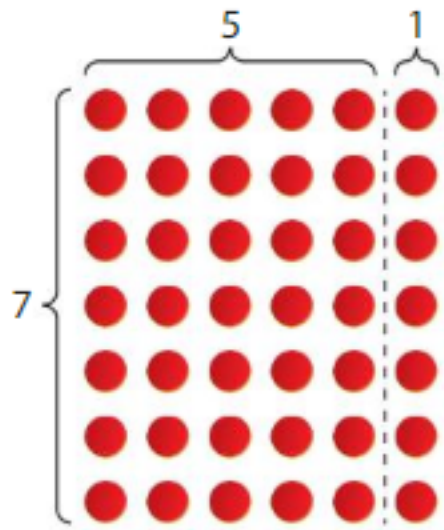
English Spanish

Name _____

Homework & Practice 3.3

Learning Target: Multiply by 6.

Example Find 7×6.



$7 \times 6 = \quad 7 \times (5 + 1)$

$7 \times 6 = (7 \times 5) + (7 \times 1)$

$7 \times 6 = \underline{35} + \underline{7}$

$7 \times 6 = \quad \underline{42}$

Find the product.

1. 2×6

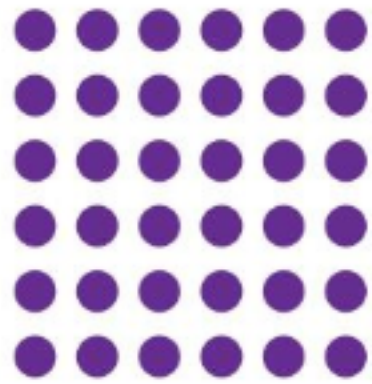
$2 \times 6 = \quad 2 \times (\_\_\_ + \_\_\_)$

$2 \times 6 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$2 \times 6 = \quad \_\_\_ \quad + \quad \_\_\_$

$2 \times 6 = \quad \_\_\_$

2. 6×6



$6 \times 6 = \quad (\_\_\_ + \_\_\_) \times 6$

$6 \times 6 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$6 \times 6 = \quad \_\_\_ \quad + \quad \_\_\_$

$6 \times 6 = \quad \_\_\_$

3. $9 \times 6 =$ _____

4. $5 \times 6 =$ _____

5. $6 \times 3 =$ _____

6. $4 \times 6 =$ _____

7.
$$\begin{array}{r} 8 \\ \times\ 6 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 6 \\ \times\ 0 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 6 \\ \times\ 1 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 10 \\ \times\ 6 \\ \hline \end{array}$$

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English Spanish

Compare.

11. $4 \times 6 \bigcirc 6 \times 6$ | **12.** $6 \times 5 \bigcirc 4 \times 5$ | **13.** $42 \bigcirc 6 \times 7$

14. There are 6 faces on a standard die. How many faces are on 5 dice?

15. DIG DEEPER! You have a muffin tin with 6 cups. You want to bake 36 muffins. How many times must you use the muffin tin?

16. **Modeling Real Life** You practice the saxophone 1 hour in the morning and 2 hours at night each day. How many hours do you practice in 6 days?

17. **Modeling Real Life** You want to make 6 pentagons using toothpicks. How many toothpicks do you need?

Review & Refresh

18. Find the total value.

Total value: _____

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English Spanish

Name _____

Multiply by 7 3.4

Learning Target: Multiply by 7.

Success Criteria:

- I can use a model to multiply by 7.
- I can use known multiplication facts to multiply by 7.
- I can find the product of a number and 7.

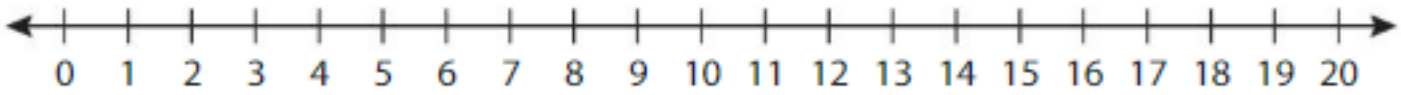
FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Use the number line to find the product.

$2 \times 7 =$ _____



MP **Repeated Reasoning** Complete the table. Explain how you found the missing products.

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

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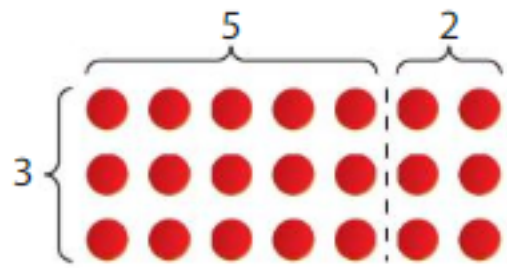
English Spanish

Think and Grow: Multiply by 7

Example Find 3×7.



$3 \times 7 = 3 \times (5 + 2)$ Rewrite 7 as $5 + 2$.

$3 \times 7 = (3 \times 5) + (3 \times 2)$ Distributive Property

$3 \times 7 =$ ____ + ____

$3 \times 7 =$ ____

Show and Grow

Find the product.

1. 4×7

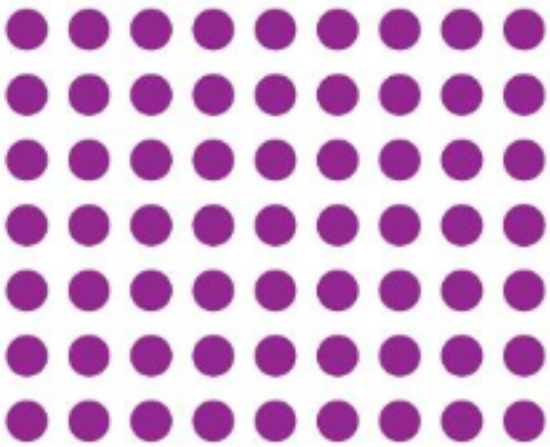
$4 \times 7 = 4 \times (\_\_\_\_ + \_\_\_\_)$

$4 \times 7 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$4 \times 7 =$ ____ + ____

$4 \times 7 =$ ____

2. 7×9



$7 \times 9 = (\_\_\_\_ + \_\_\_\_) \times 9$

$7 \times 9 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$7 \times 9 =$ ____ + ____

$7 \times 9 =$ ____

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English Spanish

Name _____

Apply and Grow: Practice

Find the product.

3. 7×7

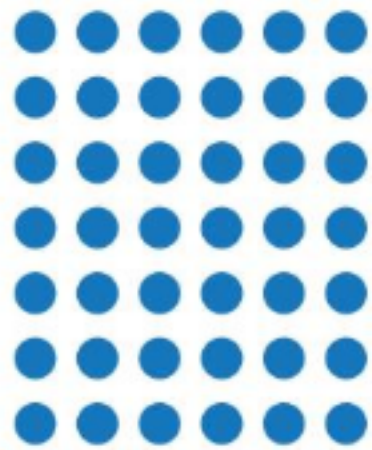
$7 \times 7 =$ $\quad 7 \times (\_\_\_\_ + \_\_\_\_)$

$7 \times 7 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$7 \times 7 =$ $\_\_\_\_ \quad + \quad \_\_\_\_$

$7 \times 7 =$ $\_\_\_\_$

4. 7×6



$7 \times 6 =$ $\quad (\_\_\_\_ + \_\_\_\_) \times 6$

$7 \times 6 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$7 \times 6 =$ $\_\_\_\_ \quad + \quad \_\_\_\_$

$7 \times 6 =$ $\_\_\_\_$

5. $7 \times 5 =$ _____

6. $7 \times 1 =$ _____

7. $2 \times 7 =$ _____

8. $3 \times 7 =$ _____

9.
$$\begin{array}{r} 10 \\ \times\ 7 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 7 \\ \times\ 0 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 8 \\ \times\ 7 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 7 \\ \times\ 9 \\ \hline \end{array}$$

Find the missing factor.

13. $7 \times \_\_\_\_ = 0$

14. $\_\_\_\_ \times 7 = 35$

15. $70 = \_\_\_\_ \times 7$

16. How many days are in 4 weeks?

17. MP **Number Sense** How can you use the Commutative Property of Multiplication to find 7×3?

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English Spanish

Think and Grow: Modeling Real Life

A child ticket costs $7. An adult ticket costs 4 times as much as the child ticket. Descartes has $40. Can he buy an adult ticket?

Multiplication equation:

Descartes _____ buy an adult ticket.

Show and Grow

18. A small painting costs $5. A large painting costs 7 times as much as the small painting. Newton has $30. Can he buy a large painting?

19. DIG DEEPER! You study your spelling words for 5 minutes twice a day. How many minutes do you spend studying your spelling words in one week?

20. DIG DEEPER! Your dentist tells you to brush your teeth for 3 minutes three times a day. How many minutes should you spend brushing your teeth in one week?

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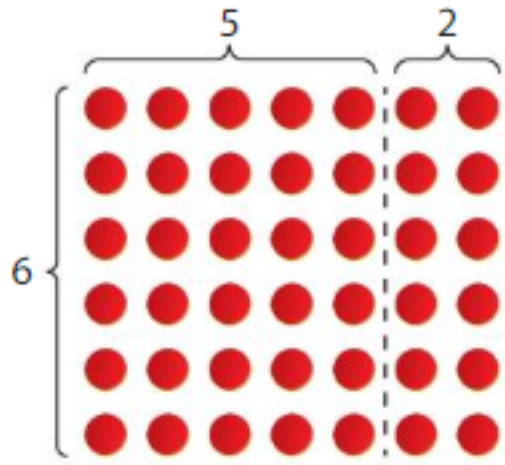
English Spanish

Name _____

Homework & Practice 3.4

Learning Target: Multiply by 7.

Example Find 6×7.



$6 \times 7 = 6 \times (5 + 2)$

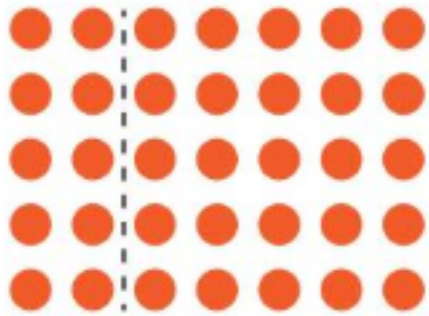
$6 \times 7 = (6 \times 5) + (6 \times 2)$

$6 \times 7 = 30 + 12$

$6 \times 7 = 42$

Find the product.

1. 5×7



$5 \times 7 = 5 \times (\_\_\_ + \_\_\_)$

$5 \times 7 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$5 \times 7 = \_\_\_ + \_\_\_$

$5 \times 7 = \_\_\_$

2. 7×2

$7 \times 2 = (\_\_\_ + \_\_\_) \times 2$

$7 \times 2 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$7 \times 2 = \_\_\_ + \_\_\_$

$7 \times 2 = \_\_\_$

3. $0 \times 7 =$ _____

4. $7 \times 7 =$ _____

5. $10 \times 7 =$ _____

6. $8 \times 7 =$ _____

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

8.
$$\begin{array}{r} 7 \\ \times\ 9 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 4 \\ \times\ 7 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 3 \\ \times\ 7 \\ \hline \end{array}$$

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English Spanish

Find the missing factor.

11. $7 \times \_\_\_\_ = 7$

12. $\_\_\_\_ \times 7 = 14$

13. $56 = \_\_\_\_ \times 7$

14. You go to school 5 days each week. You spend 7 hours at school each day. How many hours do you spend at school in one week?

15. MP **Number Sense** Circle the multiples of 7.

63 24 35 21 32 56

16. MP **Structure** Find 7×6 in two different ways.

17. **Modeling Real Life** A pair of regular shoes costs $9. A pair of light-up shoes costs 7 times as much as the pair of regular shoes. Newton has $60. Can he buy the pair of light-up shoes?

18. DIG DEEPER! A veterinarian tells you to feed your dog 2 cups of food twice a day. How many cups of food should you feed your dog in one week?

Review & Refresh

19. What is the best estimate of the length of a thumbtack?

2 centimeters

1 meter

15 centimeters

20. What is the best estimate of the height of a trampoline?

4 centimeters

2 meters

30 meters

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English Spanish

Name _____

Multiply by 8 3.5

Learning Target: Multiply by 8.

Success Criteria:

- I can use a model to multiply by 8.
- I can use known multiplication facts to multiply by 8.
- I can find the product of a number and 8.

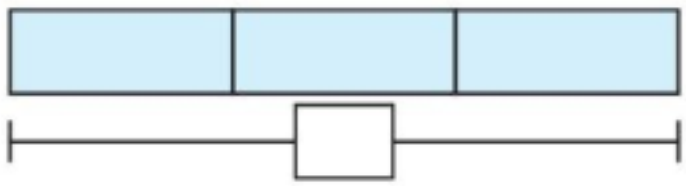
FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Use the tape diagram to find the product.

$3 \times 8 =$ _____



MP **Repeated Reasoning** Explain how you can use a different model to solve. Complete the table.

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

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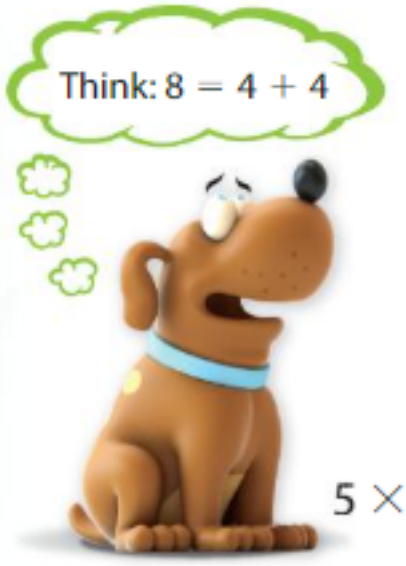
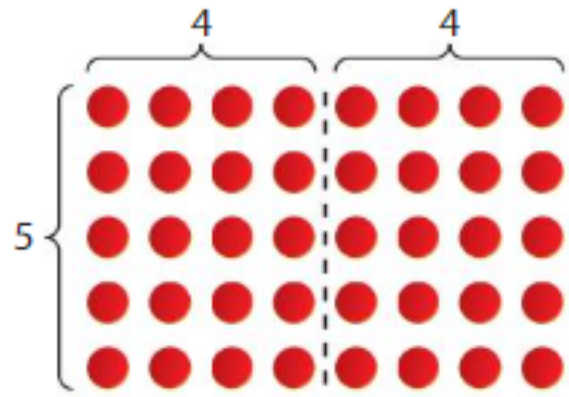
English Spanish

Think and Grow: Multiply by 8

Example Find 5×8.



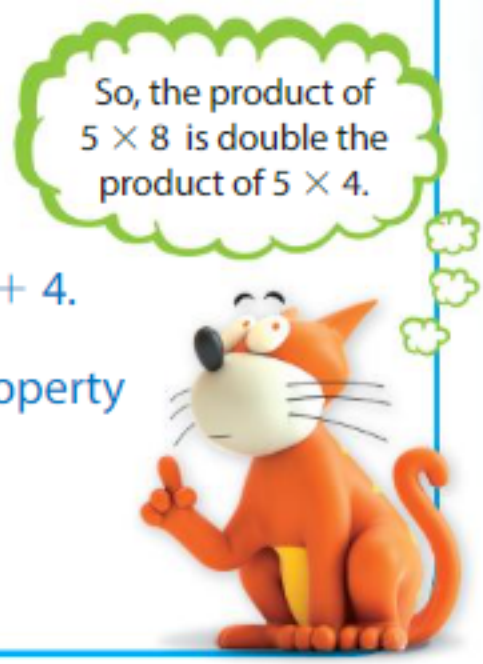


$5 \times 8 = 5 \times (4 + 4)$ Rewrite 8 as $4 + 4$.

$5 \times 8 = (5 \times 4) + (5 \times 4)$ Distributive Property

$5 \times 8 =$ ____ + ____

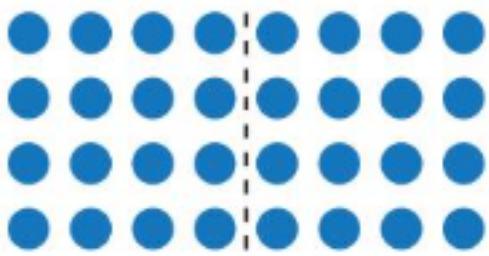
$5 \times 8 =$ ____



Show and Grow

Find the product.

1. 4×8



$4 \times 8 = 4 \times (\_\_\_\_ + \_\_\_\_)$

$4 \times 8 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$4 \times 8 =$ ____ + ____

$4 \times 8 =$ ____

2. 8×7

$8 \times 7 = (\_\_\_\_ + \_\_\_\_) \times 7$

$8 \times 7 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$8 \times 7 =$ ____ + ____

$8 \times 7 =$ ____

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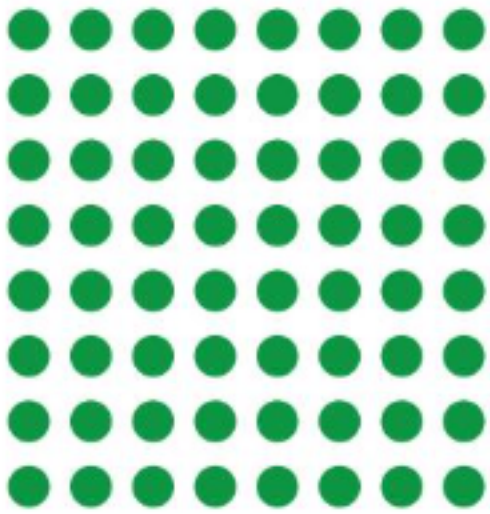
English Spanish

Name _____

Apply and Grow: Practice

Find the product.

3. 8×8



$8 \times 8 =$ (____ + ____) × 8

$8 \times 8 =$ (____ × ____) + (____ × ____)

$8 \times 8 =$ ____ + ____

$8 \times 8 =$ ____

4. 3×8

$3 \times 8 =$ 3 × (____ + ____)

$3 \times 8 =$ (____ × ____) + (____ × ____)

$3 \times 8 =$ ____ + ____

$3 \times 8 =$ ____

5. $8 \times 2 =$ ____

6. $7 \times 8 =$ ____

7. $8 \times 6 =$ ____

8. $10 \times 8 =$ ____

9.
$$\begin{array}{r} 0 \\ \times\ 8 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 8 \\ \times\ 9 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 8 \\ \times\ 5 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 1 \\ \times\ 8 \\ \hline \end{array}$$

Compare.

13. 8×8 ◯ 64

14. 8×0 ◯ 8×1

15. 8×6 ◯ 5×8

16. **Which One Doesn't Belong?** Which expression does *not* belong with the other three?

$4 \times (4 + 3)$

$3 \times (3 + 5)$

$3 \times (1 + 7)$

$3 \times (4 + 4)$

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English Spanish

Think and Grow: Modeling Real Life

A marching band has 7 rows with 8 musicians in each row. There is also a row of 6 people who carry flags. How many people are in the marching band in all?

Multiplication equation:

Addition equation:

There are _____ people in the marching band in all.

Show and Grow

17. A table has 3 rows with 8 prizes in each row. There is also a row of 4 prizes on the floor. How many prizes are there in all?

18. DIG DEEPER! One section of a parking lot has 2 rows of 8 cars. Another section of the parking lot has 8 rows of 6 cars. How many cars are in the parking lot in all?

19. DIG DEEPER! One building has 8 rows of 5 windows. Another building has 9 rows of 8 windows. How many windows are on the two buildings in all?

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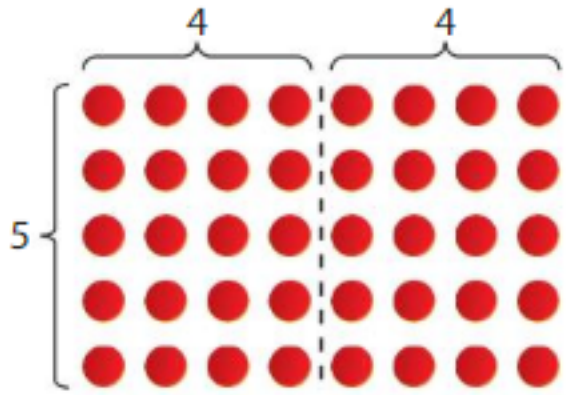
English Spanish

Name _____

Homework & Practice 3.5

Learning Target: Multiply by 8.

Example Find 5×8.



$5 \times 8 = 5 \times (4 + 4)$

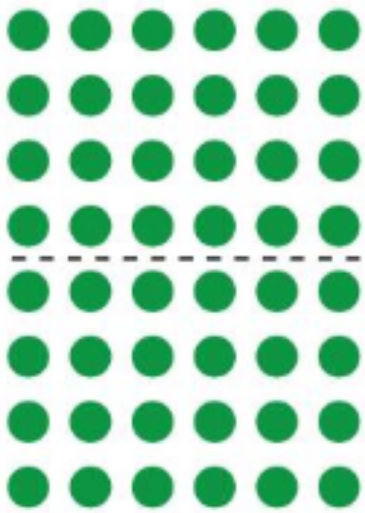
$5 \times 8 = (5 \times 4) + (5 \times 4)$

$5 \times 8 = 20 + 20$

$5 \times 8 = 40$

Find the product.

1. 8×6



$8 \times 6 = (\_\_\_ + \_\_\_) \times 6$

$8 \times 6 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$8 \times 6 = \_\_\_ + \_\_\_$

$8 \times 6 = \_\_\_$

2. 2×8

$2 \times 8 = 2 \times (\_\_\_ + \_\_\_)$

$2 \times 8 = (\_\_\_ \times \_\_\_) + (\_\_\_ \times \_\_\_)$

$2 \times 8 = \_\_\_ + \_\_\_$

$2 \times 8 = \_\_\_$

3. $8 \times 0 = \_\_\_$

4. $4 \times 8 = \_\_\_$

5. $8 \times 10 = \_\_\_$

6. $1 \times 8 = \_\_\_$

7.
$$\begin{array}{r} 8 \\ \times\ 3 \\ \hline \end{array}$$

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

9.
$$\begin{array}{r} 7 \\ \times\ 8 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 8 \\ \times\ 9 \\ \hline \end{array}$$

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English Spanish

Compare.

11. $8 \times 3 \bigcirc 8 \times 2$ | **12.** $8 \times 7 \bigcirc 64$ | **13.** $8 \times 1 \bigcirc 1 \times 8$

14. There are 8 batteries in a package. You buy 7 packages. How many batteries do you have?

15. **Patterns** Tell whether each statement is *true* or *false*. If false, explain.

The ones digit in multiples of 8 follows the pattern 8, 6, 4, 2, 0. _____

The product of an odd factor and 8 is always odd. _____

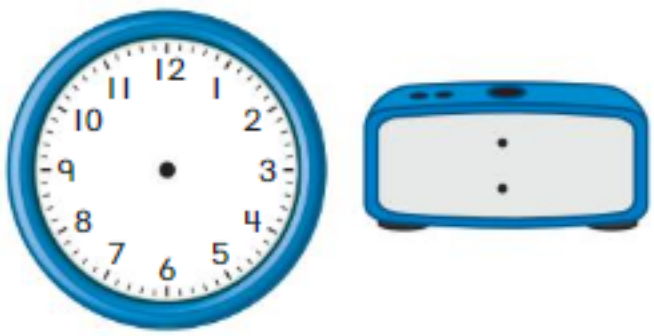
16. **Modeling Real Life** A trophy case has 4 shelves with 8 trophies on each shelf and 1 shelf with 3 trophies. How many trophies are there in all?

17. **DIG DEEPER!** In a science experiment, one group of students tests 2 rows of 8 magnets. A different group tests 1 row of 8 magnets. How many magnets do they test in all?

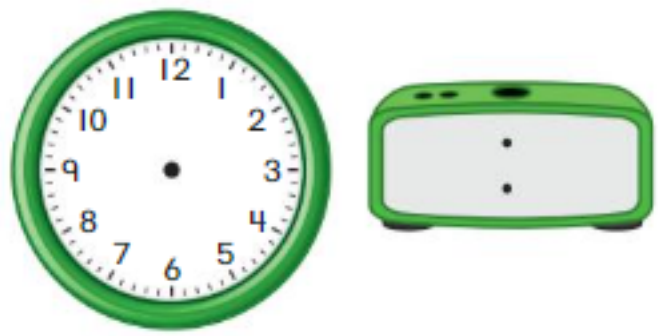
Review & Refresh

Show and write the time.

18. half past 3



19. quarter to 11



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English Spanish

Name _____

Multiply by 9 3.6

Learning Target: Multiply by 9.

Success Criteria:

- I can use a model to multiply by 9.
- I can use known multiplication facts to multiply by 9.
- I can find the product of a number and 9.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.5
MAFS.3.OA.3.7

Explore and Grow

Write an equation to match the array.

_____ × _____ = _____

Cross out the last column. Write an equation to match the new array.

_____ × _____ = _____

MP **Repeated Reasoning** Explain how multiplying by 10 can help you multiply by 9. Complete the table.

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

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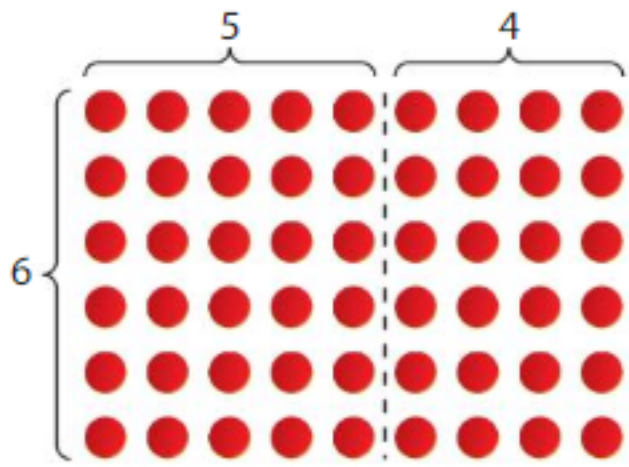
English Spanish

Think and Grow: Multiply by 9

Example Find 6×9.

One Way: Use the Distributive Property. Rewrite 9 as $5 + 4$.



$6 \times 9 = \quad 6 \times (5 + 4)$

$6 \times 9 = (6 \times 5) + (6 \times 4)$

$6 \times 9 =$ ____ + ____

$6 \times 9 =$ ____

Distributive Property (with subtraction)

$3 \times (5 - 2) = (3 \times 5) - (3 \times 2)$ $\qquad$ $(5 - 2) \times 3 = (5 \times 3) - (2 \times 3)$

Another Way: Use the Distributive Property. Rewrite 9 as $10 - 1$.

$6 \times 9 = \quad 6 \times (10 - 1)$

$6 \times 9 = (6 \times 10) - (6 \times 1)$

$6 \times 9 =$ ____ − ____

$6 \times 9 =$ ____

Show and Grow

1. Find 3×9.

$3 \times 9 = \quad 3 \times ($____ − ____$)$

$3 \times 9 = ($____ $\times$ ____$) - ($____ $\times$ ____$)$

$3 \times 9 =$ ____ − ____

$3 \times 9 =$ ____

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English Spanish

Name _____

Apply and Grow: Practice

Find the product.

2.

$4 \times 9 =$ $\quad 4 \times (\_\_\_\_ - \_\_\_\_)$

$4 \times 9 = (\_\_\_\_ \times \_\_\_\_) - (\_\_\_\_ \times \_\_\_\_)$

$4 \times 9 = \_\_\_\_ - \_\_\_\_$

$4 \times 9 = \_\_\_\_$

3.

$9 \times 8 =$ $\quad (\_\_\_\_ - \_\_\_\_) \times 8$

$9 \times 8 = (\_\_\_\_ \times \_\_\_\_) - (\_\_\_\_ \times \_\_\_\_)$

$9 \times 8 = \_\_\_\_ - \_\_\_\_$

$9 \times 8 = \_\_\_\_$

4. $9 \times 7 =$ _____

5. $9 \times 1 =$ _____

6. $2 \times 9 =$ _____

7. $0 \times 9 =$ _____

8.
$$\begin{array}{r} 9 \\ \times\ 10 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 9 \\ \times\ 5 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 8 \\ \times\ 9 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 9 \\ \times\ 9 \\ \hline \end{array}$$

Find the missing factor.

12. $9 \times \_\_\_\_ = 0$

13. $\_\_\_\_ \times 9 = 45$

14. $9 \times \_\_\_\_ = 36$

15. A softball team has 9 positions and 2 players for each position. How many players are on the team?

16. MP **Number Sense** Which are *not* multiples of 9?

50 $\quad$ 36 $\quad$ 42 $\quad$ 45 $\quad$ 18 $\quad$ 10

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English Spanish

Think and Grow: Modeling Real Life

In *geocaching*, people search for a cache, or collection of objects, using a GPS device. You go geocaching for 9 days. You find 2 caches each day. Your goal is to find 20 caches. Do you reach your goal?

Multiplication equation:

You _____ reach your goal.

Show and Grow

17. You have 9 math problems for homework. You spend 4 minutes on each problem. Your goal is to finish your math homework in 40 minutes. Do you reach your goal?

18. **DIG DEEPER!** You exercise for 6 days. You exercise for 10 minutes each day. Your friend exercises for 8 days. Your friend exercises for 9 minutes each day. Who exercises the most minutes?

19. **DIG DEEPER!** Your school is collecting cans for a food drive. Seven students from your class each collect 9 cans. Eight students from your friend's class each collect 8 cans. Which class collects the most cans?

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English Spanish

Name _____

Homework & Practice 3.6

Learning Target: Multiply by 9.

Example Find 5×9.

Use the Distributive Property.
Rewrite 9 as $10 - 1$.

$5 \times 9 = 5 \times (10 - 1)$

$5 \times 9 = (5 \times 10) - (5 \times 1)$

$5 \times 9 = 50 - 5$

$5 \times 9 = 45$

Find the product.

1. $7 \times 9 = 7 \times (\_\_\_\_ - \_\_\_\_)$

$7 \times 9 = (\_\_\_\_ \times \_\_\_\_) - (\_\_\_\_ \times \_\_\_\_)$

$7 \times 9 = \_\_\_\_ - \_\_\_\_$

$7 \times 9 = \_\_\_\_$

2. $9 \times 2 = (\_\_\_\_ - \_\_\_\_) \times 2$

$9 \times 2 = (\_\_\_\_ \times \_\_\_\_) - (\_\_\_\_ \times \_\_\_\_)$

$9 \times 2 = \_\_\_\_ - \_\_\_\_$

$9 \times 2 = \_\_\_\_$

3. $1 \times 9 =$ _____

4. $9 \times 9 =$ _____

5. $10 \times 9 =$ _____

6. $3 \times 9 =$ _____

7.
$$\begin{array}{r} 9 \\ \times\ 8 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 9 \\ \times\ 6 \\ \hline \end{array}$$

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

10.
$$\begin{array}{r} 0 \\ \times\ 9 \\ \hline \end{array}$$

Find the missing factor.

11. $9 \times \_\_\_\_ = 9$

12. $\_\_\_\_ \times 5 = 45$

13. $90 = \_\_\_\_ \times 10$

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English Spanish

14. You see 9 chipmunks on your walk to school. You see twice as many pigeons. How many pigeons do you see?

---

15. **Patterns** Use the table.

×	1	2	3	4	5	6	7	8	9	10
9	9	18	27	36	45	54	63	72	81	90

What pattern do you notice in the ones digits? the tens digits?

What do you notice about the sum of the digits for each multiple of 9?

---

16. **YOU BE THE TEACHER** Your friend says the product of 7×9 is 69. Is your friend correct? Explain.

---

17. **Modeling Real Life** You sell 8 orchids. You want to raise $70. Do you meet your goal?

Flower Sale	
Lily	$6
Orchid	$9

DIG DEEPER! Newton sells 9 lilies. Descartes sells 5 orchids. Who raises the most money?

Review & Refresh

Complete the equation.

18. $4 \times 5 = 5 \times$ _____

19. $8 \times$ _____ $= 7 \times 8$

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English Spanish

Name _____

Practice Multiplication Strategies 3.7

Learning Target: Use a strategy to multiply two factors.

Success Criteria:

- I can choose a strategy to multiply two factors.
- I can multiply two factors and write the product.
- I can explain the strategy I used.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.5
MAFS.3.OA.3.7

Explore and Grow

Show how to find the product.

$6 \times 7 =$ _____

MP **Reasoning** What other strategies can you use to solve?

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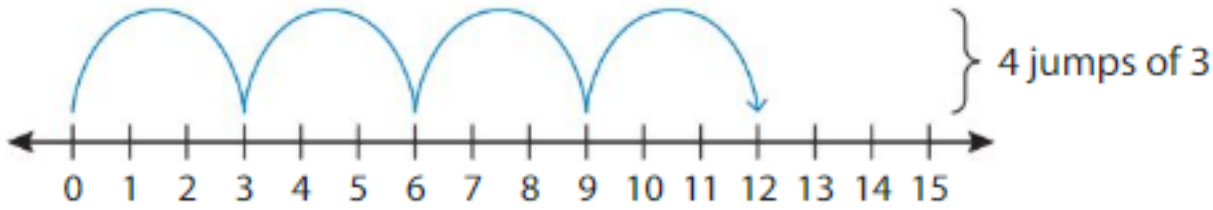
Think and Grow: Practice Multiplication Strategies

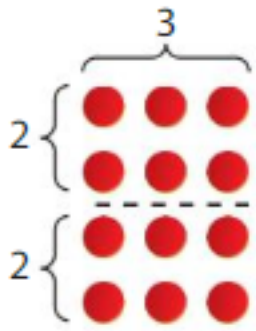
Example Use any strategy to find 4×3.

One Way: Use a number line. Skip count by 3s four times.



$4 \times 3 =$ _____

Another Way: Use the Distributive Property.



$4 \times 3 = \quad (2 + 2) \times 3$

$4 \times 3 = (2 \times 3) + (2 \times 3)$

$4 \times 3 =$ _____ + _____

$4 \times 3 =$ _____

Show and Grow

Use any strategy to find the product.

1. $5 \times 6 =$ _____

2. $3 \times 8 =$ _____

3. $7 \times 8 =$ _____

4. $9 \times 6 =$ _____

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English Spanish

Name _____

Apply and Grow: Practice

Use any strategy to find the product.

5. $5 \times 9 =$ _____

6. $5 \times 7 =$ _____

7. $10 \times 3 =$ _____

8. $7 \times 1 =$ _____

9. $5 \times 5 =$ _____

10. $4 \times 9 =$ _____

11.
$$\begin{array}{r} 8 \\ \times\ 6 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 4 \\ \times\ 7 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 5 \\ \times\ 2 \\ \hline \end{array}$$

Name the strategy or property used to solve.

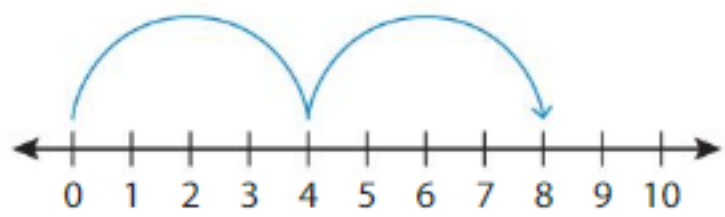
14. $9 \times 9 = 9 \times (10 - 1)$

$9 \times 9 = (9 \times 10) - (9 \times 1)$

$9 \times 9 = 90 - 9$

$9 \times 9 = 81$

15. $2 \times 4 = 8$



16. DIG DEEPER! Use known facts to find 6×12. Explain your strategy.

$6 \times 12 =$ _____

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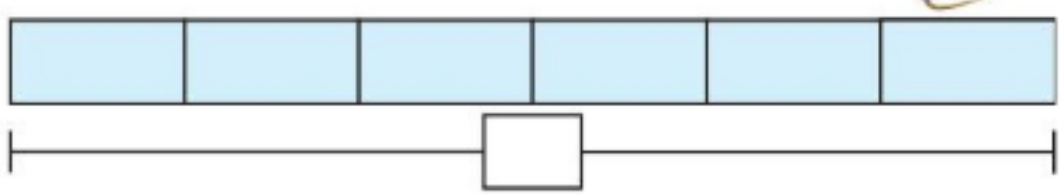
Think and Grow: Modeling Real Life

You want to make a dragon that is 25 feet long for a parade. You have 6 pieces of fabric that are each 5 feet long. Do you have enough fabric to make the dragon?

Model:



You _____ have enough fabric to make the dragon.

Show and Grow

17. A book is 70 pages long. You read 9 pages each day for one week. Do you finish the book in one week?

18. **DIG DEEPER!** You buy 4 packs of juice boxes. How many juice boxes do you buy in all?

Explain how you solved the problem.

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English Spanish

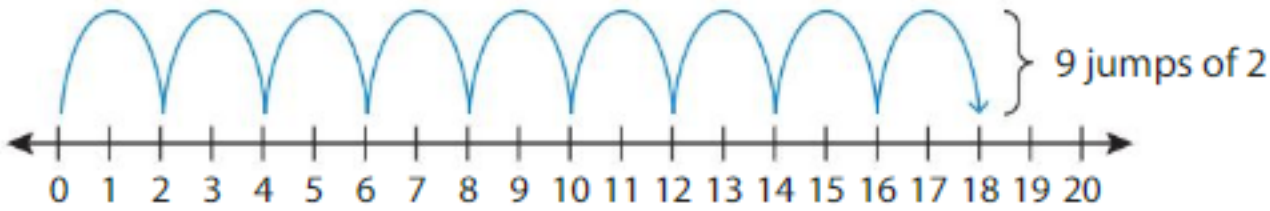
Name _____

Homework & Practice 3.7

Learning Target: Use a strategy to multiply two factors.

Example Use any strategy to find 9×2.

One Way: Use a number line.



$9 \times 2 =$ 18

Use any strategy to find the product.

1. $0 \times 6 =$ _____

2. $2 \times 10 =$ _____

3. $1 \times 9 =$ _____

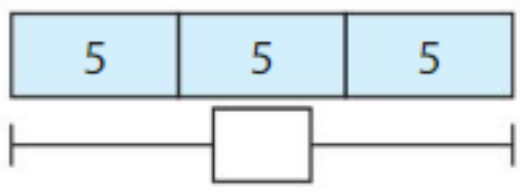
4.
$$\begin{array}{r} 4 \\ \times\ 5 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 8 \\ \times\ 9 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 7 \\ \times\ 3 \\ \hline \end{array}$$

Name the strategy or property used to solve.

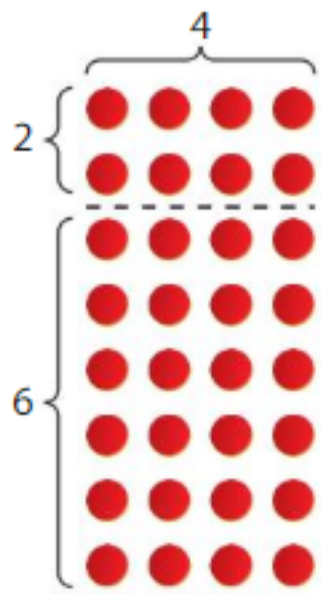
7. $3 \times 5 = ?$



$5 + 5 + 5 = 15$

$3 \times 5 = 15$

8.



$8 \times 4 = (2 + 6) \times 4$

$8 \times 4 = (2 \times 4) + (6 \times 4)$

$8 \times 4 = 8 + 24$

$8 \times 4 = 32$

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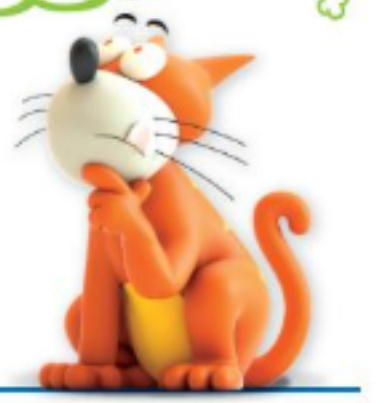
English Spanish

9. **Logic** Without multiplying, how can you tell which product will be greater, 6×3 or 6×4? Explain.

10. **YOU BE THE TEACHER** Descartes uses the Distributive Property to solve 5×8. Is he correct? Explain.

$5 \times 8 = 5 \times (10 - 2)$
$5 \times 8 = (5 \times 10) + (5 \times 2)$
$5 \times 8 = 50 + 10$
$5 \times 8 = 60$



11. **Modeling Real Life** You order 24 eggs from a farmer. The farmer has 8 chickens. Each chicken lays 3 eggs. Does the farmer have enough eggs for your order? Explain.

12. **DIG DEEPER!** You have 3 piles of sports cards. There are 3 baseball cards, 2 basketball cards, and 4 football cards in each pile. How many sports cards do you have in all?

Review & Refresh

Find the sum.

13.
$$\begin{array}{r} 32 \\ 13 \\ +\ 47 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 46 \\ 14 \\ +\ 24 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 55 \\ 10 \\ +\ 12 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 21 \\ 13 \\ +\ 29 \\ \hline \end{array}$$

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English Spanish

Name _____

Multiply Three Factors 3.8

Learning Target: Use the Associative Property of Multiplication.

Success Criteria:

- I can explain the Associative Property of Multiplication.
- I can change the grouping of factors.
- I can multiply three factors to find a product.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.5
MAFS.3.OA.3.7

Explore and Grow

Model 2 arrays that each have 4 rows and 3 columns. Draw your model. Complete the equation for the arrays.

2 × _____ × _____ = _____

Model 3 arrays that each have 2 rows and 4 columns. Draw your model. Complete the equation for the arrays.

3 × _____ × _____ = _____

MP **Structure** Compare the equations. How are they the same? How are they different?

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English Spanish

Think and Grow: Associative Property of Multiplication

Associative Property of Multiplication: Changing the grouping of factors does not change the product.

Example Find $(5 \times 2) \times 3$.

One Way: Find 5×2 first.

$(5 \times 2) \times 3$

$\_\_\_\_ \times 3 = \_\_\_\_$

Another Way: Change the grouping. Find 2×3 first.

$5 \times (2 \times 3)$

$5 \times \_\_\_\_ = \_\_\_\_$

$(5 \times 2) \times 3 = \_\_\_\_$

Example Find $4 \times (7 \times 2)$.

$4 \times (7 \times 2) = 4 \times (2 \times 7)$ Commutative Property of Multiplication

$4 \times (2 \times 7) = (4 \times 2) \times 7$ Associative Property of Multiplication

$(4 \times 2) \times 7$

$\_\_\_\_ \times 7 = \_\_\_\_$

$4 \times (7 \times 2) = \_\_\_\_$

Show and Grow

Find the product.

1. $(3 \times 2) \times 2 = \_\_\_\_$

2. $3 \times (4 \times 3) = \_\_\_\_$

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English Spanish

Name _____

Apply and Grow: Practice

Find the product.

3. $(3 \times 2) \times 7 =$ _____

4. $5 \times (4 \times 2) =$ _____

5. $(3 \times 6) \times 2 =$ _____

6. $3 \times (5 \times 3) =$ _____

7. $(4 \times 10) \times 2 =$ _____

8. $6 \times (0 \times 7) =$ _____

Tell whether the equation is *true* or *false*. Explain.

9. $(5 \times 3) \times 4 \stackrel{?}{=} 3 \times (5 \times 4)$

10. $4 \times (2 \times 6) \stackrel{?}{=} 8 \times 4$

11. A water ride has 4 log boats. Each boat has 2 sections with 2 seats in each section. How many seats does the water ride have?

12. DIG DEEPER! Complete the square so that the product of the numbers in each row and each column equals 24.

2		2
		2
4		

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English Spanish

Think and Grow: Modeling Real Life

There are 26 students in your class. Your teacher brings in 4 boxes of muffins. Each box has 4 packages with 2 muffins in each package. Are there enough muffins for the class?

Multiplication equation:

There _____ enough muffins for the class.

Show and Grow

13. Newton needs to send out 50 letters. He buys 4 sheets of stamps. Each sheet has 2 rows with 6 stamps in each row. Does Newton have enough stamps to send out all the letters?

14. **DIG DEEPER!** There are 60 people in line to ride the tram at a zoo. There are 5 benches on each tram car. Two people fit on each bench. The tram is 5 cars long. How many people will have to wait for the next tram?

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English Spanish

Name _____

Homework & Practice 3.8

Learning Target: Use the Associative Property of Multiplication.

Example Find $(5 \times 2) \times 2$.

One Way: Find 5×2 first.

$(5 \times 2) \times 2$

$\downarrow$

$10 \times 2 = 20$

Another Way: Change the grouping. Find 2×2 first.

$5 \times (2 \times 2)$

$\downarrow$

$5 \times 4 = 20$

$(5 \times 2) \times 2 = 20$

Example Find $(3 \times 8) \times 2$.

$(3 \times 8) \times 2 = (8 \times 3) \times 2$ Commutative Property of Multiplication

$= 8 \times (3 \times 2)$ Associative Property of Multiplication

$= 8 \times (3 \times 2)$

$\downarrow$

$= 8 \times 6 = 48$

$(3 \times 8) \times 2 = 48$

Find the product.

1. $(2 \times 4) \times 1 =$ _____

2. $2 \times (3 \times 3) =$ _____

3. $(4 \times 2) \times 9 =$ _____

4. $2 \times (8 \times 5) =$ _____

Tell whether the equation is *true* or *false*. Explain.

5. $7 \times (0 \times 3) \stackrel{?}{=} 7 \times 3$

6. $2 \times (6 \times 5) \stackrel{?}{=} (6 \times 2) \times 5$

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7. A sudoku puzzle is made of 9 large squares. Each large square is made of an array with 3 rows and 3 columns of small squares. How many small squares are there?

8. **DIG DEEPER!** Use the number cards to complete the equations.

$(2 \times 3) \times$ _____ $= 54$

_____ $\times (2 \times 5) = 100$

$8 \times ($_____ $\times 1) = 0$

$(2 \times$ _____$) \times 10 = 20$

0	1	9	10

9. **YOU BE THE TEACHER** Your friend says that $(2 \times 1) \times 7$ is *not* equal to $2 \times (1 \times 7)$. Is your friend correct? Explain.

10. **Writing** How do you know $2 \times 9 \times 5$ is the same as 10×9?

11. **Modeling Real Life** There are 64 soccer players. Some coaches bring 7 boxes of protein bars. Each box has 5 packages with 2 protein bars in each package. Are there enough protein bars for each soccer player to get one?

Review & Refresh

12. A training academy certifies 12 firefighting Dalmations. They divide the Dalmations among different cities with 3 Dalmatians in each city. How many cities receive firefighting Dalmations?

_____ ÷ _____ = _____

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English Spanish

Name _____

More Problem Solving: Multiplication

3.9

Learning Target: Use the problem-solving plan to solve word problems.

Success Criteria:

- I can understand a problem.
- I can make a plan to solve.
- I can solve a problem.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Model the story.

A baseball league gives 8 new baseballs to each team. There are 8 teams. How many baseballs does the league need?

The baseball league needs _____ baseballs.

MP **Reasoning** Explain how you can use a different strategy to solve.

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English Spanish

Think and Grow: Using the Problem-Solving Plan

Example You want to make 8 dream catchers. You have 30 feathers. You tie 3 feathers to each dream catcher. How many feathers do you have left?

Understand the Problem

What do you know?

- You want to make _____ dream catchers.
- You have _____ feathers in all.
- You tie _____ feathers to each dream catcher.

What do you need to find?

- You need to find how many _____ are left after you make _____ dream catchers.

Make a Plan

How will you solve?

- Multiply _____ by _____ to find how many _____ you used to make 8 dream catchers.
- Subtract the product from _____.

Solve

$8 \times 3 =$ _____

$30 -$ _____ $=$ _____

You have _____ feathers left.

Show and Grow

1. You want to make 6 cheese sandwiches. You have 8 slices of cheese in all. You put 2 slices on each sandwich. How many more slices of cheese do you need?

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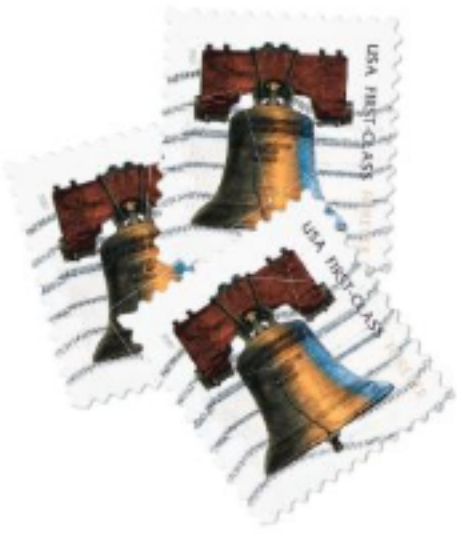
Name _____

Apply and Grow: Practice

2. You have 60 fluid ounces of water and 6 water bottles. You pour 8 fluid ounces of water into each bottle . What information do you know that will help you find how much water you have left?



3. A sheet of stamps has 2 rows with 5 stamps in each row. You buy 3 sheets of stamps. How many stamps do you buy?

4. Your cousin works two jobs. She walks dogs 4 days each week for 2 hours each day. She babysits 2 days each week for 5 hours each day. How many hours does your cousin work in one week?

5. Four arcade tokens cost $1. You buy $5 in tokens. You play 6 games that cost 3 tokens each. How many tokens do you have left?

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Think and Grow: Modeling Real Life

A basketball team scores 6 three-pointers, 9 two-pointers, and 7 free throws in the first quarter. How many points does the team score in all?

Basketball Points	
Three-pointer	3 points
Two-pointer	2 points
Free throw	1 point

Understand the problem:

Make a plan:

Solve:

The team scores _____ points in all.

Show and Grow

6. Descartes buys 4 shirts, 3 pairs of shorts, and 2 pairs of pants. How much does he spend in all?

Store Sale	
Shirts	$5
Shorts	$7
Pants	$10

7. DIG DEEPER! City workers set up 100 chairs for a concert in a park. Section A has 4 rows with 9 chairs in each row. Section B has 3 rows with 8 chairs in each row. Section C has 8 equal rows. How many chairs are in each of section C's rows?

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English Spanish

Name _____

Homework & Practice 3.9

Learning Target: Use the problem-solving plan to solve word problems.

Example A store sells pool toys for $9 each. Newton buys 6 pool toys. He gives the cashier $60. What is his change?

Understand the Problem

What do you know?

- Pool toys cost 9 each.
- Newton buys 6 pool toys.
- Newton gives the cashier 60.

What do you need to find?

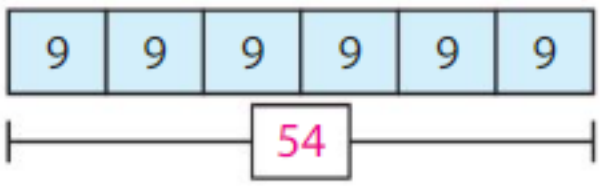
- You need to find how much $change$ Newton receives.

Make a Plan

How will you solve?

- Multiply 9 by 6 to find how much the $pool\ toys$ cost in all.
- Then subtract the product from 60.

Solve



$9 \times 6 = 54$

$9 + 9 + 9 + 9 + 9 + 9 = 54$

$60 - 54 = 6$

Newton's change is 6.

1. You and 3 of your friends each spend $9 on a present. How much does the present cost?

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2. A landlord is replacing windows in an apartment complex. There are 6 apartments. Each apartment has 8 windows. Seven windows do not need replacing. How many windows does the landlord need to replace?

3. Women's boxing consists of four 2-minute rounds. There is a 1-minute rest interval between each round. What information do you know that will help you find how long a boxing match lasts?

4. **Writing** Write and solve your own word problem that involves multiplication.

5. **Modeling Real Life** You play a trivia game with your friends. Team A answers 3 hard questions and 6 easy questions. Team B answers 5 hard questions and 2 easy questions. Which team is winning? by how many points?

Trivia Game		
Question Type	Hard	Easy
Number of Points	5	2

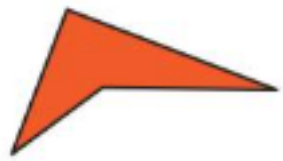
Review & Refresh

6.

_____ sides

_____ vertices

Shape: _____

7. 

_____ sides

_____ vertices

Shape: _____

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Name _____

Performance Task 3

1. You and your friend make origami animals.

a. You have two packages of paper. One package has 8 colors with 6 sheets of each color. Another package has 3 white sheets and 9 times as many colored sheets as white sheets. How many sheets of paper do you have in all?

b. You and your friend each want to make 5 origami animals every day for one week. Do you have enough paper? Explain.

c. You make a jumping frog. The first step is to fold the paper into fourths that are shaped like triangles. Draw lines to show how you would fold your paper.

d. It takes 12 steps to make a crane. Your friend makes 8 paper cranes. How many steps does your friend do in all? Explain.

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Product Lineup

Directions:

1. Players take turns flipping two number cards.
2. On your turn, multiply the two numbers and place a counter on the product.
3. If you flip two of the same number, take another turn.
4. The first player to create two lines of 5 in a row, horizontally, vertically, or diagonally, wins!

5	27	9	40	72	56	10
64	3	80	35	50	4	48
30	12	28	100	6	21	70
7	25	32	15	49	54	18
90	2	16	20	1	60	45
14	81	42	63	24	8	36

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Name _____

Chapter Practice 3

3.1 Multiply by 3

Draw a model to find the product.

1. 3×8

2. 3×4

Find the product.

3. 3×5

4. 0×3

5. 1×3

6. 3×6

3.2 Multiply by 4

Find the product.

7. 4×8

8. 10×4

9. 7×4

10. 4×4

Find the missing factor.

11. $1 \times \_\_\_\_ = 4$

12. $\_\_\_\_ \times 4 = 0$

13. $20 = \_\_\_\_ \times 4$

14. MP **Number Sense** How can you use 2×5 to find 4×5?

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3.3 Multiply by 6

Find the product.

15. $\begin{array}{r} 6 \\ \times\ 5 \\ \hline \end{array}$

16. $\begin{array}{r} 6 \\ \times\ 2 \\ \hline \end{array}$

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

18. $\begin{array}{r} 3 \\ \times\ 6 \\ \hline \end{array}$

Compare.

19. $7 \times 6 \bigcirc 6 \times 8$

20. $6 \times 9 \bigcirc 4 \times 6$

21. $36 \bigcirc 6 \times 6$

3.4 Multiply by 7

Find the product.

22. $\begin{array}{r} 0 \\ \times\ 7 \\ \hline \end{array}$

23. $\begin{array}{r} 7 \\ \times\ 7 \\ \hline \end{array}$

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

25. $\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$

26. $\begin{array}{r} 7 \\ \times\ 1 \\ \hline \end{array}$

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

28. $\begin{array}{r} 4 \\ \times\ 7 \\ \hline \end{array}$

29. $\begin{array}{r} 8 \\ \times\ 7 \\ \hline \end{array}$

3.5 Multiply by 8

Find the product.

30. $\begin{array}{r} 8 \\ \times\ 6 \\ \hline \end{array}$

31. $\begin{array}{r} 9 \\ \times\ 8 \\ \hline \end{array}$

32. $\begin{array}{r} 4 \\ \times\ 8 \\ \hline \end{array}$

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

34. MP **Precision** There are 8 fluid ounces in 1 cup. How many fluid ounces are in 3 cups?

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3.6 Multiply by 9

Find the product.

35.
$$\begin{array}{r} 10 \\ \times\ 9 \\ \hline \end{array}$$

36.
$$\begin{array}{r} 9 \\ \times\ 4 \\ \hline \end{array}$$

37.
$$\begin{array}{r} 9 \\ \times\ 6 \\ \hline \end{array}$$

38.
$$\begin{array}{r} 3 \\ \times\ 6 \\ \hline \end{array}$$

39. MP **Reasoning** An artist needs 80 flower petals for a craft. She picks 9 flowers that each have 8 petals. Does she have enough flower petals for her craft? Explain.

3.7 Practice Multiplication Strategies

Use any strategy to find the product.

40. $2 \times 7 =$ _____

41. $6 \times 6 =$ _____

42. $5 \times 1 =$ _____

43. $8 \times 10 =$ _____

44. $4 \times 0 =$ _____

45. $10 \times 10 =$ _____

46. **Modeling Real Life** Newton has 4 bundles of balloons. There is 1 blue balloon, 2 purple balloons, and 1 green balloon in each bundle. How many balloons does he have in all?

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English Spanish

3.8 Multiply Three Factors

Find the product.

47. $(4 \times 2) \times 2 =$ _____

48. $3 \times (3 \times 3) =$ _____

49. $(3 \times 3) \times 6 =$ _____

50. $2 \times (8 \times 4) =$ _____

51. $(2 \times 0) \times 4 =$ _____

52. $0 \times (8 \times 5) =$ _____

3.9 More Problem Solving: Multiplication

53. You find 2 four-leaf clovers and 9 three-leaf clovers. What is the total number of leaves on the clovers you find?

54. A bakery sells croissants for $2 each. A tray contains 2 rows of 4 croissants. You buy 2 trays. How many croissants do you buy?

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4 Division Facts and Strategies

- Name some of the landmarks in Washington, D.C.
- You want to visit some of the landmarks in Washington, D.C. How can you use division to plan the number of landmarks to visit each day?

Chapter Learning Target:
Understand division strategies.

Chapter Success Criteria:

- I can define a dividend, a divisor, and a quotient.
- I can explain a division equation for an array.
- I can compare multiplication to division.
- I can solve a division problem.

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Name _____

4 Vocabulary

Review Words

Commutative Property of Multiplication
Distributive Property
Multiplication Property of One
Multiplication Property of Zero

Organize It

Use the review words to complete the graphic organizer.

Properties of Multiplication

_____

$4 \times 3 = 12$ $3 \times 4 = 12$

So, $4 \times 3 = 3 \times 4$.

_____

$3 \times (5 + 2) = (3 \times 5) + (3 \times 2)$

_____

$5 \times 0 = 0$ $0 \times 2 = 0$

_____

$10 \times 1 = 10$ $1 \times 7 = 7$

Define It

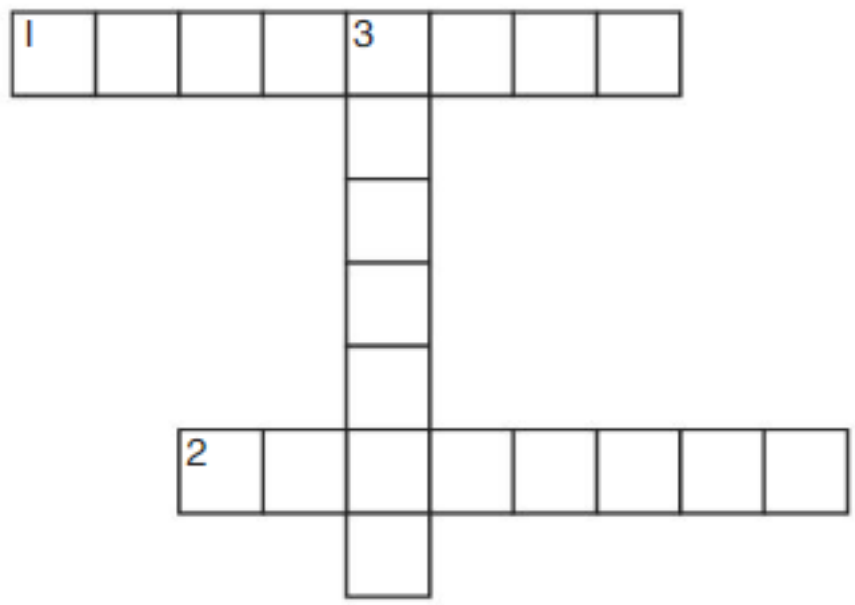
Use your vocabulary cards to complete the puzzle.

Across

1. The number of objects or the amount you want to divide
2. The answer when you divide one number by another number

Down

3. The number by which you divide



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Chapter 4 Vocabulary Cards

dividend

divisor

fact family

quotient

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The number by which you divide

$10 \div 2 = 5$

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The number of objects or the amount you want to divide

$10 \div 2 = 5$

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The answer when you divide one number by another number

$10 \div 2 = 5$

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A group of related facts that uses the same numbers

$3 \times 2 = 6$

$2 \times 3 = 6$

$6 \div 3 = 2$

$6 \div 2 = 3$

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English Spanish

Name _____

Use Arrays to Divide 4.1

Learning Target: Use an array to divide.

Success Criteria:

- I can draw an array to model division.
- I can identify a dividend, a divisor, and a quotient.
- I can write a division equation for an array.

FLORIDA STANDARDS

MAFS.3.OA.1.2
MAFS.3.OA.1.3

Explore and Grow

Build an array to model 12. Draw the array.

Number of rows: _____

Number in each row: _____

MP **Structure** Compare your array with your partner's array. How are they the same? How are they different?

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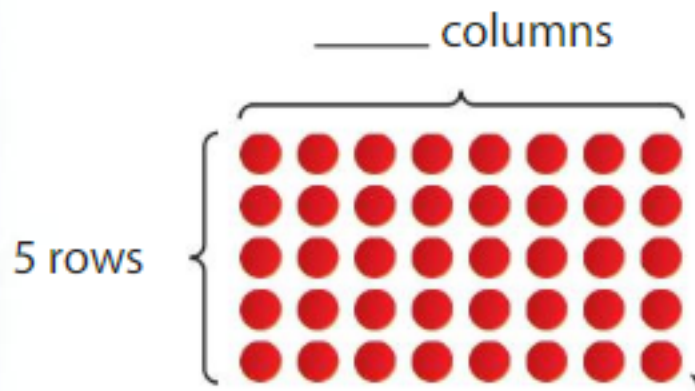
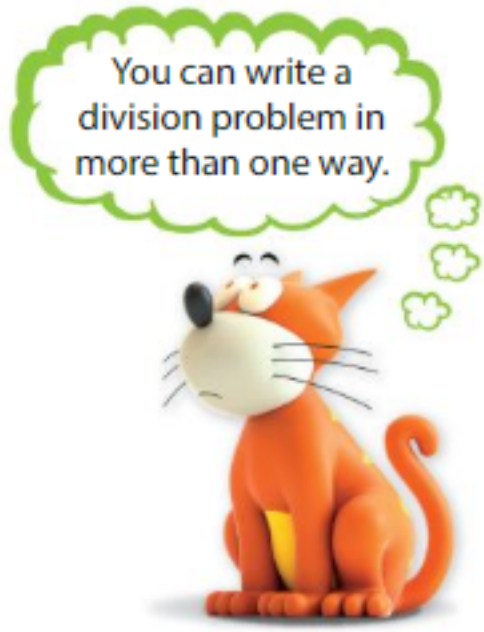
Think and Grow: Division and Arrays

Example There are 40 counters. The counters are in 5 equal rows. How many counters are in each row?





Division equation:

40 ÷ 5 = _____

dividend **divisor** **quotient**

□ ← quotient

divisor → 5)40

↑ dividend

There are _____ counters in each row.

Show and Grow

Find the quotient.

1. 14 ÷ 2 = _____

2. 12 ÷ 3 = _____

3. There are 20 counters. The counters are in 4 equal rows. How many counters are in each row?

4 rows of _____

20 ÷ 4 = _____

4. You have 21 counters. You arrange them with 7 counters in each row. How many rows of counters do you make?

_____ rows of 7

21 ÷ 7 = _____

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English Spanish

Name _____

Apply and Grow: Practice

5. There are 25 counters. The counters are in 5 equal rows. How many counters are in each row?

5 rows of _____

25 ÷ 5 = _____

6. There are 48 counters. The counters are in 8 equal rows. How many counters are in each row?

8 rows of _____

48 ÷ 8 = _____

7. You have 42 counters. You arrange them with 6 counters in each row. How many rows of counters do you make?

_____ rows of 6

42 ÷ 6 = _____

8. You have 27 counters. You arrange them with 9 counters in each row. How many rows of counters do you make?

_____ rows of 9

27 ÷ 9 = _____

Write a division equation for the array.

9.

_____ ÷ _____ = _____

10.

_____ ÷ _____ = _____

11. **YOU BE THE TEACHER** Your friend has 63 counters in 7 equal rows. Your friend says that finding 7 ÷ 63 will give the number of columns. Is your friend correct? Explain.

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English Spanish

Think and Grow: Modeling Real Life

Two groups of students are playing a flip and find game. Your group arranges 48 cards in 8 equal rows. The other group arranges 28 cards in 4 equal rows. Which group has rows with more cards?

Draw:

Division equations:

_____ has rows with more cards.

Show and Grow

12. Newton arranges 12 magnets in 6 equal rows. Descartes arranges 15 magnets in 3 equal rows. Who has rows with more magnets?

13. You have 18 jars of green slime and 12 jars of purple slime at a party. Each guest takes 3 jars. There are none left. How many guests are at the party?

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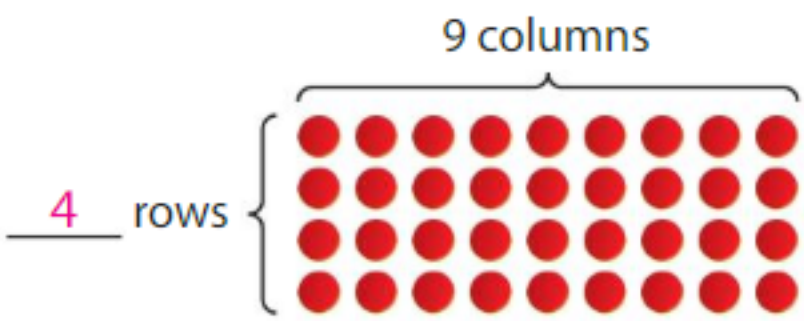
English Spanish

Name _____

Homework & Practice 4.1

Learning Target: Use an array to divide.

Example There are 36 counters. There are 9 counters in each row. How many rows are there?



$9\overline{)36}$ → $\boxed{4}$

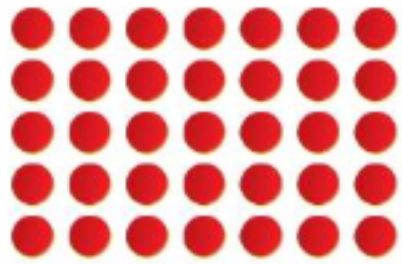
$36 \div 9 = \underline{4}$

There are 4 rows.

Find the quotient.

1.

$10 \div 2 =$ _____

2. 

$35 \div 5 =$ _____

3. There are 9 counters. The counters are in 3 equal rows. How many counters are in each row?

3 rows of _____

$9 \div 3 =$ _____

4. There are 60 counters. The counters are in 6 equal rows. How many counters are in each row?

6 rows of _____

$60 \div 6 =$ _____

5. You have 72 counters. You arrange them with 8 counters in each row. How many rows of counters do you make?

_____ rows of 8

$72 \div 8 =$ _____

6. You have 24 counters. You arrange them with 6 counters in each row. How many rows of counters do you make?

_____ rows of 6

$24 \div 6 =$ _____

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English Spanish

7. **Writing** How can you use an array to find 35 ÷ 7?

8. **Precision** Label the parts of the division problem using *quotient*, *dividend*, and *divisor*.

12 ÷ 6 = 2 ← _____

_____ _____

2 ← _____

6)12

_____ _____

9. **Modeling Real Life** Your apartment building has 40 mailboxes in 5 equal rows. Your friend's apartment building has 40 mailboxes in 4 equal rows. Which apartment building has rows with more mailboxes?

10. **Modeling Real Life** There are 8 snack bags of pretzels and 10 snack bags of popcorn. The bags are divided equally between 9 friends. How many snack bags does each friend get?

Review & Refresh

Find the missing factor.

11. _____ × 2 = 20	**12.** 1 × _____ = 5	**13.** _____ × 6 = 0
14. 1 × _____ = 0	**15.** _____ × 4 = 40	**16.** 7 × _____ = 7

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English Spanish

Name _____

Relate Multiplication and Division

4.2

Learning Target: Use fact families to relate multiplication and division.

Success Criteria:

- I can use an array to write related multiplication and division equations.
- I can explain the relationship between multiplication and division.

FLORIDA STANDARDS

MAFS.3.OA.1.2
MAFS.3.OA.1.3
MAFS.3.OA.2.6
MAFS.3.OA.3.7

Explore and Grow

Use 24 counters to make an array. Draw the array. Write a multiplication equation and a division equation for the array.

_____ × _____ = _____ _____ ÷ _____ = _____

MP **Structure** Compare your equations to your partner's equations. How are they the same? How are they different?

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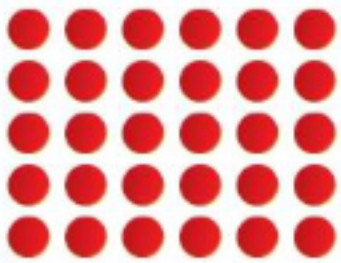
English Spanish

Think and Grow: Multiplication and Division

A **fact family** is a group of related facts that uses the same numbers.

Example



Multiplication	Division
5 rows of 6 counters	30 counters in 5 equal rows
$5 \times 6 =$ _____	$30 \div 5 =$ _____
_____ counters	_____ counters in each row

Fact family for 5, 6, and 30:

$5 \times 6 =$ _____	$30 \div 5 =$ _____
$6 \times 5 =$ _____	$30 \div 6 =$ _____

Show and Grow

Use the array to complete the equations.

1.

$3 \times$ _____ $= 24$

$24 \div 3 =$ _____

2.

$4 \times$ _____ $= 20$

$20 \div 4 =$ _____

3. Draw an array to find 2×7. Write the other 3 facts in the fact family.

$2 \times 7 =$ _____

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English Spanish

Name _____

Apply and Grow: Practice

4. Draw an array to find 3×6. Write the other 3 facts in the fact family.

$3 \times 6 =$ _____

_____

_____

_____

Complete the fact family.

5. $7 \times$ _____ $= 70$ $\quad 70 \div 10 =$ _____

_____ $\times 7 = 70$ $\quad 70 \div$ _____ $= 10$

6. $5 \times$ _____ $= 40$ $\quad 40 \div 8 =$ _____

_____ $\times 5 = 40$ $\quad 40 \div$ _____ $= 8$

Write the fact family for the numbers.

7. 2, 5, 10

8. 4, 3, 12

9. MP **Structure** Find each product. Then match the multiplication fact with the related division fact.

$6 \times 4 =$ _____ $\quad 27 \div 3 = 9$

$8 \times 2 =$ _____ $\quad 7 \div 1 = 7$

$3 \times 9 =$ _____ $\quad 16 \div 2 = 8$

$7 \times 1 =$ _____ $\quad 24 \div 6 = 4$

10. DIG DEEPER! Is $4 \times 6 = 24$ part of the fact family for $3 \times 8 = 24$? Explain.

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English Spanish

Think and Grow: Modeling Real Life

Your teacher divides the items shown equally among 9 students. Write two equations that you can use to show how many straws each student gets.

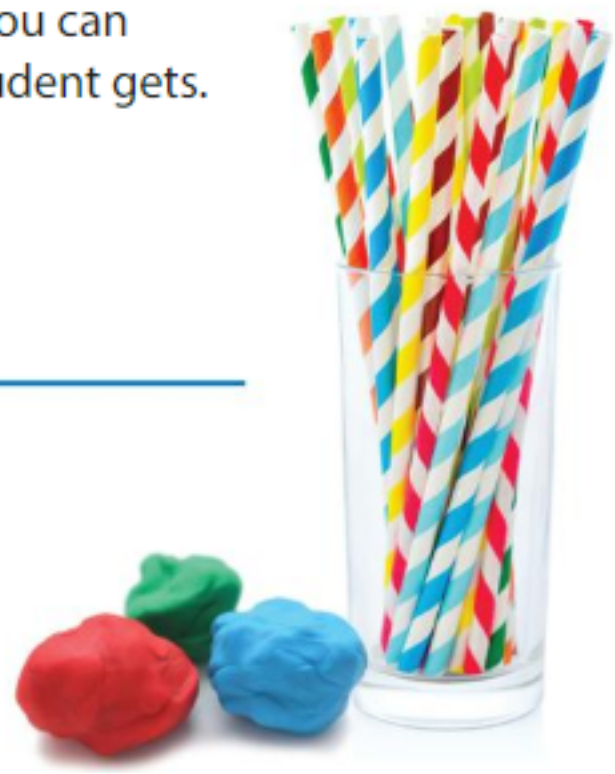
Item	Number
Toothpicks	72
Containers of clay	27
Straws	54

Division equation:

Multiplication equation:

Show and Grow

11. Use the table above to write two equations that you can use to show how many containers of clay each student gets.



12. Use the table above to find how many more toothpicks students will get than straws.

13. Explain how a multiplication fact can help you solve $30 \div 3 =$ _____.

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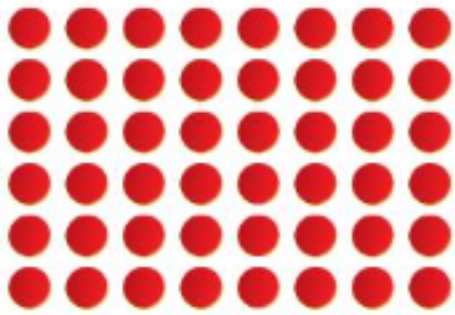
English Spanish

Name _____

Homework & Practice 4.2

Learning Target: Use fact families to relate multiplication and division.

Example



Multiplication

6 rows of 8 counters

$6 \times 8 =$ 48

48 counters

Division

48 counters in 6 equal rows

$48 \div 6 =$ 8

8 counters in each row

Fact family for 6, 8, and 48:

$6 \times 8 =$ 48 $\quad 48 \div 6 =$ 8

$8 \times 6 =$ 48 $\quad 48 \div 8 =$ 6

Use the array to complete the equations.

1.

$2 \times$ _____ $= 8$

$8 \div 2 =$ _____

2.

$3 \times$ _____ $= 9$

$9 \div 3 =$ _____

3. Draw an array to find 5×7. Write the other 3 facts in the fact family.

$5 \times 7 =$ _____

_____

_____

_____

Complete the fact family.

4. $9 \times$ _____ $= 9$ $\quad 9 \div 1 =$ _____

_____ $\times 9 = 9$ $\quad 9 \div$ _____ $= 1$

5. $6 \times$ _____ $= 42$ $\quad 42 \div 7 =$ _____

_____ $\times 6 = 42$ $\quad 42 \div$ _____ $= 7$

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English Spanish

Write the fact family for the numbers.

6. 4, 8, 32

7. 6, 7, 42

8. Which One Doesn't Belong? Which equation does not belong with the other three?

$3 \times 7 = 21$ $7 \times 3 = 21$ $21 \div 7 = 3$ $7 + 3 = 10$

9. DIG DEEPER! Newton has 16 pennies. He wants to put them in stacks that are the same height. How many stacks does he make?

10. Modeling Real Life Your art teacher divides the items shown equally among 6 groups. Write two equations that you can use to show how many pieces of paper each student gets.

Item	Number
Paintbrushes	48
Pieces of paper	42
Paint trays	18

11. Modeling Real Life Use the table above to find how many more paintbrushes students will get than paint trays.

Review & Refresh

Find the missing factor.

12. $5 \times \_\_\_\_ = 45$

13. $2 \times \_\_\_\_ = 16$

14. $\_\_\_\_ \times 2 = 4$

15. $\_\_\_\_ \times 3 = 15$

16. $5 \times \_\_\_\_ = 10$

17. $5 \times \_\_\_\_ = 5$

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English Spanish

Name _____

Divide by 2, 5, or 10

4.3

Learning Target: Divide a number by 2, 5, or 10.

Success Criteria:

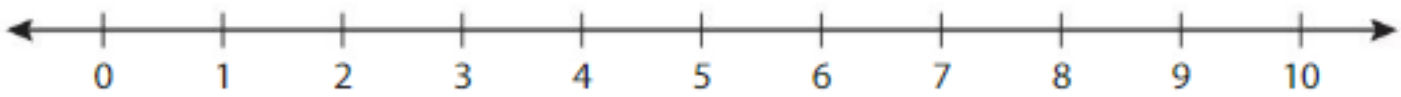
- I can model dividing by 2, 5, or 10.
- I can find the quotient of a number and 2, 5, or 10.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.6
MAFS.3.OA.3.7

Explore and Grow

Use the number line to model 10 ÷ 2.



10 ÷ 2 = _____

MP **Structure** In your number line model, does 2 represent the number of equal groups or the size of the groups? Explain.

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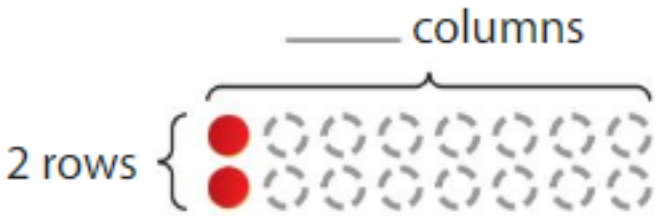
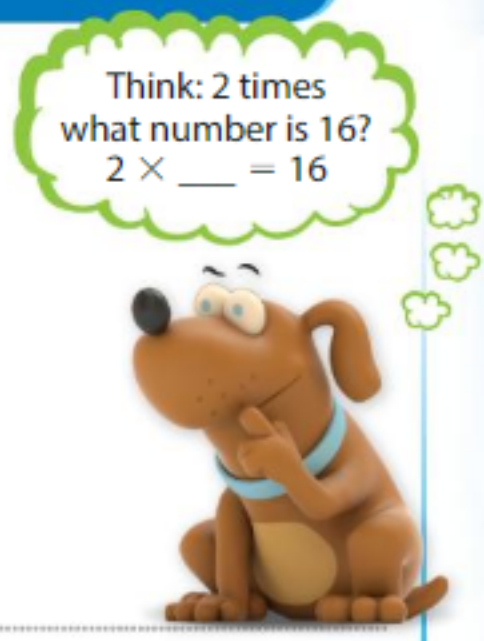
English Spanish

Think and Grow: Divide by 2, 5, or 10

Example Find 16 ÷ 2.



16 ÷ 2 = _____ or $2\overline{)16}$



Example Find 20 ÷ 5.

Think: 5 times what number is 20?

5 × _____ = 20

20 ÷ 5 = _____ or $5\overline{)20}$

Example Find 30 ÷ 10.

Think: 10 times what number is 30?

10 × _____ = 30

30 ÷ 10 = _____ or $10\overline{)30}$

Show and Grow

Write the related multiplication fact. Then find the quotient.

1. Find 60 ÷ 10.

10 × _____ = 60

60 ÷ 10 = _____

2. Find 14 ÷ 2.

2 × _____ = 14

14 ÷ 2 = _____

3. Find 35 ÷ 5.

5 × _____ = 35

35 ÷ 5 = _____

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English Spanish

Name _____

Apply and Grow: Practice

Write the related multiplication fact. Then find the quotient.

4. Find $4 \div 2$.

$2 \times \_\_\_\_ = 4$

$4 \div 2 = \_\_\_\_$

5. Find $15 \div 5$.

$5 \times \_\_\_\_ = 15$

$15 \div 5 = \_\_\_\_$

6. Find $10 \div 10$.

$10 \div \_\_\_\_ = 10$

$10 \div 10 = \_\_\_\_$

Find the quotient.

7. $70 \div 10 = \_\_\_\_$

8. $25 \div 5 = \_\_\_\_$

9. $18 \div 2 = \_\_\_\_$

10. $\square$ $5\overline{)30}$

11. $\square$ $2\overline{)16}$

12. $\square$ $10\overline{)90}$

13. Divide 60 by 10.

14. Divide 14 by 2.

15. Divide 45 by 5.

Find the missing divisor.

16. $12 \div \_\_\_\_ = 6$

17. $10 \div \_\_\_\_ = 2$

18. $50 \div \_\_\_\_ = 5$

19. You make 2 batches of pancakes. You use 6 cups of flour. How many cups of flour are in 1 batch?

20. DIG DEEPER! I am an even number. If you multiply me by 5, then divide the product by 10, the quotient is 2. What number am I?

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English Spanish

Think and Grow: Modeling Real Life

Fourteen students say a dog is their favorite pet. How many symbols should you draw to complete the picture graph?

Division equation:

Favorite Pet	
Dog	
Cat	☺ ☺ ☺ ☺ ☺
Fish	☺ ☺ ☺ ☺

Each ☺ = 2 students.

You should draw _____ symbols.

Show and Grow

21. Twenty-five students say riding a bike is their favorite summer activity. How many symbols should you draw to complete the picture graph?

Favorite Summer Activity	
Swimming	☺ ☺
Riding a bike	
Playing sports	☺ ☺ ☺

Each ☺ = 5 students.

22. Erasers cost 10¢ each. How many erasers can you buy with 70¢?

23. You have 26 red linking cubes and 24 blue linking cubes. You use all of the linking cubes to make towers with 10 linking cubes each. How many towers do you make?

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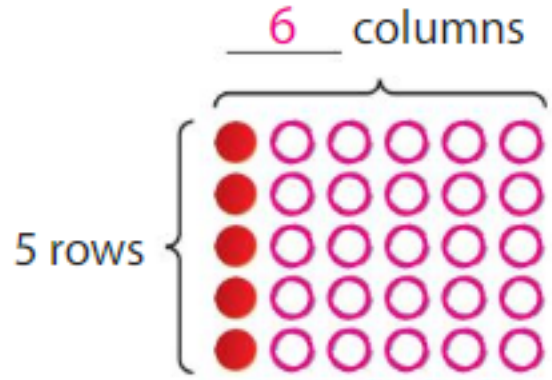
English Spanish

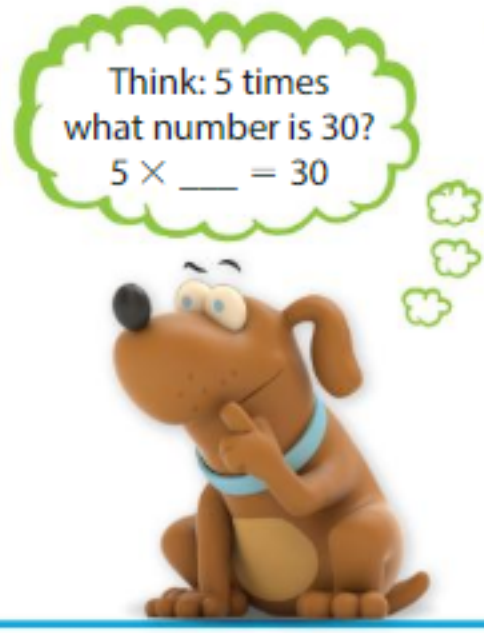
Name _____

Homework & Practice 4.3

Learning Target: Divide a number by 2, 5, or 10.

Example Find 30 ÷ 5.





30 ÷ 5 = 6 or $5\overline{)30}$ = 6

Write the related multiplication fact. Then find the quotient.

1. Find 20 ÷ 10.

10 × _____ = 20

20 ÷ 10 = _____

2. Find 8 ÷ 2.

2 × _____ = 8

8 ÷ 2 = _____

3. Find 50 ÷ 5.

5 × _____ = 50

50 ÷ 5 = _____

Find the quotient.

4. 100 ÷ 10 = _____

5. 45 ÷ 5 = _____

6. 14 ÷ 2 = _____

7. $2\overline{)12}$ = ☐

8. $10\overline{)60}$ = ☐

9. $5\overline{)10}$ = ☐

Find the missing divisor.

10. 20 ÷ _____ = 5

11. 40 ÷ _____ = 10

12. 4 ÷ _____ = 2

13. MP **Number Sense** The American flag has 50 stars. It has 10 times as many stars as the Chinese flag. How many stars are on the Chinese flag?

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English Spanish

14. Open-Ended Write a division equation for each description.

The divisor is 2. The quotient is 5. The dividend is 10.

_____ ÷ _____ = _____ _____ ÷ _____ = _____ _____ ÷ _____ = _____

15. Repeated Reasoning Complete the table.

Number of $5 Bills	Total Value
	$10
	$15
	$25
	$35
	$40
	$50

16. You buy 20 flowers. You want an equal number of flowers in each of 5 pots. How many flowers do you put in each pot?

17. Modeling Real Life Fifty students say they have traveled on an airplane. How many symbols should you draw to complete the picture graph?

Method of Transportation	
Airplane	
Subway	☺ ☺ ☺ ☺
Train	☺ ☺

Each ☺ = 10 students.

18. Modeling Real Life A jeweler has 17 gold rings and 18 silver rings. She puts them in a ring tray in 5 rows. How many rings are in each row?

Review & Refresh

Compare.

19. $8 \times 3 \bigcirc 7 \times 3$ **20.** $15 \bigcirc 5 \times 3$ **21.** $3 \times 3 \bigcirc 4 \times 3$

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English Spanish

Name _____

Divide by 3 or 4

4.4

Learning Target: Divide a number by 3 or 4.

Success Criteria:

- I can model dividing by 3 or 4.
- I can find the quotient of a number and 3 or 4.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.6
MAFS.3.OA.3.7

Explore and Grow

Put 12 counters into 3 equal groups. Draw to show your groups.

Use your equal groups to help you find the quotient.

$12 \div 3 = \_\_\_\_$

MP **Structure** Put 12 counters into 4 equal groups. Draw to show your groups. Write a division equation to match. What do you notice?

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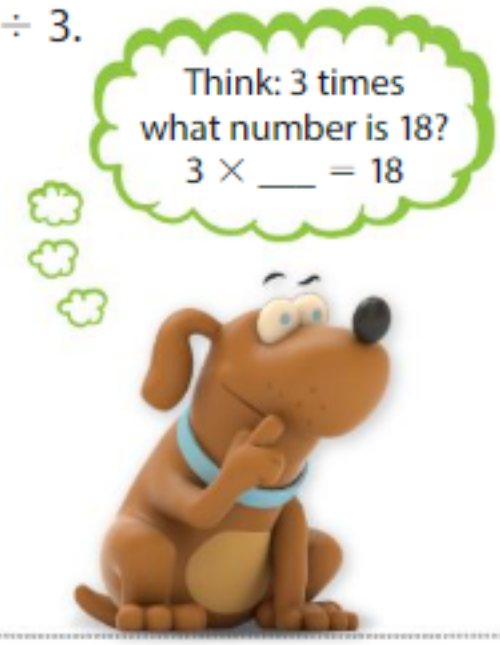
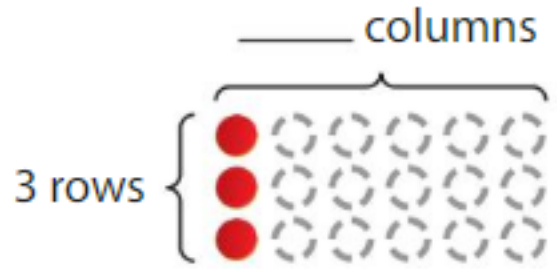
English Spanish

Think and Grow: Divide by 3 or 4

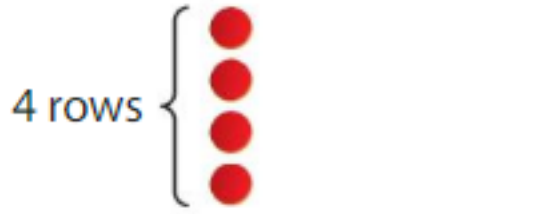
Example Find 18 ÷ 3.





18 ÷ 3 = _____ or $\begin{array}{r}\square \\ 3\overline{)18}\end{array}$

Example Find 32 ÷ 4.

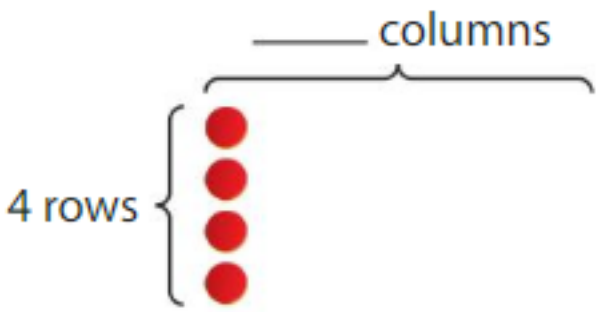


32 ÷ 4 = _____ or $\begin{array}{r}\square \\ 4\overline{)32}\end{array}$

Show and Grow

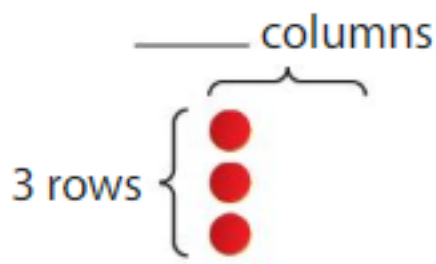
Complete the model and find the quotient.

1. Find 28 ÷ 4.



28 ÷ 4 = _____

2. Find 9 ÷ 3.



9 ÷ 3 = _____

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English Spanish

Name _____

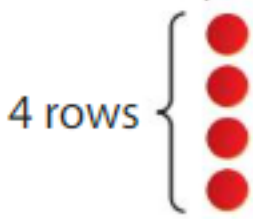
Apply and Grow: Practice

Complete the model and find the quotient.

3. Find 8 ÷ 4.

_____ columns

4 rows

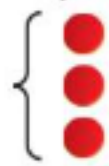


8 ÷ 4 = _____

4. Find 24 ÷ 3.

_____ columns

3 rows



24 ÷ 3 = _____

Find the quotient.

5. 12 ÷ 3 = _____

6. 20 ÷ 4 = _____

7. 15 ÷ 3 = _____

8. $4\overline{)32}$

9. $3\overline{)18}$

10. $4\overline{)36}$

11. Divide 9 by 3.

12. Divide 12 by 4.

13. Divide 21 by 3.

Compare.

14. 27 ÷ 3 ◯ 28 ÷ 4

15. 30 ÷ 3 ◯ 24 ÷ 4

16. 6 ÷ 3 ◯ 16 ÷ 4

17. There are 36 water bottles in a package. The bottles are in 4 rows. How many water bottles are in each row?

18. DIG DEEPER! Can you divide 20 students into 3 equal groups? Explain.

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English Spanish

Think and Grow: Modeling Real Life

You arrange 36 chairs in 4 equal rows. You arrange 21 music stands in 3 equal rows. How many more chairs are in each row than music stands?

Division equations:

There are _____ more chairs in each row.

Show and Grow

19. You arrange 30 cups of fruit punch in 3 equal rows. You arrange 24 cups of lemonade in 4 equal rows. How many more cups of fruit punch are in each row than cups of lemonade?

20. You have a bag of 25 carrot sticks. You eat 5 of them and equally share the rest with 4 friends. How many carrot sticks does each friend get?

21. Your teacher has 18 yellow pencils and 18 red pencils. She puts 3 pencils on each desk in the class. How many desks are in the class?

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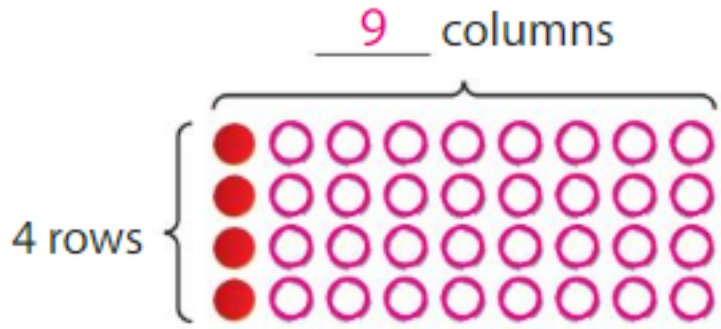
English Spanish

Name _____

Homework & Practice 4.4

Learning Target: Divide a number by 3 or 4.

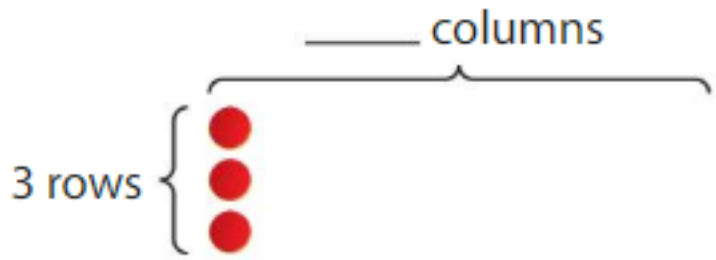
Example Find 36 ÷ 4.



$36 \div 4 = \underline{9}$ or $4\overline{)36}$ with 9 above

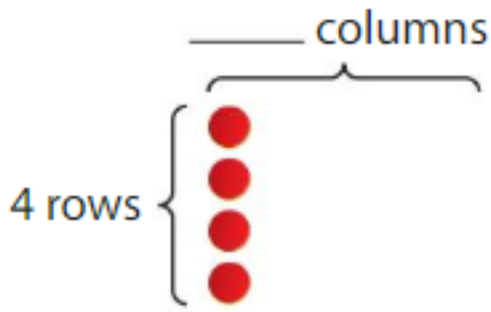
Complete the model and find the quotient.

1. Find 27 ÷ 3.



$27 \div 3 = \_\_\_\_$

2. Find 20 ÷ 4.



$20 \div 4 = \_\_\_\_$

Find the quotient.

3. $6 \div 3 = \_\_\_\_$

4. $28 \div 4 = \_\_\_\_$

5. $18 \div 3 = \_\_\_\_$

6. $4\overline{)8}$

7. $3\overline{)24}$

8. $4\overline{)16}$

Compare.

9. $9 \div 3 \bigcirc 15 \div 3$

10. $12 \div 3 \bigcirc 12 \div 4$

11. $32 \div 4 \bigcirc 36 \div 4$

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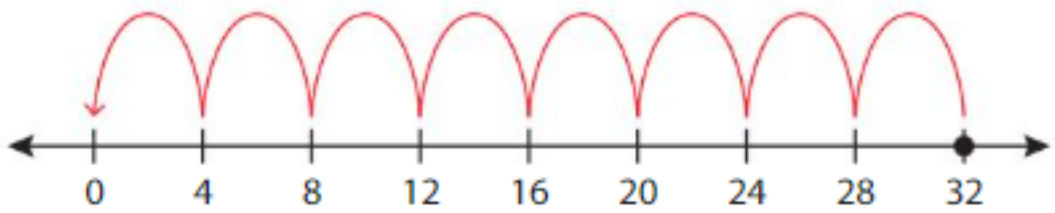
English Spanish

12. **Number Sense** Tissue boxes are sold in packs of 3. A doctor's office needs 21 boxes. How many packs should the office buy?

13. **Structure** Write the division equation represented by the number line.



____ ÷ ____ = ____

14. **YOU BE THE TEACHER** Your friend says she can use $3 \times 6 = 18$ to help find $6 \div 3$. Is your friend correct? Explain.

15. **Modeling Real Life** A food vending machine has 40 snacks in rows of 4. A drink vending machine has 21 drinks in rows of 3. How many more rows of snacks are there than rows of drinks?

16. **Modeling Real Life** A delivery person has 13 large packages and 14 small packages. He delivers 3 packages to each house. There are none left. How many houses does he deliver to?

Review & Refresh

Find the product.

17.	18.	19.	20.	21.
8×6	6×0	6×2	10×6	7×6

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English Spanish

Name _____

Divide by 6 or 7

4.5

Learning Target: Divide a number by 6 or 7.

Success Criteria:

- I can model dividing by 6 or 7.
- I can find the quotient of a number and 6 or 7.

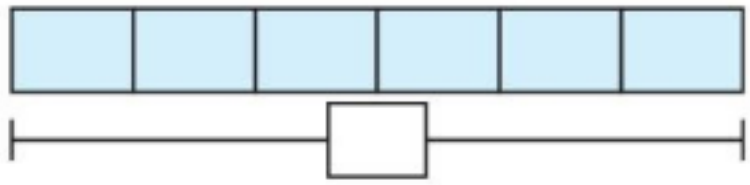
FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.6
MAFS.3.OA.3.7

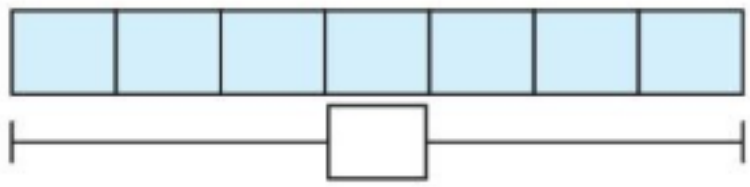
Explore and Grow

Complete the statements and the models.

42 ÷ _____



42 ÷ _____



MP **Reasoning** Without solving, which quotient is greater? Explain how you know.

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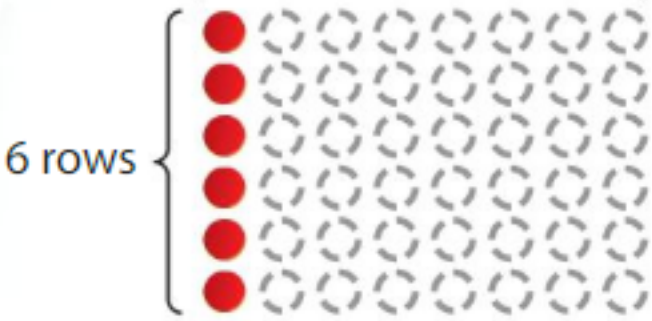
Think and Grow: Divide by 6 or 7

Example Find 48 ÷ 6.

Think: 6 times what number is 48?

6 × _____ = 48

_____ columns



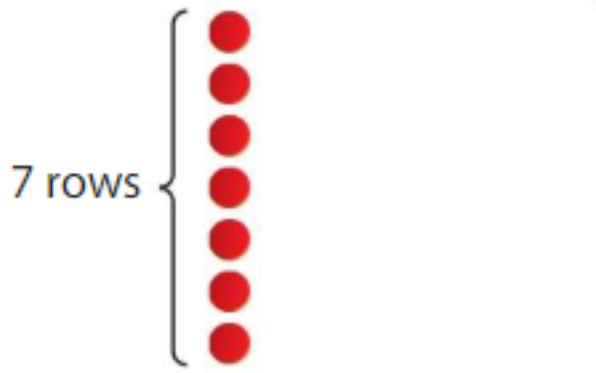
48 ÷ 6 = _____ or $6\overline{)48}$

Example Find 49 ÷ 7.

Think: 7 times what number is 49?

7 × _____ = 49

_____ columns



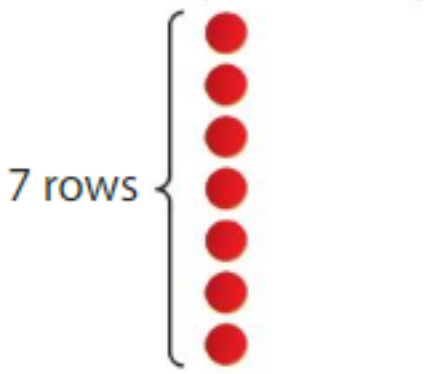
49 ÷ 7 = _____ or $7\overline{)49}$

Show and Grow

Complete the model and find the quotient.

1. Find 28 ÷ 7.

_____ columns



28 ÷ 7 = _____

2. Find 54 ÷ 6.

_____ columns

54 ÷ 6 = _____

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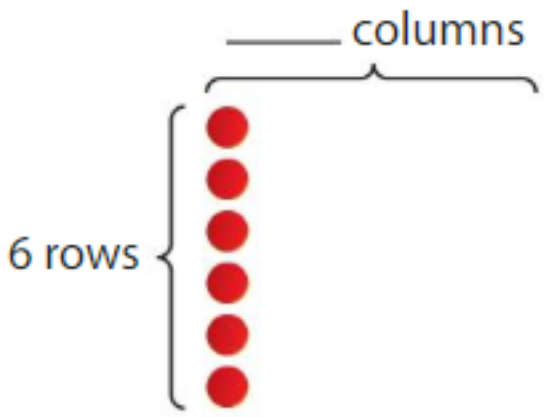
English Spanish

Name _____

Apply and Grow: Practice

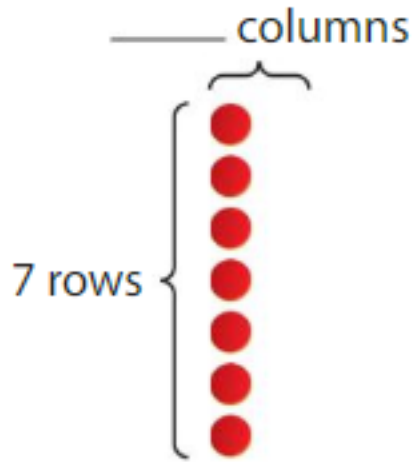
Complete the model and find the quotient.

3. Find 36 ÷ 6.



36 ÷ 6 = _____

4. Find 14 ÷ 7.



14 ÷ 7 = _____

Find the quotient.

5. 60 ÷ 6 = _____

6. 35 ÷ 7 = _____

7. 24 ÷ 6 = _____

8. $6\overline{)12}$ $\square$

9. $7\overline{)42}$ $\square$

10. $7\overline{)63}$ $\square$

Find the missing divisor.

11. 28 ÷ _____ = 7

12. 30 ÷ _____ = 6

13. 70 ÷ _____ = 7

14. You have 24 stones for the game mancala. There are 6 holes on the board. Each hole gets an equal number of stones. How many stones do you put in each hole?

15. MP **Number Sense** Write the correct symbol to make each equation true.

4 $\square$ 6 = 24

35 $\square$ 7 = 42

56 $\square$ 7 = 8

54 $\square$ 6 = 48

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English Spanish

Think and Grow: Modeling Real Life

You have 54 craft sticks. You use all of the sticks to make hexagons. How many hexagons can you make?

Division equation:

You can make _____ hexagons.

Show and Grow

16. You use 35 craft sticks to make 7 polygons. You use the same number of craft sticks for each polygon. How many craft sticks do you use for each polygon?

17. There are 42 students in gym class. The teacher divides the students into 7 teams. How many more students would be on each team if the teacher divides the students into 6 teams?

18. You have a tray of 12 oatmeal bars. You keep 6 of them. How many bars can you give to each of your 6 friends?

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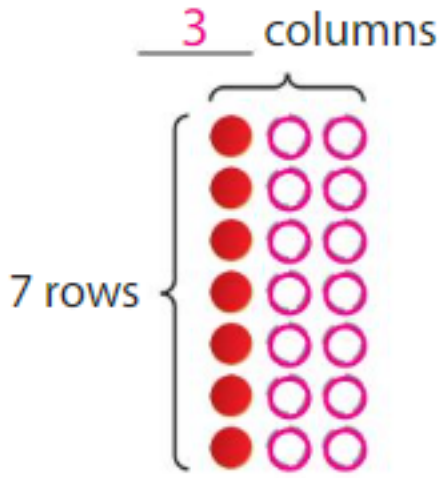
English Spanish

Name _____

Homework & Practice 4.5

Learning Target: Divide a number by 6 or 7.

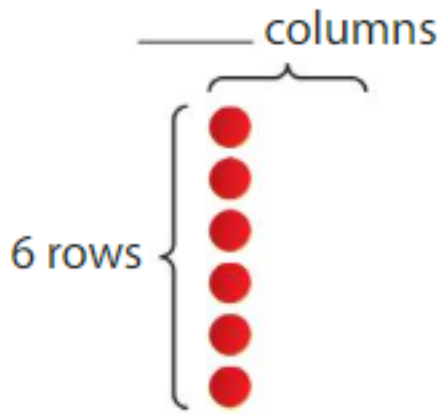
Example Find 21 ÷ 7.



21 ÷ 7 = 3 or $7\overline{)21}$ with quotient $\boxed{3}$

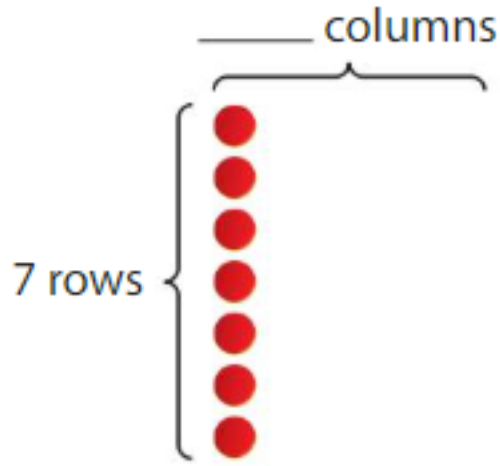
Complete the model and find the quotient.

1. Find 18 ÷ 6.



18 ÷ 6 = _____

2. Find 35 ÷ 7.



35 ÷ 7 = _____

Find the quotient.

3. 42 ÷ 6 = _____

4. 28 ÷ 7 = _____

5. 54 ÷ 6 = _____

6. $7\overline{)49}$ quotient: $\square$

7. $7\overline{)70}$ quotient: $\square$

8. $6\overline{)30}$ quotient: $\square$

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English Spanish

Find the missing divisor.

9. $36 \div \_\_\_\_ = 6$ | **10.** $14 \div \_\_\_\_ = 7$ | **11.** $60 \div \_\_\_\_ = 6$

12. **Number Sense** There are 7 continents. A scientist has 63 days to spend studying on all the continents. She wants to spend an equal number of days on each one. How many days can she spend on each continent?

13. **Logic** I am an odd number. When you multiply me by 6, then divide the product by 3, the quotient is 10. What number am I?

14. **DIG DEEPER!** You deal 52 cards to 7 players. Does each player get the same number of cards? Explain.

15. **Modeling Real Life** There are 70 students at a summer camp. A counselor divides the students into teams of 10. How many more teams would the counselor make if he divides the students into teams of 7?

16. **Modeling Real Life** There are 31 students in your class. Seven students are called to the nurse's office to get their hearing checked. Your teacher divides the rest of the students into groups of 6. How many groups are there?

Review & Refresh

Find the product.

17. $\begin{array}{r} 8 \\ \times\ 6 \\ \hline \end{array}$ | **18.** $\begin{array}{r} 9 \\ \times\ 8 \\ \hline \end{array}$ | **19.** $\begin{array}{r} 10 \\ \times\ 8 \\ \hline \end{array}$ | **20.** $\begin{array}{r} 8 \\ \times\ 0 \\ \hline \end{array}$ | **21.** $\begin{array}{r} 1 \\ \times\ 8 \\ \hline \end{array}$

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English Spanish

Name _____

Divide by 8 or 9

4.6

Learning Target: Divide a number by 8 or 9.

Success Criteria:

- I can model dividing by 8 or 9.
- I can find the quotient of a number and 8 or 9.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.6
MAFS.3.OA.3.7

Explore and Grow

Use repeated subtraction to find 48 ÷ 8.

MP **Reasoning** How many times did you subtract 8 from 48? Does the quotient represent the number of groups or the size of the groups? Explain.

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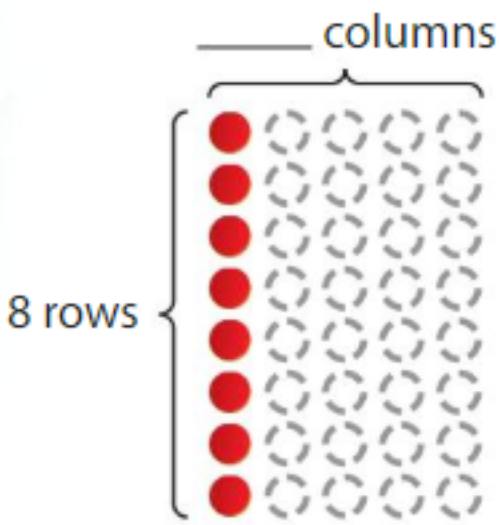
English Spanish

Think and Grow: Divide by 8 or 9

Example Find $40 \div 8$.

Think: 8 times what number is 40?

$8 \times \_\_\_\_ = 40$

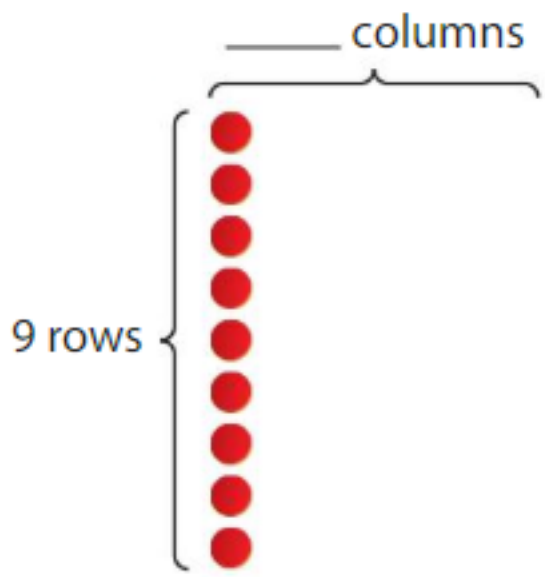


$40 \div 8 = \_\_\_\_$ or $8\overline{)40}$

Example Find $54 \div 9$.

Think: 9 times what number is 54?

$9 \times \_\_\_\_ = 54$

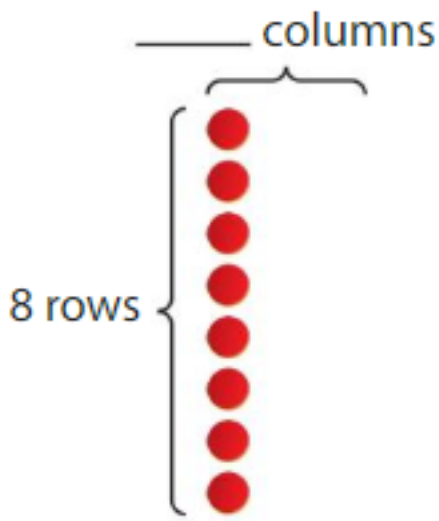


$54 \div 9 = \_\_\_\_$ or $9\overline{)54}$

Show and Grow

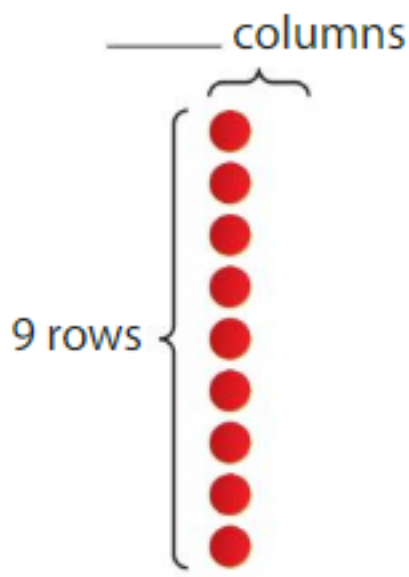
Complete the model and find the quotient.

1. $24 \div 8 = \_\_\_\_$



$24 \div 8 = \_\_\_\_$

2. $18 \div 9 = \_\_\_\_$



$18 \div 9 = \_\_\_\_$

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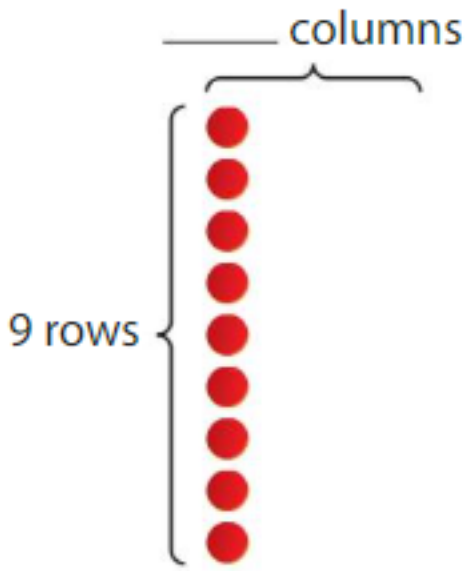
English Spanish

Name _____

Apply and Grow: Practice

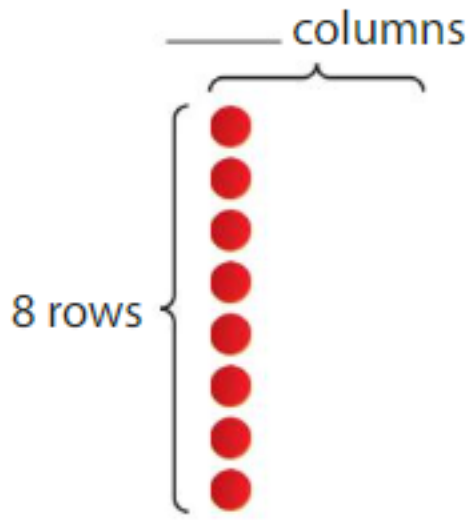
Complete the model and find the quotient.

3. Find 36 ÷ 9.



36 ÷ 9 = _____

4. Find 32 ÷ 8.



32 ÷ 8 = _____

Find the quotient.

5. 45 ÷ 9 = _____

6. 56 ÷ 8 = _____

7. 90 ÷ 9 = _____

8. $9\overline{)18}$ (□)

9. $8\overline{)48}$ (□)

10. $8\overline{)16}$ (□)

11. Divide 54 by 9.

12. Divide 64 by 8.

13. Divide 63 by 9.

Compare.

14. 81 ÷ 9 ◯ 72 ÷ 8

15. 72 ÷ 9 ◯ 40 ÷ 8

16. 16 ÷ 8 ◯ 27 ÷ 9

17. A comic book has 63 pages. You read 9 pages each night. How many nights will it take to read the entire book?

18. MP **Logic** Find the missing number.

★
$\star\overline{)64}$

★ = _____

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English Spanish

Think and Grow: Modeling Real Life

There are 9 innings in a baseball game. The table shows how many innings Newton played each season. How many games has Newton played in all?

Season	Innings Played
Season 1	81
Season 2	63

Division equation:

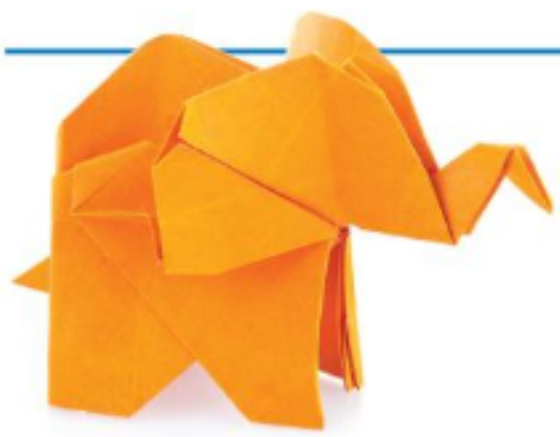
Newton played _____ games in all.

Show and Grow

19. The third-grade and fourth-grade classes are going on a field trip. A van can carry 8 students. How many vans are needed in all?

Grade	Number of Students
3	48
4	56

20. Seventy-two ballet dancers are arranged into an array with 9 columns. How many dancers are in each column?



21. You make 15 paper elephants and 17 paper lions. You give all of the animals away to 8 friends. Each friend gets the same number of animals. How many animals does each friend get?

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English Spanish

Name _____

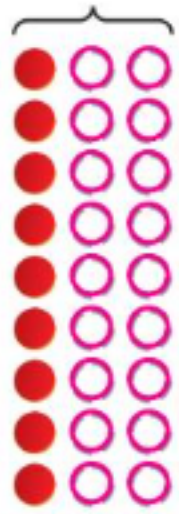
Homework & Practice 4.6

Learning Target: Divide a number by 8 or 9.

Example Find 27 ÷ 9.

3 columns

9 rows



27 ÷ 9 = 3 or $9\overline{)27}$ → 3

Complete the model and find the quotient.

1. Find 16 ÷ 8.

_____ columns

8 rows

16 ÷ 8 = _____

2. Find 45 ÷ 9.

_____ columns

9 rows

45 ÷ 9 = _____

Find the quotient.

3. 48 ÷ 8 = _____

4. 63 ÷ 9 = _____

5. 54 ÷ 9 = _____

6. $8\overline{)32}$

7. $8\overline{)72}$

8. $9\overline{)18}$

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English Spanish

Compare.

9. $90 \div 9 \bigcirc 80 \div 8$ | **10.** $27 \div 9 \bigcirc 56 \div 8$ | **11.** $72 \div 9 \bigcirc 40 \div 8$

12. A food truck owner needs 64 whole wheat pitas. The pitas come in packages of 8. How many packages should she buy?

13. **Patterns** Complete the division tables.

÷	8		24	32		48	56		72	80
8		2			5			8		

÷		18		36	45	54		72	81	
9	1		3				7			10

14. **Structure** Describe two different ways to find $54 \div 9$.

15. **Modeling Real Life** A youth group leader is preparing for a remote-control car race. Batteries are sold in packs of 8. How many packs of batteries should he buy?

Item	Number of Batteries Needed
Cars	48
Remotes	24

16. **Modeling Real Life** Newton divides 32 treats equally between 8 friends. Descartes divides 27 treats equally between 9 friends. Whose friends get more treats? Explain.

Review & Refresh

Find the missing factor.

17. $\_\_\_\_ \times 4 = 0$ | **18.** $1 \times \_\_\_\_ = 2$ | **19.** $9 \times \_\_\_\_ = 9$

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English Spanish

Name _____

Divide with 0 or 1

4.7

Learning Target: Divide with 0 or 1.

Success Criteria:

- I can find the quotient when dividing a number by 1.
- I can find the quotient when dividing a number by itself.
- I can find the quotient when dividing 0 by a number.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.5
MAFS.3.OA.2.6
MAFS.3.OA.3.7

Explore and Grow

Find the quotients.

$12 \div 3 =$ _____	$8 \div 2 =$ _____	$4 \div 1 =$ _____
$9 \div 3 =$ _____	$6 \div 2 =$ _____	$3 \div 1 =$ _____
$6 \div 3 =$ _____	$4 \div 2 =$ _____	$2 \div 1 =$ _____
$3 \div 3 =$ _____	$2 \div 2 =$ _____	$1 \div 1 =$ _____
$0 \div 3 =$ _____	$0 \div 2 =$ _____	$0 \div 1 =$ _____

MP **Structure** What patterns do you notice? Use the patterns to find each quotient.

$52 \div 52 =$ _____ $0 \div 52 =$ _____ $52 \div 1 =$ _____

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English Spanish

Think and Grow: Divide with 0 or 1

Dividing a number by 1 or itself:

- Any number divided by 1 is itself.
- Any number (except 0) divided by itself is 1.

Example Find $7 \div 1$.

Think: 1 times what number is 7?

$1 \times \_\_\_\_ = 7$

Write: $7 \div 1 = \_\_\_\_$

Example Find $5 \div 5$.

Think: 5 times what number is 5?

$5 \times \_\_\_\_ = 5$

Write: $5 \div 5 = \_\_\_\_$

Dividing with 0:

- 0 divided by any number (except 0) is 0.
- You cannot divide by 0.

Example Find $0 \div 8$.

Think: 8 times what number is 0?

$8 \times \_\_\_\_ = 0$

Write: $0 \div 8 = \_\_\_\_$

Example Find $9 \div 0$.

Think: 0 times what number is 9?

There is no such number. So, you cannot divide by 0.

Show and Grow

Write the related multiplication fact. Then find the quotient.

1. $2 \div 2 = \_\_\_\_$

2. $0 \div 3 = \_\_\_\_$

3. $10 \div 1 = \_\_\_\_$

4. $25 \div 25 = \_\_\_\_$

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English Spanish

Name _____

Apply and Grow: Practice

Write the related multiplication fact. Then find the quotient.

5. $6 \div 1 =$ _____

6. $0 \div 2 =$ _____

7. $9 \div 9 =$ _____

8. $8 \div 1 =$ _____

Find the quotient.

9. $5 \div 1 =$ _____

10. $0 \div 7 =$ _____

11. $4 \div 4 =$ _____

12. $\square$)15

13. $\square$)0

14. $\square$)24

Find the missing dividend or divisor.

15. $2 \div$ _____ $= 2$

16. _____ $\div 12 = 0$

17. $8 \div$ _____ $= 1$

Compare.

18. $4 \div 1 \bigcirc 3 \div 1$

19. $0 \div 6 \bigcirc 0 \div 9$

20. $0 \div 5 \bigcirc 7 \div 1$

21. There are 2 cheese blocks. Each mousetrap has 1 cheese block on it. How many mousetraps are there?

22. MP **Reasoning** Your friend says $14 \div 0$ and $0 \div 14$ both equal 0. Is your friend correct? Explain.

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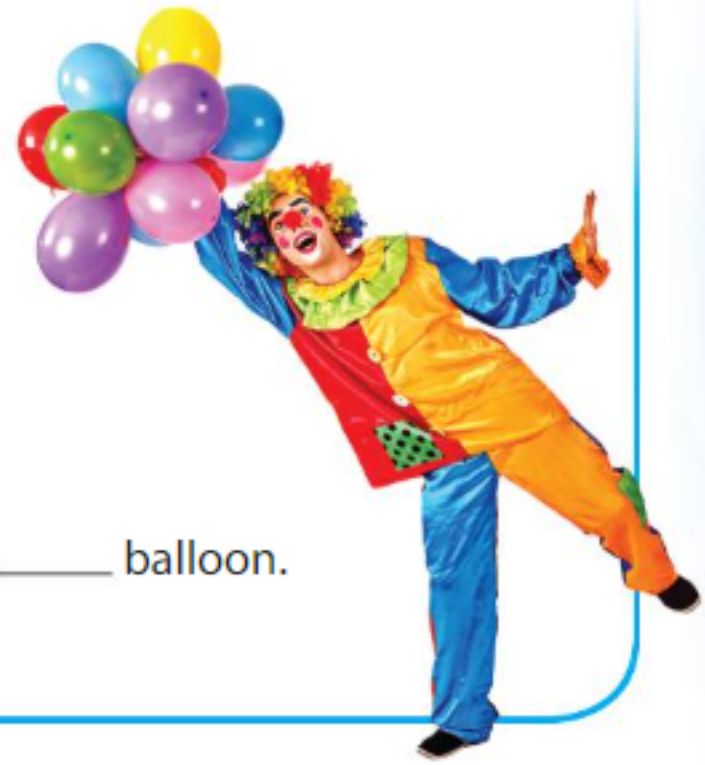
Think and Grow: Modeling Real Life

A clown shares 10 balloons equally with 10 children. How many balloons does each child receive?



Division equation:

Each child receives _____ balloon.

Show and Grow

23. You have 9 tokens. You need 1 token to play an arcade game. How many games can you play?

24. You have 9 quarters. You put 5 of them in your backpack. You divide the other quarters equally among 4 friends. How many quarters does each friend get?

25. You ask your friend the question below.

"What is 475 divided by 475?"

Your friend immediately says 1. How does your friend solve the problem so quickly? Explain.

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English Spanish

Name _____

Homework & Practice 4.7

Learning Target: Divide with 0 or 1.

Example Find 5 ÷ 1.

Any number divided by 1 is itself.

So, 5 ÷ 1 = 5.

Example Find 0 ÷ 5.

0 divided by any number (except 0) is 0.

So, 0 ÷ 5 = 0.

Example Find 5 ÷ 5.

Any number (except 0) divided by itself is 1.

So, 5 ÷ 5 = 1.

Example Find 5 ÷ 0.

There is no such number.

So, you cannot divide by 0.

Write the related multiplication fact. Then find the quotient.

1. 3 ÷ 1 = _____

2. 0 ÷ 7 = _____

Find the quotient.

3. 8 ÷ 1 = _____

4. 0 ÷ 2 = _____

5. 7 ÷ 7 = _____

6. $12\overline{)12}$

7. $1\overline{)4}$

8. $10\overline{)0}$

Find the missing dividend or divisor.

9. _____ ÷ 3 = 0

10. 10 ÷ _____ = 10

11. _____ ÷ 4 = 0

Compare.

12. 0 ÷ 7 ◯ 0 ÷ 1

13. 0 ÷ 9 ◯ 2 ÷ 1

14. 6 ÷ 1 ◯ 6 ÷ 6

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English Spanish

15. **Reasoning** How are the multiplication rules for 0 and 1 similar to the division rules for 0 and 1? How are they different?

16. **Number Sense** Which has the greatest quotient?

$6 \div 6$ $4 \div 1$ $0 \div 8$ $3 \div 1$

17. **DIG DEEPER!** Use the numbers 0, 1, 5, and 10 to make the number sentence true.

____ ÷ ____ < ____ ÷ ____

18. **Modeling Real Life** There are 5 bird eggs. An equal number of eggs hatch each day for 5 days. How many eggs hatch each day?

19. **Modeling Real Life** A hotel orders twenty-four 48-inch televisions and twenty-six 60-inch televisions. The hotel puts 1 television in each room. How many rooms can get a new television?

Review & Refresh

Find the product.

20. $2 \times 4 \times 1 =$ ____	**21.** $2 \times 3 \times 5 =$ ____	**22.** $2 \times 3 \times 7 =$ ____
23. $5 \times (2 \times 9) =$ ____	**24.** $2 \times (3 \times 3) =$ ____	**25.** $2 \times (8 \times 1) =$ ____

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English Spanish

Name _____

Practice Division Strategies 4.8

Learning Target: Use a strategy to divide.

Success Criteria:

- I can choose a strategy to solve a division problem.
- I can divide and write the quotient.
- I can explain the strategy I used.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.2.6
MAFS.3.OA.3.7

Explore and Grow

Use any strategy to find the quotient.

$36 \div 4 =$ _____

MP **Construct Arguments** What other strategies can you use to solve? Explain the strategy to your partner.

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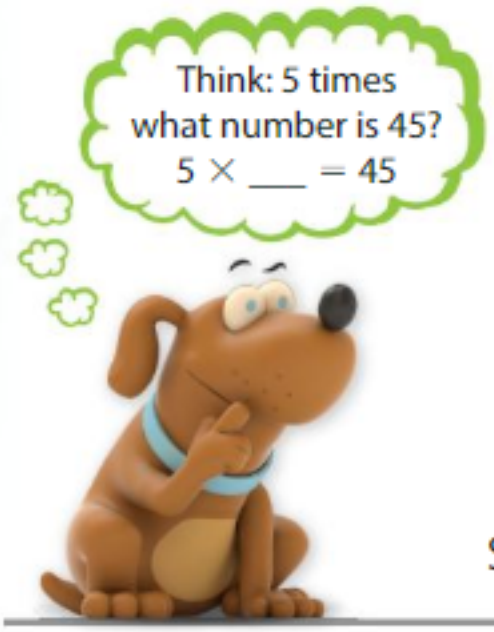
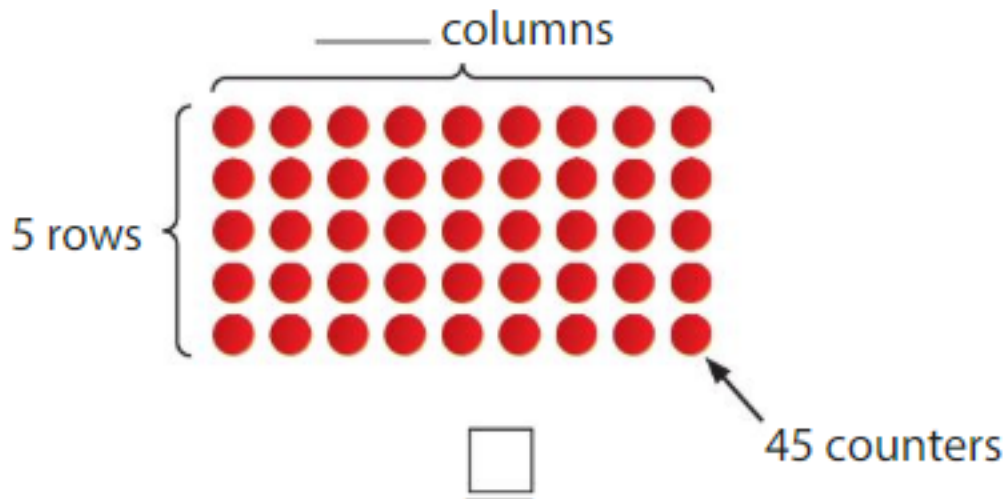
English Spanish

Think and Grow: Practice Division Strategies

Example Find 45 ÷ 5.

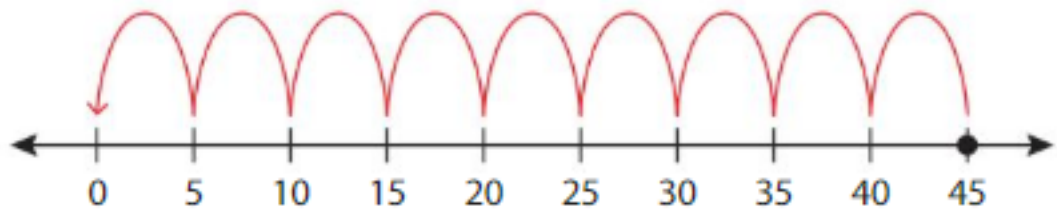
One Way: Use a multiplication fact. Draw an array to help.





So, 45 ÷ 5 = _____ or $5\overline{)45}$.

Another Way: Use a number line. Start at 45. Count back by 5s until you reach 0.



So, 45 ÷ 5 = _____ or $5\overline{)45}$.

Show and Grow

Use any strategy to find the quotient.

1. 30 ÷ 6 = _____

2. 56 ÷ 8 = _____

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Name _____

Apply and Grow: Practice

Use any strategy to find the quotient.

3. $40 \div 10 =$ _____

4. $18 \div 3 =$ _____

5. $49 \div 7 =$ _____

6. _____ $= 36 \div 9$

7. _____ $= 4 \div 4$

8. _____ $= 18 \div 2$

9. $\square$ $1\overline{)12}$

10. $\square$ $5\overline{)40}$

11. $\square$ $8\overline{)48}$

12. $\square$ $6\overline{)24}$

13. $\square$ $4\overline{)20}$

14. $\square$ $7\overline{)21}$

15. $\square$ $2\overline{)20}$

16. $\square$ $7\overline{)0}$

17. Divide 54 by 6.

18. Divide 27 by 9.

19. Divide 70 by 10.

20. A construction worker wants to build a 32-foot-long wall in 8 hours. How many feet should he complete each hour so that it is built on time?

21. **Writing** How can you use multiplication to help find $42 \div 7$? Explain.

22. **YOU BE THE TEACHER** Your friend says she only needs to write two equations for the 4, 4, 16 fact family. Is your friend correct? Explain.

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Think and Grow: Modeling Real Life

There are 72 oranges at a grocery store arranged into an array with 9 columns. There are 80 lemons arranged into an array with 8 columns. Which fruit has more rows?

Models:

Division equations:

The _____ have more rows.

Show and Grow

23. There are 63 peaches arranged into an array with 7 rows. There are 70 pears arranged into an array with 10 rows. Which fruit has more columns?

24. Newton has 20 quarters. He wants to trade all of them for bills. How many $1 bills would he get? How many $5 bills would he get?

25. A box of fruit snacks costs $5. Each box has 8 bags. Descartes spends $20 on fruit snacks. How many bags of fruit snacks does he get?

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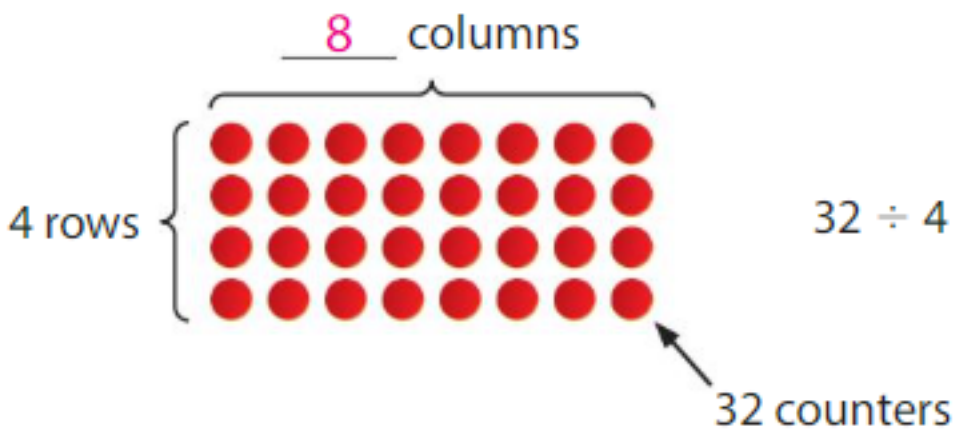
English Spanish

Name _____

Homework & Practice 4.8

Learning Target: Use a strategy to divide.

Example Find 32 ÷ 4.



32 ÷ 4 = 8 or $4\overline{)32}$ with 8 above

Use any strategy to find the quotient.

1. 8 ÷ 1 = _____

2. 25 ÷ 5 = _____

3. 72 ÷ 8 = _____

4. _____ = 45 ÷ 9

5. _____ = 0 ÷ 3

6. _____ = 18 ÷ 2

7. $9\overline{)27}$

8. $7\overline{)14}$

9. $2\overline{)20}$

10. $3\overline{)12}$

11. $16\overline{)16}$

12. $10\overline{)70}$

13. $5\overline{)30}$

14. $8\overline{)64}$

15. Divide 60 by 6.

16. Divide 9 by 3.

17. Divide 63 by 9.

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18. DIG DEEPER! Without dividing, how can you tell which quotient is smaller, $30 \div 5$ or $30 \div 6$? Explain.

---

19. **Number Sense** Which expressions have a quotient of 7?

$70 \div 10$ $\quad$ $64 \div 8$ $\quad$ $35 \div 5$ $\quad$ $42 \div 7$

$21 \div 3$ $\quad$ $24 \div 8$ $\quad$ $7 \div 1$

---

20. **Reasoning** Use $+$, $-$, $\times$, or $\div$ to complete the equations.

$3 \bigcirc 3 = 18 \div 2$ $\quad$ $6 \times 8 = 19 \bigcirc 29$ $\quad$ $100 \bigcirc 75 = 5 \times 5$

$15 \div 3 = 12 \bigcirc 7$ $\quad$ $36 \bigcirc 9 = 4 \times 1$ $\quad$ $60 \div 10 = 42 \bigcirc 7$

---

21. **Modeling Real Life** Newton has 60 dimes. He trades all of them for $1 bills. How many bills does he get?

---

22. **Modeling Real Life** Two girls are getting braids in their hair. The first girl wants a total of 30 beads with 3 beads on each braid. The second girl wants a total of 45 beads with 5 beads on each braid. Which girl has more braids?

Review & Refresh

Find the sum.

23.
$$\begin{array}{r} 460 \\ +\ 137 \\ \hline \end{array}$$

24.
$$\begin{array}{r} 625 \\ +\ 297 \\ \hline \end{array}$$

25.
$$\begin{array}{r} 386 \\ +\ 364 \\ \hline \end{array}$$

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Name _____

Problem Solving: Division 4.9

Learning Target: Use the problem-solving plan to solve word problems.

Success Criteria:

- I can understand a problem.
- I can make a plan to solve.
- I can solve a problem.

FLORIDA STANDARDS

MAFS.3.OA.1.3
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Use any strategy to solve.

There are 27 cups for a cup-stacking game. There are 3 players. Each player gets an equal number of cups. How many cups does each player get?

MP **Reasoning** Compare your strategy to your partner's strategy. How are they the same? How are they different?

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Think and Grow: Using the Problem-Solving Plan

Example Newton buys a box of flower vases. The box has 2 rows with 4 vases in each row. The box costs $48. How much does each vase cost?

Understand the Problem

What do you know?

- The box has _____ rows of vases.
- Each row has _____ vases.
- The box costs _____.

What do you need to find?

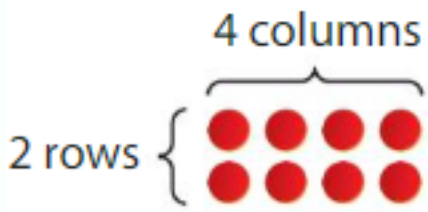
- You need to find how much each _____ costs.

Make a Plan

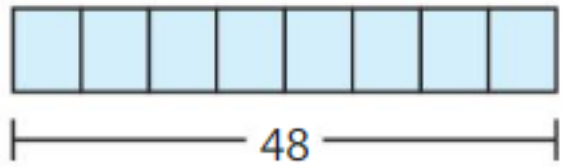
How will you solve?

- Multiply _____ by _____ to find how many _____ are in the box.
- Then divide _____ by the product.

Solve



$2 \times 4 = \_\_\_\_$



$48 \div \_\_\_\_ = \_\_\_\_$

Each vase costs _____.

Show and Grow

1. Descartes buys 3 packs of colored pencils and a backpack. He spends $33. The backpack costs $12. Each pack of colored pencils costs the same amount. How much is each pack of colored pencils?

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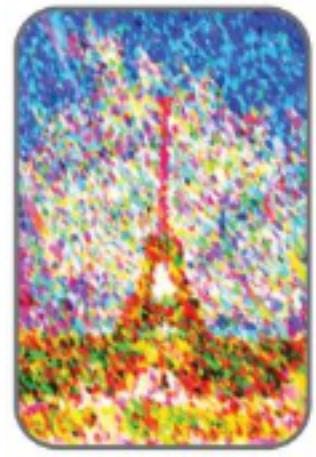
English Spanish

Name _____

Apply and Grow: Practice

2. You have 4 pages of homework and 2 chores to complete before you get free time. Each task takes 7 minutes to complete. You have 60 minutes until dinner. What information do you know that will help you find how much free time you will have before dinner?

3. You are using dots to create a picture. You use 99 dots in all. Forty-six are blue. Thirty-five are purple. You use an equal number of yellow and green dots for the rest of the picture. How many green dots are in your picture?



4. You are making oatmeal for each of your 4 family members. You have 36 raisins and 20 blueberries. You want everyone to get an equal number of each. How many raisins and how many blueberries should you put in each bowl?

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Think and Grow: Modeling Real Life

You have 2 boxes of crayons. One box has 24 crayons. The other box has 48 crayons. Eighteen of the crayons are broken. You put the crayons that are not broken into 6 equal groups. How many crayons are in each group?

Understand the problem:

Make a plan:

Solve:

There are _____ crayons in each group.

Show and Grow

5. You have 2 bags of beach glass. One bag has 17 pieces. The other bag has 18 pieces. You give 5 pieces to your friend. You sort the rest of the pieces into 3 equal groups. How many pieces are in each group?

Explain how you can check your answer.

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Name _____

Homework & Practice 4.9

Learning Target: Use the problem-solving plan to solve problems.

Example A grocery store has 3 crates of 10 pineapples. The manager wants to display the pineapples in rows of 5. How many rows of pineapples are there?

Understand the Problem

What do you know?

- There are 3 crates.
- There are 10 pineapples in each crate.
- The manager wants rows of 5 pineapples.

What do you need to find?

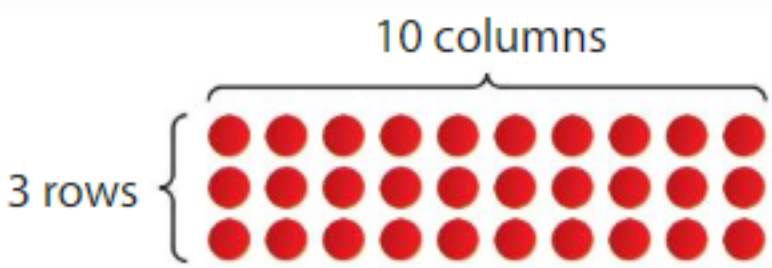
- You need to find how many rows of pineapples there are.

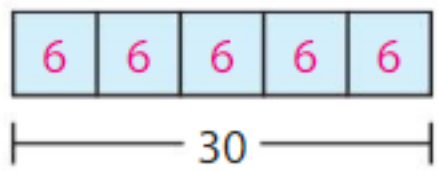
Make a Plan

How will you solve?

- Multiply 3 by 10 to find how many pineapples there are in all.
- Then divide the product by 5.

Solve





$3 \times 10 =$ 30

30 $\div 5 =$ 6

There are 6 rows of pineapples.

1. A truck carries 4 chairs and a table. The table weighs 35 pounds. The total weight of the chairs and table is 63 pounds. How much does each chair weigh?

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English Spanish

2. You volunteer at a nursing home for 3 hours a day. You volunteered 6 hours last week and 12 hours this week. How many days did you volunteer?

3. **Writing** Write and solve your own word problem involving division.

4. **Modeling Real Life** You have 2 trays of flavored ice cubes. One tray has 16 ice cubes. The other tray has 12 ice cubes. Eight of the ice cubes are not completely frozen yet. You divide the frozen ice cubes equally into 5 glasses. How many ice cubes are in each glass?

5. **Modeling Real Life** You have 2 bags of seashells. One bag has 13 seashells. The other bag has 25 seashells. You give 6 seashells to your friend. You sort the rest of the seashells into 4 equal groups. How many seashells are in each group?

Review & Refresh

6.

_____ sides

_____ vertices

Shape: _____

7.

_____ sides

_____ vertices

Shape: _____

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English Spanish

Name _____

Performance Task 4

You, your friend, and your cousin run for class president. Three teachers and 60 students are gathered in the gym for the election.

1. There is one teacher in each row. Each row has the same number of students. Find the number of people sitting in each row.

2. Sixty students vote in the election. Thirty students vote for you. Twenty students vote for your friend. Five students vote for your cousin.

a. How many students still need to vote?

b. The remaining students all vote for your cousin. Complete the picture graph.

Election Results	
You	
Friend	
Cousin	

Each ☺ = 5 students.

3. As class president, you raise $95 to buy new toys for the school playground. Each ball costs $8 and each flying disc costs $6. You want to buy some balls and 3 flying discs. How many balls can you buy? How much money do you have left?

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Four in a Row Blastoff!

Directions:

1. Players take turns rolling the die.
2. On your turn, choose and solve any division expression in the row of your roll. If you find the correct answer, place a counter on the space.
3. The first player to create 4 counters in a row, horizontally, vertically, or diagonally, wins! A spaceship blasts off! Cross out one spaceship and play again until all spaceships have blasted off!

6 ÷ 1	2 ÷ 1	4 ÷ 1	3 ÷ 1	1 ÷ 1	5 ÷ 1
8 ÷ 2	12 ÷ 2	18 ÷ 2	10 ÷ 2	16 ÷ 2	4 ÷ 2
12 ÷ 3	21 ÷ 3	18 ÷ 3	9 ÷ 3	15 ÷ 3	6 ÷ 3
16 ÷ 4	8 ÷ 4	20 ÷ 4	12 ÷ 4	24 ÷ 4	32 ÷ 4
35 ÷ 5	10 ÷ 5	20 ÷ 5	40 ÷ 5	30 ÷ 5	25 ÷ 5
18 ÷ 6	42 ÷ 6	12 ÷ 6	36 ÷ 6	24 ÷ 6	30 ÷ 6

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Name _____

Chapter Practice 4

4.1 Use Arrays to Divide

1. There are 20 counters. The counters are in 4 equal rows. How many counters are in each row?

4 rows of _____

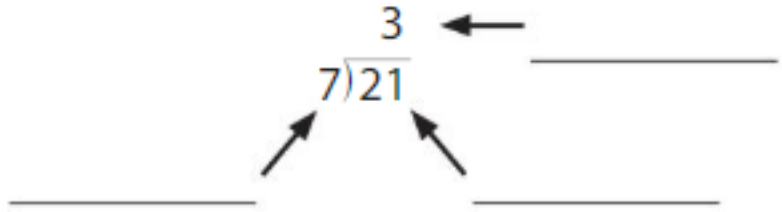
20 ÷ 4 = _____

2. You have 32 counters. You arrange them with 8 counters in each row. How many rows of counters do you make?

_____ rows of 8

32 ÷ 8 = _____

3. MP **Precision** Label the parts of the division problem using *quotient*, *dividend*, and *divisor*.



4.2 Relate Multiplication and Division

Write the fact family for the numbers.

4. 1, 5, 5

5. 2, 7, 14

6. 9, 5, 45

7. 8, 6, 48

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4.3 Divide by 2, 5, or 10

Write the related multiplication fact. The find the quotient.

8. Find $15 \div 5$.

$5 \times \_\_\_\_ = 15$

$15 \div 5 = \_\_\_\_$

9. Find $14 \div 2$.

$2 \times \_\_\_\_ = 14$

$14 \div 2 = \_\_\_\_$

10. Find $40 \div 10$.

$10 \times \_\_\_\_ = 40$

$40 \div 10 = \_\_\_\_$

Find the quotient.

11. $60 \div 10 = \_\_\_\_$

12. $20 \div 5 = \_\_\_\_$

13. $20 \div 2 = \_\_\_\_$

14. $\square$ $5\overline{)25}$

15. $\square$ $2\overline{)18}$

16. $\square$ $10\overline{)30}$

4.4 Divide by 3 or 4

Find the quotient.

17. $18 \div 3 = \_\_\_\_$

18. $40 \div 4 = \_\_\_\_$

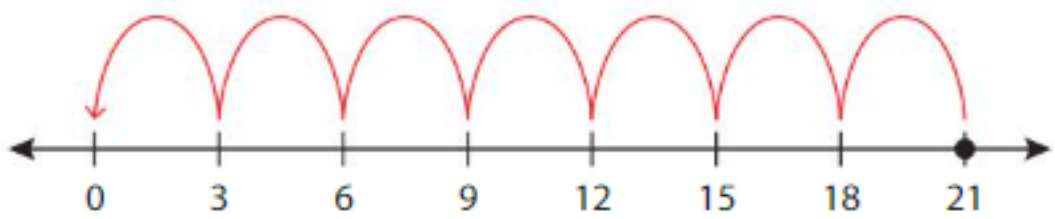
19. $24 \div 4 = \_\_\_\_$

20. $\square$ $3\overline{)27}$

21. $\square$ $4\overline{)12}$

22. $\square$ $3\overline{)24}$

23. MP **Structure** Write the division equation represented by the number line.



$\_\_\_\_ \div \_\_\_\_ = \_\_\_\_$

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4.5 Divide by 6 or 7

Find the quotient.

24. $42 \div 6 =$ _____

25. $54 \div 6 =$ _____

26. $28 \div 7 =$ _____

27. $\square$ $7\overline{)21}$

28. $\square$ $7\overline{)42}$

29. $\square$ $6\overline{)30}$

Find the missing divisor.

30. $18 \div$ _____ $= 6$

31. $35 \div$ _____ $= 7$

32. $36 \div$ _____ $= 6$

4.6 Divide by 8 or 9

Find the quotient.

33. $36 \div 9 =$ _____

34. $64 \div 8 =$ _____

35. $90 \div 9 =$ _____

36. $\square$ $8\overline{)32}$

37. $\square$ $9\overline{)45}$

38. $\square$ $8\overline{)56}$

Compare.

39. $63 \div 9$ ◯ $48 \div 8$

40. $32 \div 8$ ◯ $36 \div 9$

41. $54 \div 9$ ◯ $80 \div 8$

42. A crayon box has 48 crayons. There are 8 crayons in each row. How many rows of crayons are there?

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4.7 Divide with 0 or 1

Find the quotient.

43. $13 \div 13 =$ _____

44. $0 \div 9 =$ _____

45. $3 \div 1 =$ _____

46. $\square$ $1\overline{)2}$

47. $\square$ $5\overline{)0}$

48. $\square$ $10\overline{)10}$

49. MP **Number Sense** Which has the greatest quotient?

$15 \div 15$ $0 \div 10$ $6 \div 1$ $8 \div 1$

4.8 Practice Division Strategies

Use any strategy to find the quotient.

50. $16 \div 4 =$ _____

51. $72 \div 9 =$ _____

52. $20 \div 10 =$ _____

53. Divide 18 by 6.

54. Divide 49 by 7.

55. Divide 30 by 6.

4.9 Problem Solving: Division

56. **Modeling Real Life** A group of 13 servicemen and 11 servicewomen are being honored at an event. They stand in 3 equal rows. How many servicemen and servicewomen are in each row?

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English Spanish

Name _____

Cumulative Practice 1–4

1. Which expression is *not* the same as 6×3?

Ⓐ 3×6

Ⓑ $3 + 3 + 3 + 3 + 3 + 3$

Ⓒ $6 + 6 + 6$

Ⓓ $6 \times 6 \times 6$

---

2. Use the clues to find the number.

- The number is more than 10.
- The number is less than 20.
- When the number is divided by 3, the quotient is even.
- When the number is divided by 4, the quotient is odd.

What is the number?

Ⓐ 15 Ⓑ 12 Ⓒ 24 Ⓓ 16

---

3. Which expression is equal to 6×7?

Ⓐ $(7 \times 8) - 2$

Ⓑ $(5 \times 7) + (1 \times 7)$

Ⓒ $(5 \times 1) + (5 \times 2)$

Ⓓ $(5 \times 1) \times 7$

---

4. Which number makes the statement true?

$2 \times 4 = \square \times 2$

Ⓐ 4

Ⓑ 8

Ⓒ 16

Ⓓ 2

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5. Which equation is true?

Ⓐ $(5 \times 4) \times 1 \stackrel{?}{=} (5 \times 4) + 1$

Ⓑ $(5 \times 4) + 1 \stackrel{?}{=} (5 \times 4) \times 1$

Ⓒ $5 \times (4 \times 1) \stackrel{?}{=} (5 \times 4) \times 1$

Ⓓ $5 \times (4 \times 1) \stackrel{?}{=} 5 + (4 \times 1)$

---

6. You earn 10 points for each level you complete in a video game. When you have to restart a level, you lose 2 points. You complete 9 levels, but have to restart 6 levels. How many points do you have?

Ⓐ 78 points

Ⓑ 102 points

Ⓒ 90 points

Ⓓ 42 points

---

7. The table shows the numbers of items at the finish line of a race.

Think
Solve
Explain

Item	Number of Packages	Number in Each Package
Water bottles	9	8
Medals	7	9
Bananas	9	6

Part A How many medals are there?

Part B Sixty students are running in the race. Is there enough of each item for all of the students? Explain.

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8. Which numbers are multiples of 2, 5, and 10?

- ☐ 20
- ☐ 38
- ☐ 15
- ☐ 6

---

9. Newton and Descartes share 18 toys equally. Which equation shows how many toys each has?

- Ⓐ $18 \div 2 = 9$
- Ⓑ $18 - 2 = 16$
- Ⓒ $18 \times 2 = 36$
- Ⓓ $18 \div 1 = 18$

---

10. Which multiplication fact can Newton use to check his answer?

$$72 \div 8 = 9$$

- Ⓐ $9 \times 72 = \square$
- Ⓑ $9 \div 8 = \square$
- Ⓒ $72 \times 8 = \square$
- Ⓓ $9 \times 8 = \square$

---

11. Thirty dollars is divided evenly among 6 children. How much money (in dollars) does each child receive?

---

12. Which expressions have a product of 16?

- ☐ 4×4
- ☐ 3×5
- ☐ 2×8
- ☐ 6×3

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13. Which equation shows the Multiplication Property of Zero?

Ⓐ $8 + 0 = 8$

Ⓑ $8 - 0 = 8$

Ⓒ $8 \times 1 = 8$

Ⓓ $8 \times 0 = 0$

---

14. One ticket to an amusement park costs $8. How much does it cost for a family of 4?

Ⓐ $32

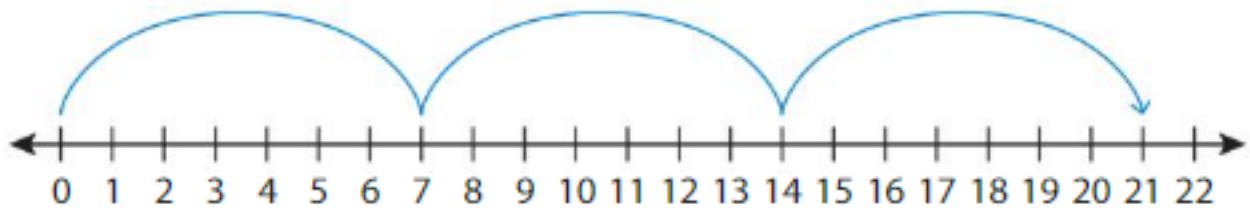
Ⓑ $48

Ⓒ $22

Ⓓ $38

---

15. Which expression is represented by this number line?



Ⓐ $21 + 3$

Ⓑ 3×7

Ⓒ $21 - 3$

Ⓓ $7 + 3$

---

16. Which equations are in the fact family for 2, 10, and 20?

☐ $2 \times 10 = 20$

☐ $10 \times 2 = 20$

☐ $4 \times 5 = 20$

☐ $20 \div 10 = 2$

☐ $20 \div 2 = 10$

☐ $20 \div 5 = 4$

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English Spanish

Name _____

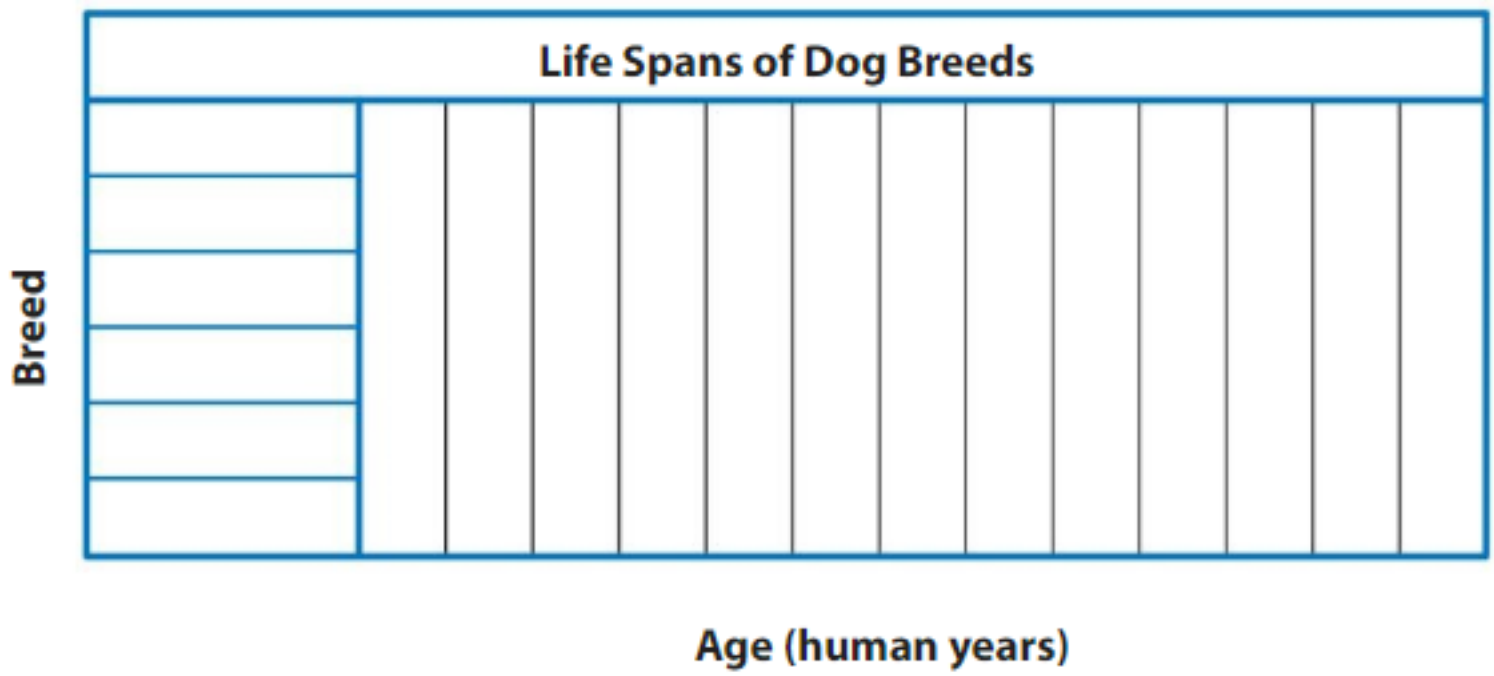
STEAM Performance Task 1–4

Dogs grow just like humans. They start as puppies, become adults, and then enter old age. But dogs age faster than humans. In general, to find the age of a small dog in dog years, multiply its age in human years by 5. To find the age of a large dog in dog years, multiply its age in human years by 7.

1. A small dog and a large dog are both 9 years old in human years. How old is each dog in dog years?

2. The table shows the usual life spans of 6 dog breeds in dog years. Find each life span in human years. Organize the data in a bar graph.

Life Spans of Dog Breeds (dog years)			
Small Dogs		**Large Dogs**	
Beagle	60	Great Dane	49
Pug	55	Saint Bernard	56
Pomeranian	50	German Shepherd	70



3. Write and answer a question about your graph.

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4. Cats also age faster than humans. The table shows the age of a cat for each human year.

Age (human years)	Age (cat years)
1	15
2	24
3	28
4	32
5	36

a. A cat is 6 years old in human years. If the pattern in the table continues, how old is the cat in cat years?

b. A cat is 10 years old in human years. How old is the cat in cat years?

c. A small dog, a large dog, and a cat are each 6 years old (in human years). Order the animals by their ages (in animal years) from least to greatest.

5. Use the Internet or another resource to answer each question.

a. What is another dog breed that is not listed in the table?

b. About how long, how tall, and how heavy is one of these dogs?

Length: _____ inches Height: _____ inches Weight: _____ pounds

c. What is one interesting fact about this dog breed?

d. About how long would you expect this breed to live?

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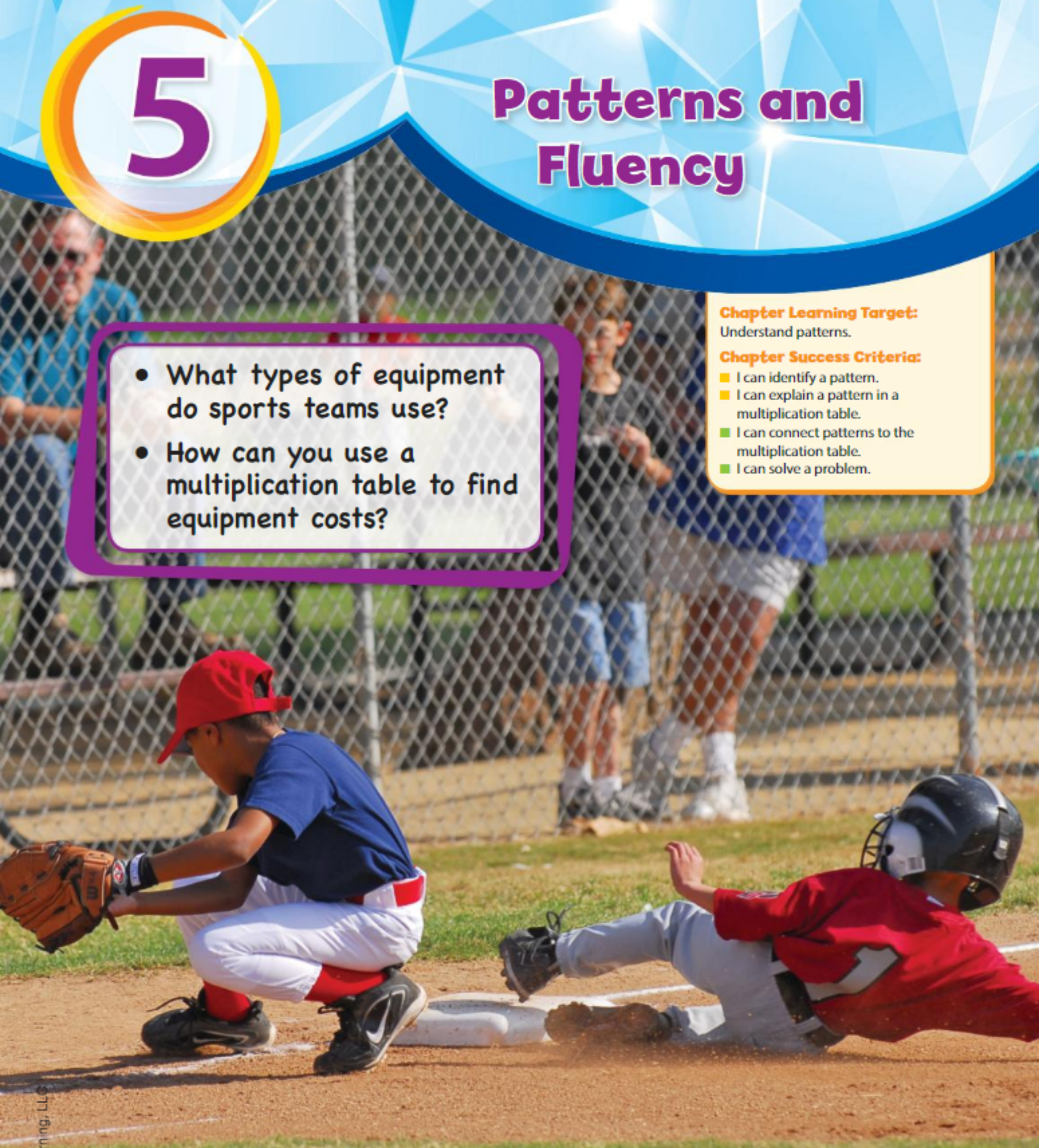
English Spanish

5 Patterns and Fluency

- What types of equipment do sports teams use?
- How can you use a multiplication table to find equipment costs?

Chapter Learning Target:
Understand patterns.

Chapter Success Criteria:
- I can identify a pattern.
- I can explain a pattern in a multiplication table.
- I can connect patterns to the multiplication table.
- I can solve a problem.



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Name _____

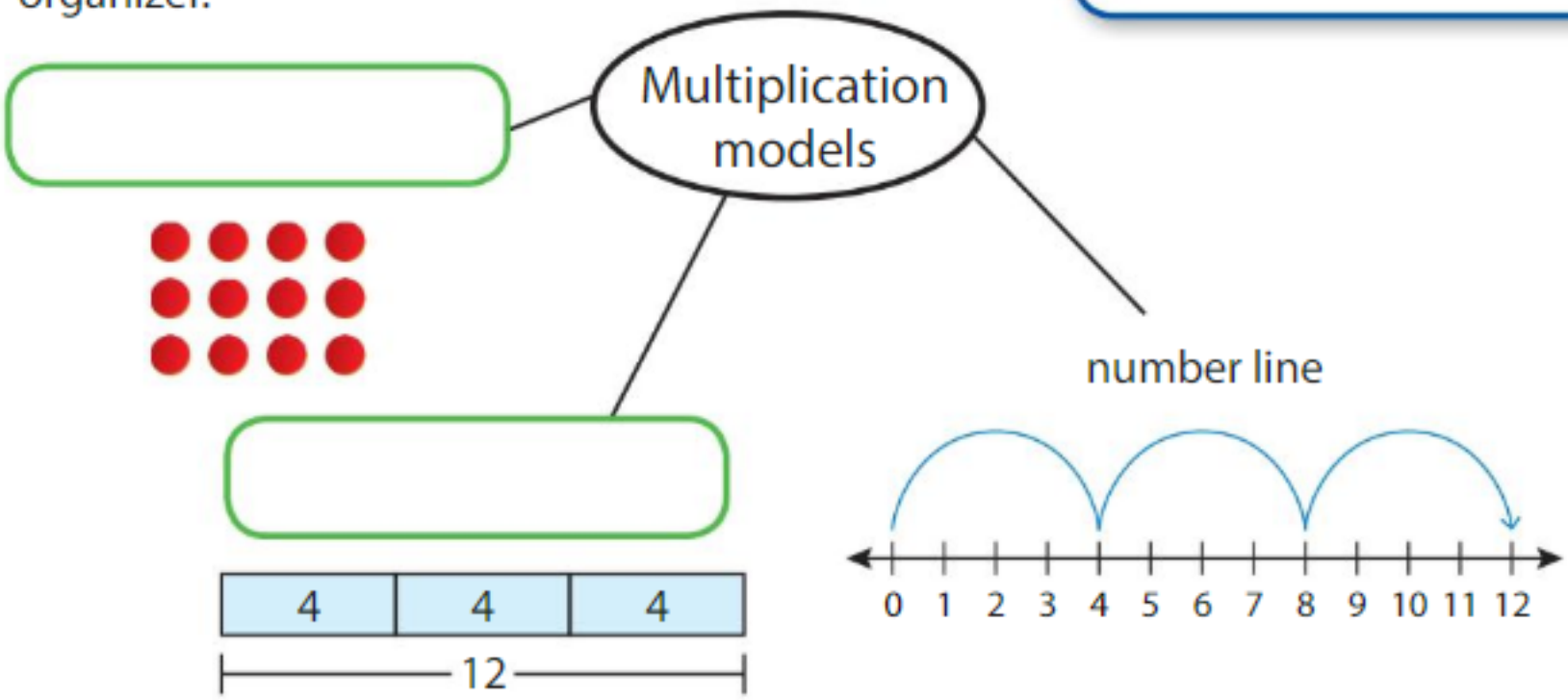
5 Vocabulary

Review Words

array
factors
product
tape diagram

Organize It

Use the review words to complete the graphic organizer.



Define It

Use the review words above to identify the word.
Find the word in the word search.

1. The answer to a multiplication problem
2. Numbers that are multiplied to get a product

D	P	L	F	A	M	R	O
T	I	R	A	L	Z	U	P
S	E	M	C	X	H	A	L
P	R	A	T	I	D	U	K
F	C	Q	O	A	R	G	B
N	Z	P	R	L	J	I	O
U	A	W	S	E	T	B	V
L	P	R	O	D	U	C	T

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English Spanish

Name _____

5.1 Identify Patterns in the Multiplication Table

Learning Target: Identify, explain, and use patterns related to the multiplication table.

Success Criteria:

- I can identify and explain a pattern in the multiplication table.
- I can use a pattern to solve a problem.

FLORIDA STANDARDS

MAFS.3.OA 3.7
MAFS.3.OA.4.9

Explore and Grow

Complete the table.

×	1	2	3	4	5
1	1 × 1	1 × 2	1 × 3	1 × 4	1 × 5
2	2 × 1	2 × 2	2 × 3 6	2 × 4	2 × 5
3	3 × 1 3	3 × 2	3 × 3	3 × 4	3 × 5
4	4 × 1	4 × 2	4 × 3	4 × 4	4 × 5 20
5	5 × 1	5 × 2	5 × 3	5 × 4	5 × 5

MP **Structure** Describe a pattern you notice.

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English Spanish

Think and Grow: The Multiplication Table

Example Identify the property shown by the pattern in the multiplication table.

$(1 \times 3) + (1 \times 5) = 1 \times (3 + 5)$

$(2 \times 3) + (2 \times 5) = 2 \times (3 + 5)$

$(3 \times 3) + (3 \times 5) = 3 \times (3 + 5)$

Describe the pattern in your own words.

What property does the pattern show?

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

factors

products

products

factors

Show and Grow

1. Show how the Distributive Property works for other columns above.

2. Describe the pattern shown by the shaded products in the multiplication table.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Look at the factors of the shaded products that are the same. What do you notice?

What property explains this pattern?

Shade a different diagonal in the table that shows a similar pattern as the shaded products.

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English Spanish

Name _____

Apply and Grow: Practice

Use the multiplication table.

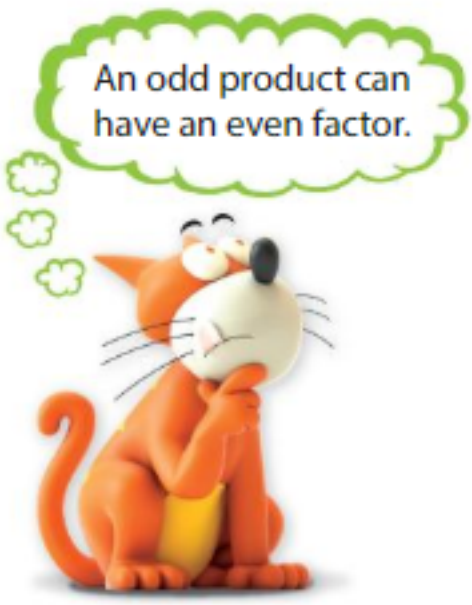
3. Shade the rows for 2, 4, 6, 8, and 10 one color. Describe the pattern in the products.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

4. Compare the rows for 2 and 4. Describe the pattern in the products.

5. Shade the rows for 1, 3, 5, 7, and 9 another color. Describe the pattern in the products. What do you notice about the products and their factors?

6. **YOU BE THE TEACHER** Is Descartes correct? Explain.



7. **DIG DEEPER!** Does the multiplication table above have more even products or more odd products? Explain.

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English Spanish

Think and Grow: Modeling Real Life

Newton earns the same amount of money each week. The multiplication table shows the amount (in dollars) he earns after 2 weeks, 4 weeks, and 6 weeks. If the pattern continues, how much money will he earn after 10 weeks?

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Describe the pattern.

Newton will earn $_____ after 10 weeks.

Show and Grow

8. You plant a 10-inch-tall bamboo cane in the ground. It grows the same number of inches each day. Find and shade the pattern in the multiplication table above. How many inches does the bamboo grow each day?

Day	Inches Grown
2	6
4	12
6	18

How tall is the bamboo after 6 days? If the pattern continues, how tall will the bamboo be after 8 days?

DIG DEEPER! A different type of bamboo grows two times as fast. Explain how you can use the multiplication table to find how many inches this bamboo will grow in 8 days.

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English Spanish

Name _____

Homework & Practice 5.1

Learning Target: Identify, explain, and use patterns related to the multiplication table.

Example Use the multiplication table.

×	1	2	3	4	5	6
1	1	2	3	4	5	6
2	2	4	6	8	10	12
3	3	6	9	12	15	18
4	4	8	12	16	20	24
5	5	10	15	20	25	30
6	6	12	18	24	30	36

Describe the pattern in the shaded row and column.

The numbers are the same.

What property explains this pattern?

Commutative Property of Multiplication

1. Use the multiplication table.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Look at the shaded products. Describe the pattern.

Look at the factors of the shaded products that are the same. What do you notice?

What property explains this pattern?

What do you notice about the factors of the shaded product that does not repeat? Explain why you think this happens.

Shade a different diagonal in the table that shows a similar pattern as the shaded products.

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English Spanish

2. YOU BE THE TEACHER Descartes says the product of a number and 6 is double the product of that same number and 3. Is he correct? Explain.

×	1	2	3	4	5	6	7	8
1	1	2	3	4	5	6	7	8
2	2	4	6	8	10	12	14	16
3	3	6	9	12	15	18	21	24
4	4	8	12	16	20	24	28	32

3. Modeling Real Life A 10-pound Great Dane puppy gains the same number of pounds each week. The multiplication table shows how many pounds she gains after 2 weeks, 4 weeks, and 6 weeks. How many pounds does she gain each week?

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

How much does the puppy weigh after 6 weeks?

If she continues to gain the same number of pounds each week, how much will she weigh after 7 weeks?

Another puppy gains 6 pounds in 2 weeks and 12 pounds in 4 weeks. How many pounds does he gain each week?

Review & Refresh

4. A total of 20 horses are divided equally into 4 races. How many horses are in each race?

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English Spanish

Name _____

Use the Multiplication Table

5.2

Learning Target: Use the multiplication table to write related multiplication and division facts.

Success Criteria:

- I can use the multiplication table to find a product.
- I can use the multiplication table to find a quotient.
- I can use the multiplication table to explain the relationship between multiplication and division.

FLORIDA STANDARDS

MAFS.3.OA.1.4
MAFS.3.OA.3.7
MAFS.3.OA.4.9

Explore and Grow

Use the multiplication table to complete the equations.

×	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45
6	6	12	18	24	30	36	42	48	54
7	7	14	21	28	35	42	49	56	63
8	8	16	24	32	40	48	56	64	72
9	9	18	27	36	45	54	63	72	81

$3 \times 5 =$ _____ $\quad 15 \div$ _____ $= 3$

$5 \times$ _____ $= 15 \quad 15 \div 3 =$ _____

MP **Structure** How can you use the multiplication table to divide?

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English Spanish

Think and Grow: Use the Multiplication Table

Example Use the multiplication table to find 6×3.

Think: Find the number where the row for 6 and the column for 3 meet.

$6 \times 3 =$ _____

Example Use the multiplication table to find $72 \div 8$.

Think: Find 72 in the row for 8. In what column is 72?

A related fact is $8 \times$ _____ $= 72$.

So, $72 \div 8 =$ _____.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Show and Grow

Use the multiplication table.

1. $4 \times 7 =$ _____

2. $10 \times 9 =$ _____

3. $1 \times 6 =$ _____

4. $20 \div 5 =$ _____

$5 \times$ _____ $= 20$

5. $12 \div 2 =$ _____

$2 \times$ _____ $= 12$

6. $27 \div 9 =$ _____

$9 \times$ _____ $= 27$

7. $32 \div 4 =$ _____

$4 \times$ _____ $= 32$

8. $49 \div 7 =$ _____

$7 \times$ _____ $= 49$

9. $56 \div 8 =$ _____

$8 \times$ _____ $= 56$

Write the related multiplication equation. Then use the multiplication table to complete the related facts.

10. $42 \div 6 =$ _____

11. $64 \div 8 =$ _____

12. $35 \div 7 =$ _____

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English Spanish

Name _____

Apply and Grow: Practice

Write the related multiplication or division equation. Then use the multiplication table to complete the related facts.

13. $8 \div 2 =$ _____	**14.** $21 \div 3 =$ _____	**15.** $50 \div 10 =$ _____
16. $24 \div 8 =$ _____	**17.** $54 \div 9 =$ _____	**18.** $40 \div 5 =$ _____
19. $63 \div 7 =$ _____	**20.** $25 \div 5 =$ _____	**21.** $56 \div 8 =$ _____
22. $5 \times 2 =$ _____	**23.** $6 \times 6 =$ _____	**24.** $9 \times 5 =$ _____
25. $4 \times 10 =$ _____	**26.** $2 \times 8 =$ _____	**27.** $10 \times 10 =$ _____

28. MP **Precision** Explain how to use the multiplication table to solve $4 \times \square = 36$.

29. **Which One Doesn't Belong?** Which equation does *not* belong with the other three?

$6 \div 2 = 3$ $6 \times 2 = 12$ $6 \div 3 = 2$ $3 \times 2 = 6$

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English Spanish

Think and Grow: Modeling Real Life

A frozen treat tray has 12 molds arranged in 3 equal rows. How many columns of molds are in the tray?

Use the multiplication table.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

There are _____ columns of molds.

Show and Grow

Use the multiplication table to solve.

30. There are 28 pictures hanging on a classroom wall. They are arranged in 7 equal columns. How many rows of pictures are there?

31. A street vendor has 24 drums to sell. She arranges them into equal rows. What are three different ways she can arrange the drums? Describe each arrangement by the number of rows and columns.

32. DIG DEEPER! A stage crew sets up 2 equal arrays of chairs for a school concert. There are 6 rows and 7 columns of chairs in each array. Are there enough chairs for 80 people?

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English Spanish

Name _____

Homework & Practice 5.2

Learning Target: Use the multiplication table to write related multiplication and division facts.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Example Use the multiplication table to find 4×5.

Think: Find the number where the row for 4 and the column for 5 meet.

$4 \times 5 =$ 20

Example Use the multiplication table to find $48 \div 6$.

Think: Find 48 in the row for 6. In what column is 48?

A related fact is $6 \times$ 8 $= 48$.

So, $48 \div 6 =$ 8 .

Use the multiplication table.

1. $5 \times 6 =$ _____

2. $9 \times 7 =$ _____

3. $3 \times 8 =$ _____

4. $14 \div 7 =$ _____

$7 \times$ _____ $= 14$

5. $16 \div 4 =$ _____

$4 \times$ _____ $= 16$

6. $30 \div 10 =$ _____

$10 \times$ _____ $= 30$

Write the related multiplication or division equation. Then use the multiplication table to complete the related facts.

7. $9 \div 9 =$ _____

8. $24 \div 4 =$ _____

9. $18 \div 2 =$ _____

10. $6 \times 10 =$ _____

11. $1 \times 5 =$ _____

12. $7 \times 8 =$ _____

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13. **YOU BE THE TEACHER** Descartes says that $8 \div 2 = 16$. Is he correct? Explain.

14. **MP Precision** Explain how to use the multiplication table to solve $28 \div 7 = \square$.

15. **Modeling Real Life** There are 30 umbrellas arranged in 5 equal rows. How many columns of umbrellas are there?

16. **DIG DEEPER!** There are 20 sweet potato slices divided equally between 2 oven trays. There are 2 rows of slices on each tray. How many columns are on each tray?

Review & Refresh

Find the product.

17.
$$\begin{array}{r} 10 \\ \times\ 8 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 5 \\ \times\ 10 \\ \hline \end{array}$$

19.
$$\begin{array}{r} 10 \\ \times\ 10 \\ \hline \end{array}$$

20.
$$\begin{array}{r} 10 \\ \times\ 7 \\ \hline \end{array}$$

Find the missing factor.

21. $10 \times \_\_\_\_ = 90$

22. $60 = 10 \times \_\_\_\_$

23. $\_\_\_\_ \times 10 = 0$

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English Spanish

Name _____

Complete Multiplication Tables

5.3

Learning Target: Complete a multiplication table.

Success Criteria:

- I can use multiplication to find missing products in a table.
- I can use multiplication or division to find missing factors in a table.
- I can explain how to find missing numbers in a multiplication table.

FLORIDA STANDARDS
MAFS.3.OA.1.4
MAFS.3.OA.3.7

Explore and Grow

Complete the table.

×	1	3	4	☐	7
2	2		8	12	
5	5	15		30	35
☐	8		32	48	56

MP **Critique Reasoning** Describe how you completed the table. Compare your method to your partner's method. How are they the same? How are they different?

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Think and Grow: Complete Multiplication Tables

Example Complete the table.

×	4	☐	9
2		16	
☐	20	40	
6			

Step 1: Use multiplication or division to find the missing factors.

$2 \times \_\_\_\_ = 16$ or $16 \div \_\_\_\_ = 2$

$\_\_\_\_ \times 4 = 20$ or $20 \div 4 = \_\_\_\_$

Step 2: Use multiplication to find the missing products.

$2 \times 4 = \_\_\_\_$ $2 \times 9 = \_\_\_\_$ $5 \times 9 = \_\_\_\_$

$6 \times 4 = \_\_\_\_$ $6 \times 8 = \_\_\_\_$ $6 \times 9 = \_\_\_\_$

Show and Grow

Complete the table.

1.

×	☐	4	5
3	6		
☐	14		35
8			

2.

×	☐	4	9
☐		16	
☐			54
8	24		

3.

×	2	☐	7
3		15	
☐			28
6		30	
☐	18		

4.

×	☐	6	☐
☐		12	
5	15		
☐	18		
7			56

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Name _____

Apply and Grow: Practice

Complete the table.

5.

×	3	□	□
2			14
□	12		
□	15		
7		35	49

6.

×	□	6	□
□		12	
□			27
4			36
8	8		

7.

×	1	□	□
□	2		
□		12	
5		20	
9			72
10			

8.

×	□	7	9
1	6		
4	24		
□			45
□		42	
□		56	

9. **YOU BE THE TEACHER** Newton says that the missing factor and product must be the same number. Is he correct? Explain.

×	□
1	□

10. **MP Logic** Circle the box you must complete first. Explain.

×	□
1	□
3	27
□	90

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Think and Grow: Modeling Real Life

Newton makes turkey sandwiches for a picnic. Complete the table to find how many of each ingredient he needs for the given numbers of sandwiches.

Ingredient	Number of Sandwiches: 1	4	6	☐
Slices of cheese		4		
Slices of bread	2			
Slices of turkey	3			30
Leaves of lettuce			24	

Show and Grow

11. You make favor bags for a birthday party. Complete the table to find how many of each item you need for the given numbers of bags.

Item	Number of Bags: 1	6	☐	8
Pencils	2		14	
Bouncy balls		18		
Balloons	4			
Stickers				48

You also want to put 8 crayons in each bag. Draw and complete the additional row in the table.

Explain how you can use the table to find how many of each item you need to make 12 favor bags.

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Name _____

Homework & Practice 5.3

Learning Target: Complete a multiplication table.

Example Complete the table.

×	2	4	6
1	2	4	6
3	6	12	18
5	10	20	30

Step 1: Use multiplication or division to find the missing factors.

3 × 2 = 6 or 6 ÷ 2 = 3

5 × 6 = 30 or 30 ÷ 6 = 5

Step 2: Use multiplication to find the missing products.

1 × 2 = 2 1 × 6 = 6 3 × 4 = 12

5 × 2 = 10 5 × 4 = 20

Complete the table.

1.

×	2	□	9
4		12	
5	10		
□			54

2.

×	□	3	□
□			16
6	6		48
7			

3.

×	1	8	□
2			18
3			
□		32	
□	7		

4.

×	3	□	□
□	6		12
4			
7			
8			48
□	30	50	

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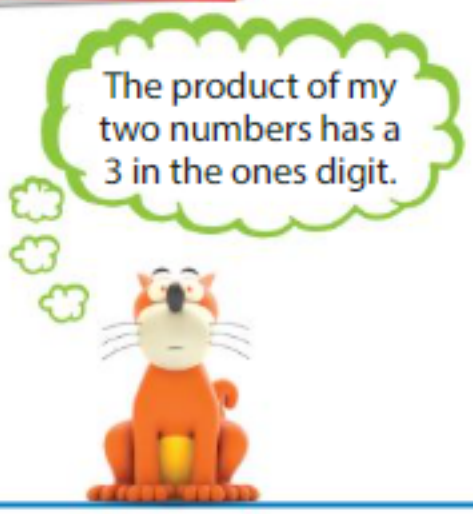
English Spanish

5. Writing Explain two ways you can find the missing factor.

×	8
□	32

---

6. DIG DEEPER! Are Descartes's two numbers even or odd? Explain.



even and odd

both even

both odd

---

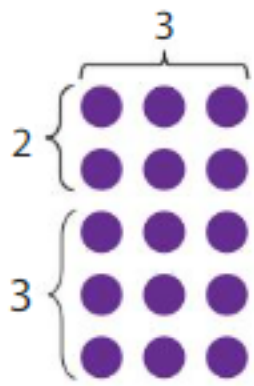
7. Modeling Real Life You make fruit cups for a picnic. Complete the table to find how many of each ingredient you need for the given numbers of cups.

You also want to put 4 pieces of watermelon in each cup. Draw and complete the additional row in the table.

Ingredient	Number of Cups: 1	□	5	10
Blueberries	5	10		
Strawberries			15	
Apple pieces	1			
Orange pieces		4		

Review & Refresh

8. Name the strategy or property used to solve.



$5 \times 3 = (2 + 3) \times 3$

$5 \times 3 = (2 \times 3) + (3 \times 3)$

$5 \times 3 = 6 + 9$

$5 \times 3 = 15$

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English Spanish

Name _____

More Problem Solving 5.4

Learning Target: Solve multiplication and division word problems.

Success Criteria:

- I can understand a problem.
- I can make a plan to solve.
- I can solve a problem.

FLORIDA STANDARDS

MAFS.3.OA.1.4
MAFS.3.OA.3.7
MAFS.3.OA.4.8

Explore and Grow

Model the story.

There are 7 pinwheels. Each pinwheel has 6 sections.
How many sections are there in all?

There are _____ sections.

MP **Reasoning** Explain how you can use a multiplication table to check your answer.

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English Spanish

Think and Grow: Using the Problem-Solving Plan

Example There are 48 igloos in a community. The igloos are arranged in 8 equal groups. How many igloos are in each group?

Understand the Problem

What do you know?

- There are _____ igloos.
- They are arranged in _____ equal groups.

What do you need to find?

- You need to find how many _____ are in each group.

Make a Plan

How will you solve?

- Divide _____ by _____ to find how many are in each group.

Solve

×	1	2	3	4	5	6	7	8
1	1	2	3	4	5	6	7	8
2	2	4	6	8	10	12	14	16
3	3	6	9	12	15	18	21	24
4	4	8	12	16	20	24	28	32
5	5	10	15	20	25	30	35	40
6	6	12	18	24	30	36	42	48
7	7	14	21	28	35	42	49	56
8	8	16	24	32	40	48	56	64

$48 \div 8 =$ _____

There are _____ igloos in each group.

Show and Grow

1. There are 35 solar panels on a building. They are arranged in 7 equal columns. How many rows of solar panels are there?

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Name _____

Apply and Grow: Practice

2. Your class divides 30 animal toys into 3 equal groups. What information do you know that will help you find how many toys are in each group?

3. Video game characters are shown in 4 rows and 5 columns. How many characters are there?

4. You arrange 32 drawings into equal rows of 8 drawings. How many rows are there?

5. Newton and Descartes play a flip-and-find card game. There are 63 cards arranged into 7 equal rows. How many columns are there?

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Think and Grow: Modeling Real Life

A city has 9 bicycle-sharing stations. Each station holds 8 bicycles. There are 14 bicycles in use. How many bicycles are available?

Understand the problem:

Make a plan:

Solve:

There are _____ bicycles available.

Show and Grow

6. You buy a package of foam darts that has 4 rows of 9 darts. You lose 3 of them. How many foam darts do you have left?

7. There are 25 girls and 17 boys on step-dancing teams. Each team has 6 dancers. How many teams are there?

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English Spanish

Name _____

Homework & Practice 5.4

Learning Target: Solve multiplication and division word problems.

Example A music classroom has 6 rows of instruments with 4 instruments in each row. How many instruments are there?

Understand the Problem

What do you know?

- There are 6 rows of musical instruments.
- There are 4 instruments in each row.

What do you need to find?

- You need to find how many instruments there are in all.

Make a Plan

How will you solve?

- Multiply 6 by 4 to find how many there are in all.

Solve

×	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25
6	6	12	18	24	30

$6 \times 4 = 24$

There are 24 instruments.

1. There are 5 rows of books with 10 books in each row. How many books are there?

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English Spanish

2. Newton has 20 snacks for a trip. He puts them in bags with 5 snacks in each bag. How many bags does he use?

---

3. A game has 49 pieces of fruit arranged into 7 equal rows. How many pieces are in each row?

---

4. **Modeling Real Life** You buy a package of oil pastels. There are 3 rows with 8 in each row. You lose 4 of them. How many oil pastels do you have left?

Review & Refresh

Find the quotient.

5. $\square$ $1\overline{)10}$

6. $\square$ $2\overline{)0}$

7. $\square$ $36\overline{)36}$

8. $\square$ $1\overline{)54}$

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English Spanish

Name _____

Performance Task 5

1. You help organize teams and equipment for a youth baseball league.

a. Complete the table to find the equipment you need for the given number of teams.

Equipment	Number of Teams				
	1	4	5	☐	9
Balls	4				36
Bats			25		
Helmets		28			
Uniforms	10			70	

b. This year there are 100 players signed up to play. Each team has 10 players. How many teams are there this year?

c. Draw and complete a column in the table for the number of teams there are this year.

d. Each team will receive an odd number of baseball hats. Will the league order an even or an odd number of hats? Explain.

e. Twenty-four people volunteer to coach. Each team needs 2 coaches. Do you have enough coaches for each team? Explain.

f. All but 4 teams play at the same time tonight. Two teams play on each field. How many baseball fields will be used?

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Multiplication Table Cover Up

Directions:

1. Players take turns flipping two number cards.
2. On your turn, multiply the two numbers and place a small counter on the product.
3. If the product is already covered, then you lose your turn.
4. The first player to get three products in a row wins!

×	0	1	2	3	4	5	6	7	8	9	10
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

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Name _____

Chapter Practice 5

5.1 Identify Patterns in the Multiplication Table

1. Use the multiplication table.

Shade the row for 2 and the column for 2. Describe the pattern in the products.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

What property explains this pattern?

Look at the row for 9. Describe the pattern in the products.

5.2 Use the Multiplication Table

Use the multiplication table.

2. $3 \times 4 =$ _____

3. $7 \times 5 =$ _____

4. $6 \times 10 =$ _____

5. $40 \div 8 =$ _____

$8 \times$ _____ $= 40$

6. $9 \div 3 =$ _____

$3 \times$ _____ $= 9$

7. $24 \div 6 =$ _____

$6 \times$ _____ $= 24$

Write the related multiplication or division equation. Then use the multiplication table to complete the related facts.

8. $54 \div 6 =$ _____

9. $8 \times 4 =$ _____

10. $35 \div 5 =$ _____

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5.3 Complete Multiplication Tables

Complete the table.

11.

×	2	☐	☐
3			
☐	10	35	
6			60

12.

×	5	6	☐
1			
☐		18	
☐	20		
9			72

5.4 More Problem Solving

13. Fifteen kids are divided equally among 5 swing sets. How many kids are at each swing set?

14. Your class yearbook page has 28 photos arranged in equal rows. There are 7 photos in each row. How many rows are there?

15. **Modeling Real Life** There are 28 girls and 28 boys doing a scavenger hunt. Everyone is split into teams of 8 students. How many teams are there?

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6 Relate Area to Multiplication

- What is an obstacle course? Have you ever seen one?
- A dog runs on a ramp in an obstacle course. How can you use multiplication to find the area of the ramp?

Chapter Learning Target:
Understand area.

Chapter Success Criteria:
- I can identify the area of a shape.
- I can explain how to find the area of a shape.
- I can compare the area of one shape to another.
- I can find the total area of a shape.

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Name _____

6 Vocabulary

Review Words

addition
equation
subtraction

Organize It

Use the review words to complete the graphic organizer.

_____

A mathematical sentence that uses an equal sign, =, to show that two expressions are equal

- _____ equation

  $5 + 7 = 12$

- _____ equation

  $12 - 7 = 5$

Define It

Use your vocabulary cards to complete the definition.

1. area: The amount of _____ a _____ covers
2. square unit: A _____ used to measure _____
3. unit square: A square with _____ that are each _____ unit long

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Chapter 6 Vocabulary Cards

area

square
unit

unit
square

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A unit used to measure area

square centimeter

square meter

square inch

square foot

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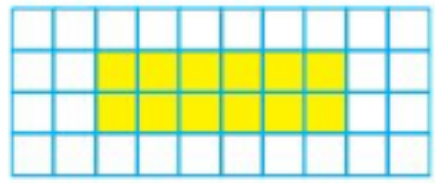
The amount of surface a shape covers



You can measure area by counting the number of unit squares needed to cover a flat surface with no gaps or overlaps.

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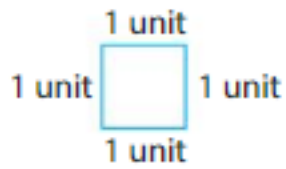
A square with sides that are each 1 unit long



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Name _____

Understand Area 6.1

Learning Target: Count to find the area of a shape.

Success Criteria:

- I can count the number of unit squares covering a shape.
- I can tell the area of a shape in square units.
- I can explain how to find the area of a shape.

FLORIDA STANDARDS

MAFS.3.MD.3.5a
MAFS.3.MD.3.5b
MAFS.3.MD.3.6

Explore and Grow

Try to cover the rectangle with the given number of color tiles.

6 color tiles	10 color tiles	8 color tiles
Are there any gaps or overlaps?	Are there any gaps or overlaps?	Are there any gaps or overlaps?

How many color tiles do you need to completely cover the rectangle with no gaps or overlaps?

_____ color tiles

MP **Precision** Why is it important to line up the tiles side to side?

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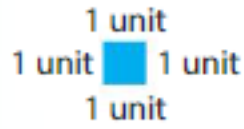
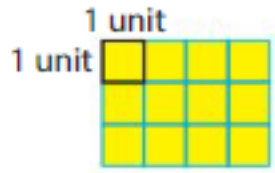
Think and Grow: Counting to Find Area

Area is the amount of surface a shape covers. The area of a unit square is 1 **square unit**.

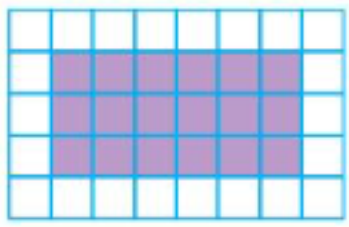
Unit Square





12 unit squares cover the rectangle with no gaps or overlaps. So, the area of the rectangle is 12 square units.

How is finding the area of a shape different from finding the length of the shape?



□ = 1 square unit

Example Find the area of the rectangle.

Count the unit squares needed to cover the rectangle.

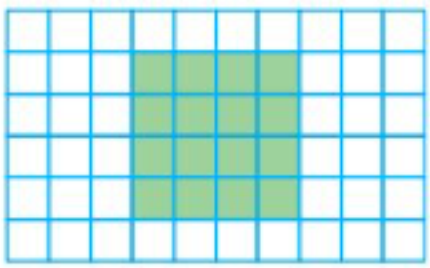
_____ unit squares cover the rectangle.

So, the area is _____ square units.

Show and Grow

Find the area of the shape.

1.

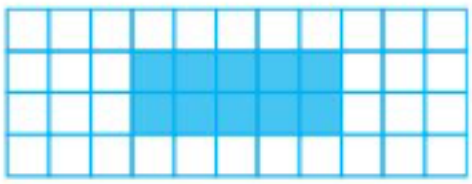


□ = 1 square unit

_____ unit squares cover the shape.

So, the area is _____ square units.

2.



□ = 1 square unit

_____ unit squares cover the shape.

So, the area is _____ square units.

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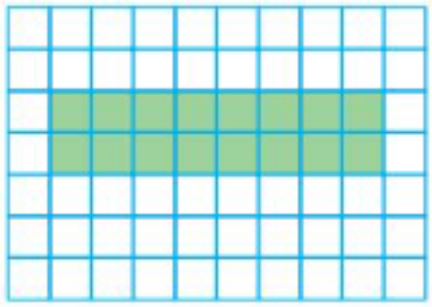
English Spanish

Name _____

Apply and Grow: Practice

Find the area of the shape.

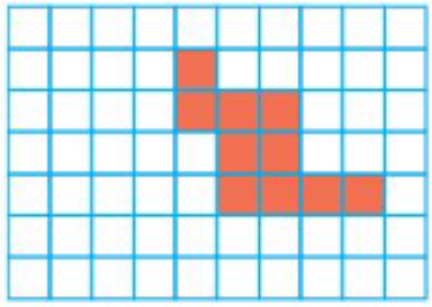
3.



_____ unit squares cover the shape.

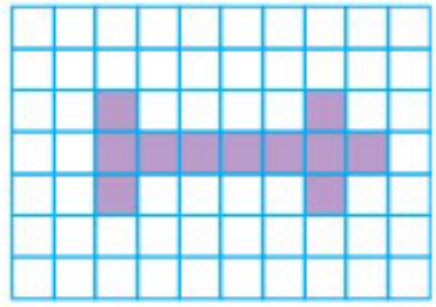
So, the area is _____ square units.

4.



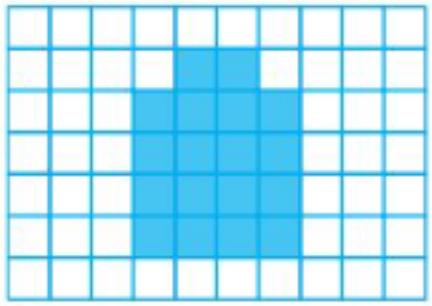
Area = _____ square units

5.



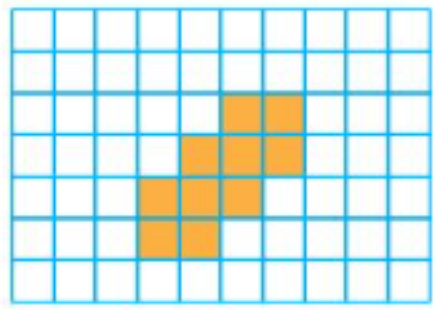
Area = _____ square units

6.



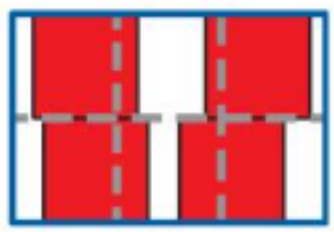
Area = _____ square units

7.

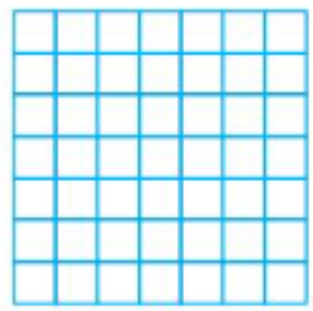


Area = _____ square units

8. **YOU BE THE TEACHER** Newton uses 4 color tiles to cover the rectangle. He says the area is 4 square units. Is he correct? Explain.



9. **Open-Ended** Draw a shape that has an area of 16 square units.



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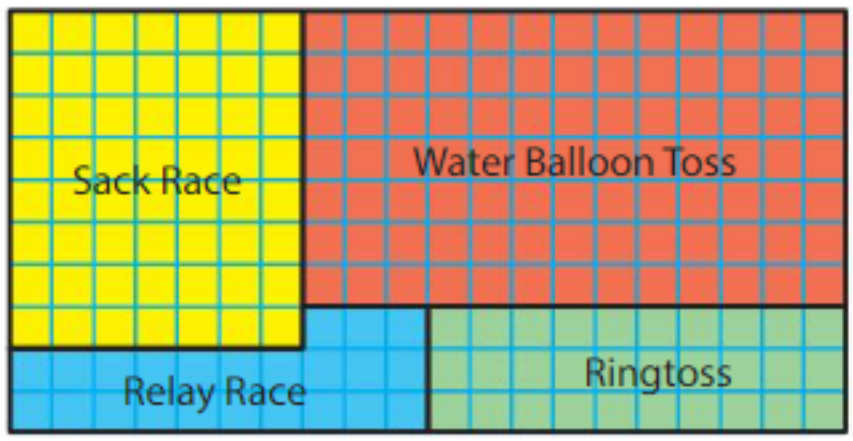
Think and Grow: Modeling Real Life

Part of a zoo map is shown. What is the area of the lion exhibit?

The lion exhibit is _____ square units.

Show and Grow

Use the field day map to answer the question.



10. What is the area of the relay race section?

11. Which area is greater, the ringtoss section or the relay race section? Explain.

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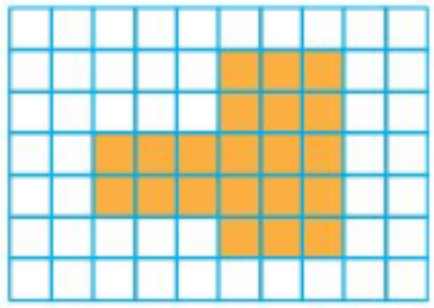
English Spanish

Name _____

Homework & Practice 6.1

Learning Target: Count to find the area of a shape.

Example Find the area of the shape.

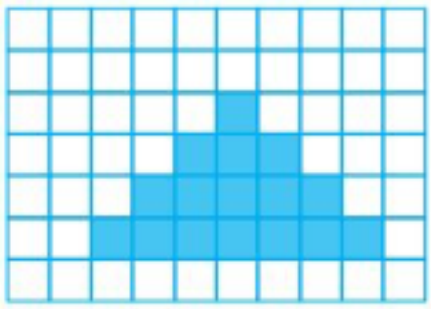


21 unit squares cover the shape.

So, the area is 21 square units.

Find the area of the shape.

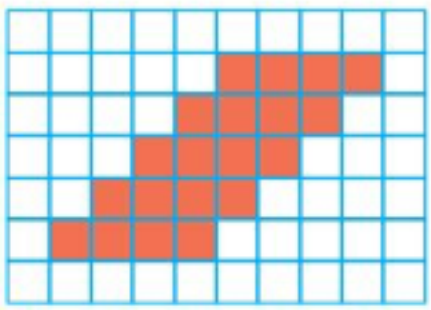
1.



_____ unit squares cover the shape.

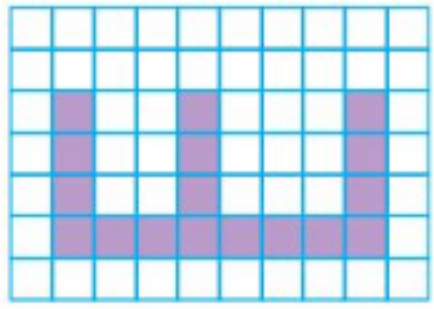
So, the area is _____ square units.

2.



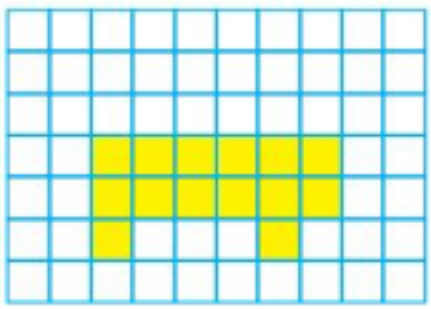
Area = _____ square units

3.



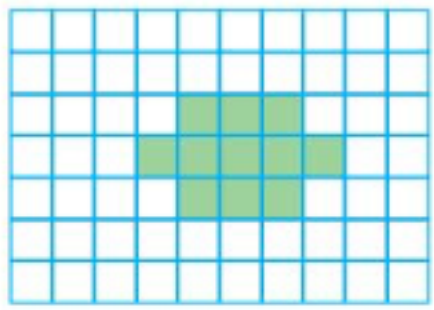
Area = _____ square units

4.



Area = _____ square units

5.



Area = _____ square units

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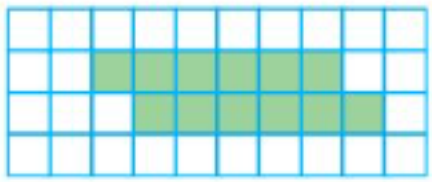
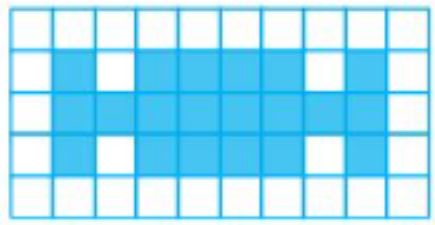
Find the area of the shape.

6.



Area = _____ square units

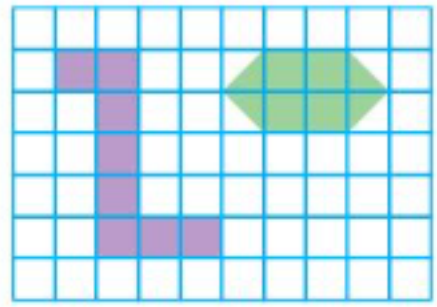
7.



Area = _____ square units

---

8. **DIG DEEPER!** Your friend says each shape has an area of 8 square units. Is your friend correct? Explain.



Modeling Real Life Use the amusement park map to answer the question.

9. What is the area of the food court section?

---

10. Which area is greater, the kiddie land section or the picnic tables section? Explain.

Review & Refresh

Find the quotient.

11. $2\overline{)12}$

12. $7\overline{)28}$

13. $6\overline{)54}$

14. $7\overline{)49}$

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English Spanish

Name _____

Measure Area Using Standard Units

6.2

Learning Target: Count to find the area of a shape using standard units.

Success Criteria:

- I can count the number of unit squares covering a shape.
- I can tell the area of a shape in square units.
- I can identify units as square inches, square feet, square centimeters, or square meters.

FLORIDA STANDARDS

MAFS.3.MD.3.5a
MAFS.3.MD.3.5b
MAFS.3.MD.3.6

Explore and Grow

Use the colored squares.

How many blue squares do you think it will take to cover the rectangle?

_____ blue squares

How many red squares do you think it will take to cover the rectangle?

_____ red squares

Find the area of the rectangle using the blue squares.

Area = _____ blue square units

Find the area of the rectangle using the red squares.

Area = _____ red square units

MP **Reasoning** Why is the number of blue squares needed to cover the rectangle different from the number of red squares needed?

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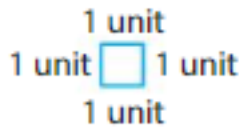
English Spanish

Think and Grow: Measure Area Using Standard Units

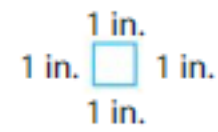
You can measure area using different standard units. Here are some standard units of length and area.

Unit	Square Unit
inch (in.)	square inch
foot (ft)	square foot
centimeter (cm)	square centimeter
meter (m)	square meter

Unit squares can represent different standard units.

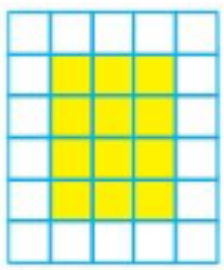


Each side is 1 unit.
The area is 1 square unit.



Each side represents 1 inch.
The area is 1 square inch.

Example Find the area of the rectangle.



□ = 1 square meter

_____ unit squares cover the rectangle.

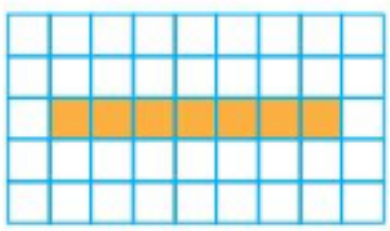
Each unit square represents

_____.

So, the area is _____.

Show and Grow

1. Find the area of the shape.



□ = 1 square foot

_____ unit squares cover the rectangle.

Each unit square represents

_____.

So, the area is _____.

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English Spanish

Name _____

Apply and Grow: Practice

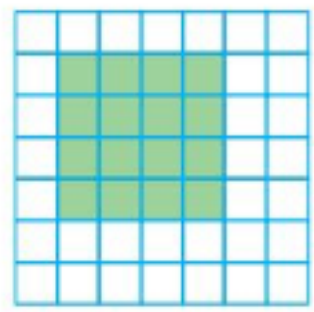
Find the area of the shape.

2.

□ = 1 square foot

Area = _____

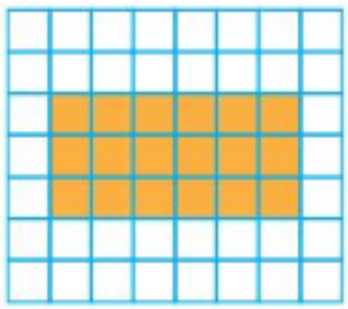
3.



□ = 1 square centimeter

Area = _____

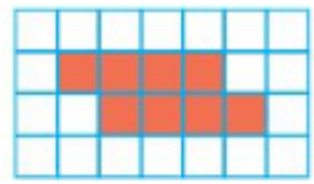
4.



□ = 1 square inch

Area = _____

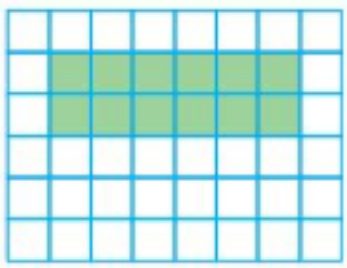
5.



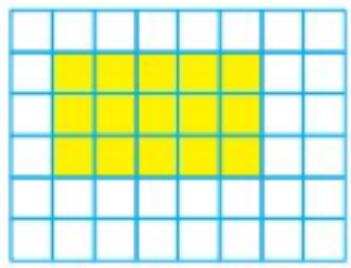
□ = 1 square meter

Area = _____

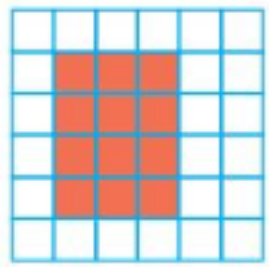
6. MP **Number Sense** Which rectangle has an area of 12 square inches?



□ = 1 square inch



□ = 1 square inch



□ = 1 square meter

7. MP **Reasoning** Is the area of a blanket more likely to be 30 square feet or 30 square centimeters? Explain.

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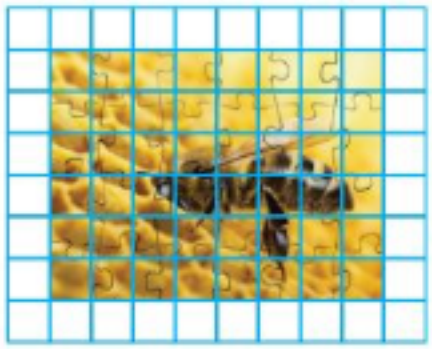
English Spanish

Think and Grow: Modeling Real Life

Whose puzzle has a greater area?

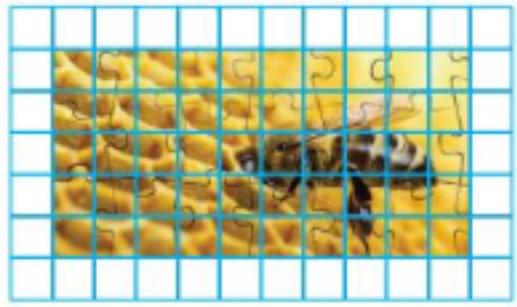
Newton



☐ = 1 square inch

Area of Newton's puzzle:

Descartes



☐ = 1 square inch

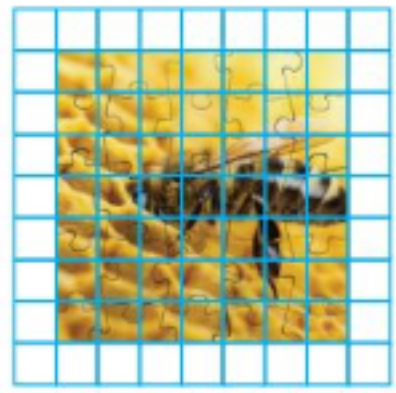
Area of Descartes's puzzle:

Compare: ____ ○ ____ _____ puzzle has a greater area.

Show and Grow

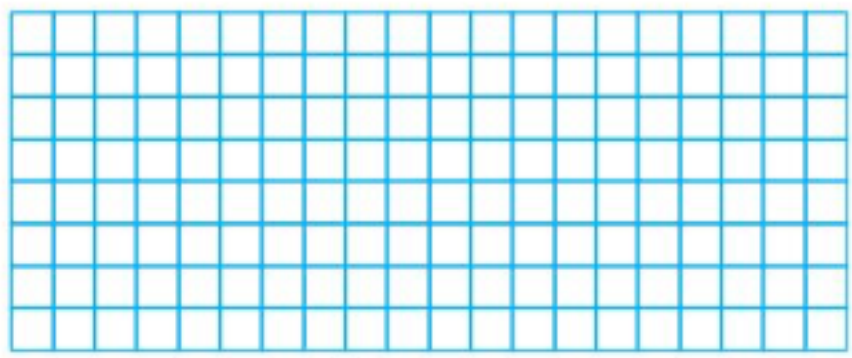
8. Compare the area of Newton's puzzle shown above to the area of your friend's puzzle. Whose puzzle has a greater area?

Friend



☐ = 1 square inch

9. You want to weave a rectangular rug that has an area of 12 square feet. Draw and shade a rectangle to represent the rug.



☐ = 1 square foot

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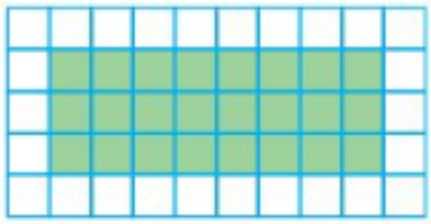
English Spanish

Name _____

Homework & Practice 6.2

Learning Target: Count to find the area of a shape using standard units.

Example Find the area of the shape.



☐ = 1 square foot

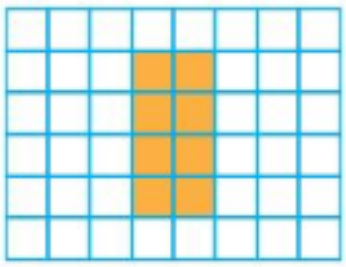
24 unit squares cover the rectangle.

Each unit square represents 1 square foot.

So, the area is 24 square feet.

Find the area of the shape.

1.



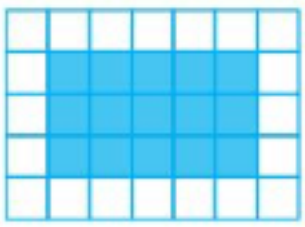
☐ = 1 square centimeter

_____ unit squares cover the rectangle.

Each unit square represents _____.

So, the area is _____.

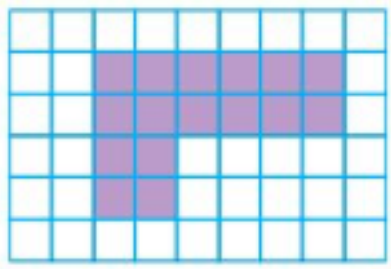
2.



☐ = 1 square meter

Area = _____

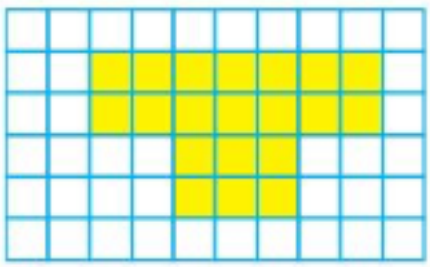
3.



☐ = 1 square foot

Area = _____

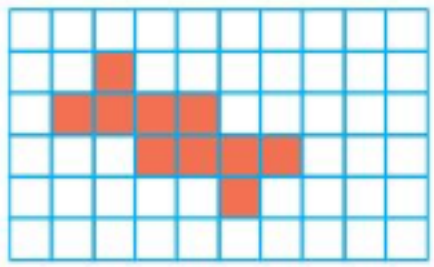
4.



☐ = 1 square centimeter

Area = _____

5.



☐ = 1 square inch

Area = _____

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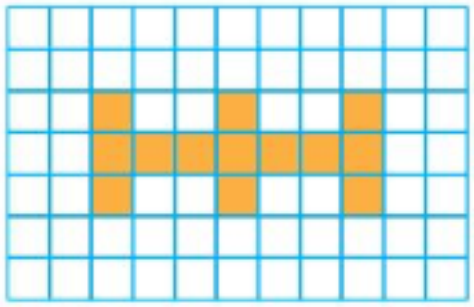
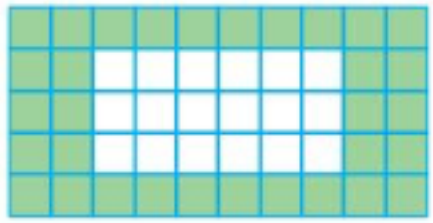
English Spanish

6. **Precision** Your friend says the area of the shape is 13. What is wrong with her answer?



□ = 1 square centimeter

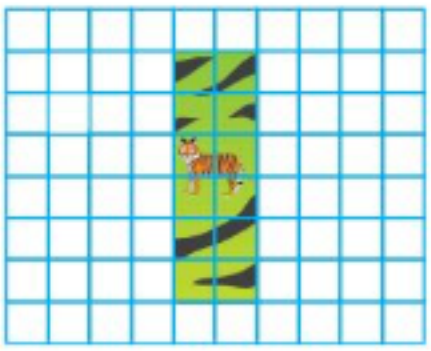
7. **Number Sense** Find the area of the shape.



□ = 1 square foot

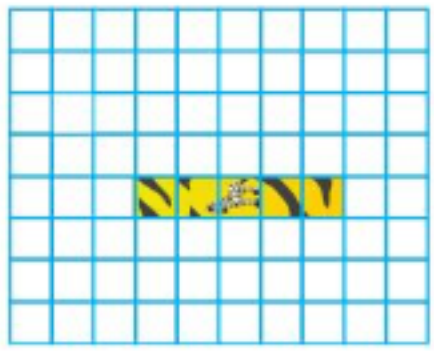
8. **Modeling Real Life** Compare the areas of your bookmark and your friend's bookmark. Whose bookmark has a greater area?

You



□ = 1 square inch

Friend

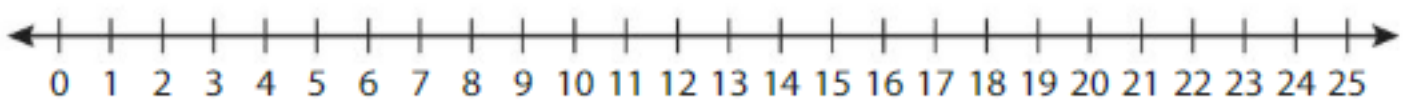


□ = 1 square inch

Review & Refresh

9. Find the product of 4×5.

Number of jumps: _____ Size of jumps: _____



$4 \times 5 =$ _____

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English Spanish

Name _____

Find Area by Multiplying 6.3

Learning Target: Use multiplication to find the area of a rectangle.

Success Criteria:

- I can use an array to find the area of a rectangle.
- I can write a multiplication equation to find the area of a rectangle.

FLORIDA STANDARDS

MAFS.3.MD.3.5a
MAFS.3.MD.3.5b
MAFS.3.MD.3.6
MAFS.3.MD.3.7a
MAFS.3.MD.3.7b

Explore and Grow

Write an equation for the array.

_____ × _____ = _____

Cover the rectangle with color tiles. Find the area of the rectangle.

1 color tile = 1 square unit

Area = _____ square units

MP **Structure** How can you use an array to find the area of rectangle?

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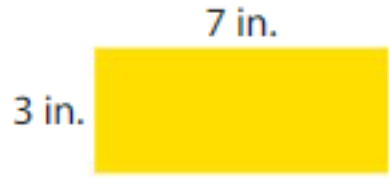
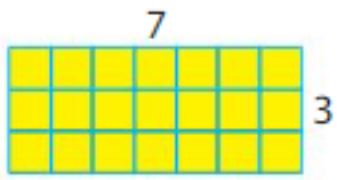
Think and Grow: Find Area by Multiplying

Example Find the area of the rectangle.



One Way:

Count the unit squares to find the area.

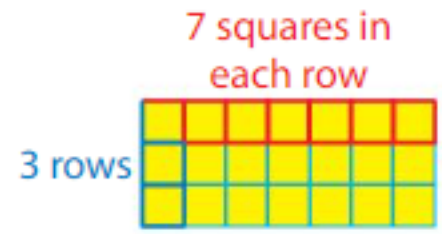


☐ = 1 square inch

There are _____ unit squares.

Another Way:

Think of the rectangle as an array. Then use repeated addition or multiplication to find the area.



☐ = 1 square inch

3 rows of _____ unit squares

7 + 7 + 7 = _____

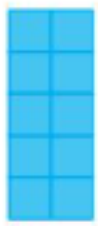
3 × 7 = _____

So, the area is _____.

Show and Grow

Find the area of the rectangle.

1.



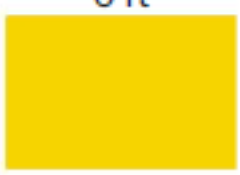
☐ = 1 square centimeter

_____ rows of _____ unit squares

_____ + _____ + _____ + _____ + _____ = _____

Area = _____

2.



_____ × _____ = _____

Area = _____

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English Spanish

Name _____

Apply and Grow: Practice

Find the area of the rectangle.

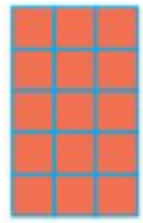
3.

☐ = 1 square centimeter

____ × ____ = ____

Area = _____

4.

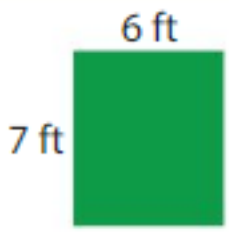


☐ = 1 square inch

____ × ____ = ____

Area = _____

5.



____ × ____ = ____

Area = _____

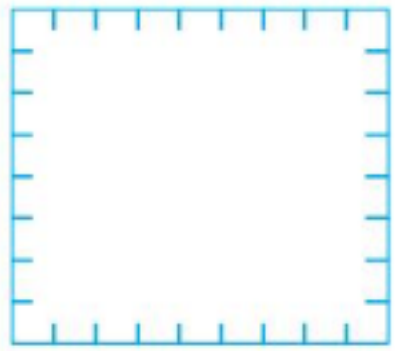
6.

____ × ____ = ____

Area = _____

7. Open-Ended Draw and label two different rectangles that each have an area of 12 square meters.

8. DIG DEEPER! Explain how to find the area of the rectangle.



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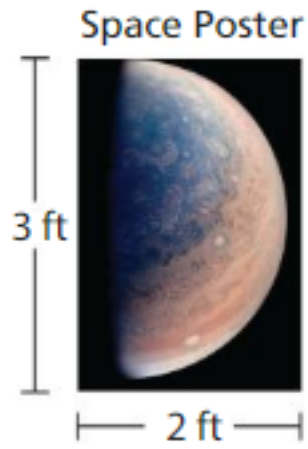
English Spanish

Think and Grow: Modeling Real Life

Your rectangular animal poster is 4 feet long and 1 foot wide. Which poster has a greater area, your animal poster or your space poster?



Understand the problem:

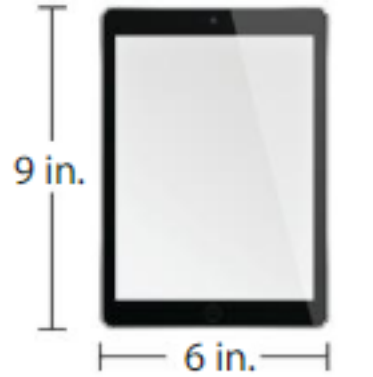
Make a plan:

Solve:

Your _____ poster has a greater area.

Show and Grow

9. Descartes's rectangular tablet is 10 inches long and 7 inches wide. Whose tablet has a greater area, Newton's tablet or Descartes's?



10. Your friend paints a rectangular tile that is 8 inches long and 4 inches wide. You paint a square tile that is 6 inches long. Whose tile has a greater area?

11. DIG DEEPER! A sign has an area of 18 square feet. The sign is 6 feet long. How wide is the sign?

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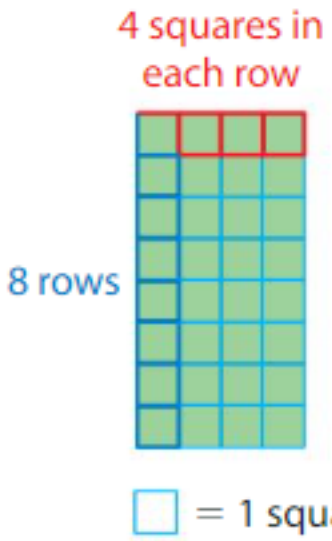
English Spanish

Name _____

Homework & Practice 6.3

Learning Target: Use multiplication to find the area of a rectangle.

Example Find the area of the rectangle.

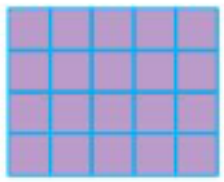


$8 \times 4 =$ 32

So, the area is 32 square meters.

Find the area of the rectangle.

1.

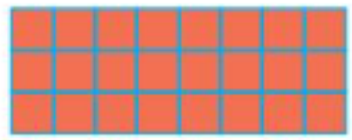


□ = 1 square foot

_____ × _____ = _____

Area = _____

2.



□ = 1 square centimeter

_____ × _____ = _____

Area = _____

3.

_____ × _____ = _____

Area = _____

4.

_____ × _____ = _____

Area = _____

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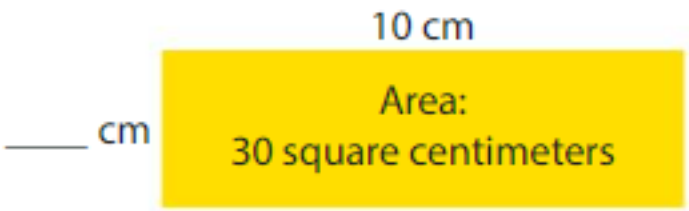
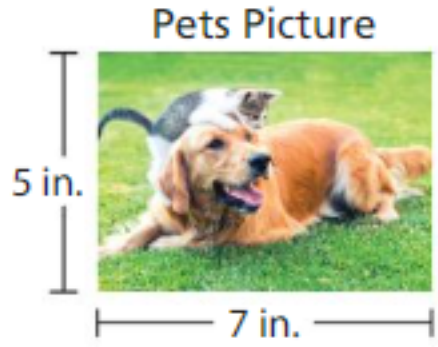
English Spanish

5. DIG DEEPER! Find the missing side length.



6. YOU BE THE TEACHER Descartes says he only needs the length of one side of a square to find the area. Is he correct? Explain.

7. **Modeling Real Life** A picture of your friend is 6 inches long and 4 inches wide. Which picture has a greater area, the picture of your friend or the picture of your pets?



8. DIG DEEPER! A city street parking spot has an area of 72 square feet. The parking spot is 9 feet long. How wide is the parking spot?

Review & Refresh

Use the Distributive Property to fill in the blanks.

9. $9 \times 3 = \_\_\_\_ \times (2 + \_\_\_\_)$

$= (9 \times 2) + (\_\_\_\_ \times \_\_\_\_)$

$= \_\_\_\_ + \_\_\_\_$

$= \_\_\_\_$

10. $6 \times 7 = (\_\_\_\_ + \_\_\_\_) \times 7$

$= (5 \times \_\_\_\_) + (\_\_\_\_ \times 7)$

$= \_\_\_\_ + \_\_\_\_$

$= \_\_\_\_$

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English Spanish

Name _____

Area and the Distributive Property

6.4

Learning Target: Use the Distributive Property to find the area of a rectangle.

Success Criteria:

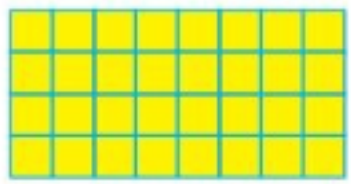
- I can break apart a rectangle into two smaller rectangles.
- I can explain how the area of a rectangle is equal to the areas of its smaller rectangles.

FLORIDA STANDARDS

MAFS.3.MD.3.7b
MAFS.3.MD.3.7c

Explore and Grow

Find the area of the rectangle two different ways.



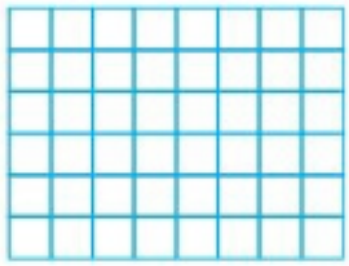
□ = 1 square inch

Use multiplication.

Area = _____

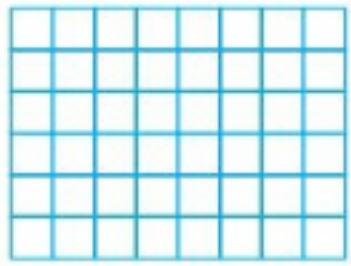
Break apart the rectangle into smaller rectangles. Draw and label your rectangles. Then find each area.

Rectangle 1



Area of Rectangle 1: _____

Rectangle 2



Area of Rectangle 2: _____

MP **Structure** How does the area of the large rectangle compare to the areas of the smaller rectangles? What property does this show?

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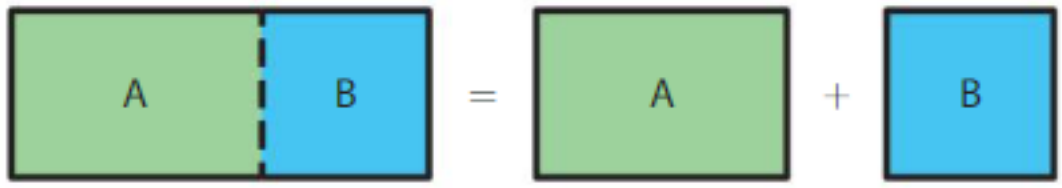
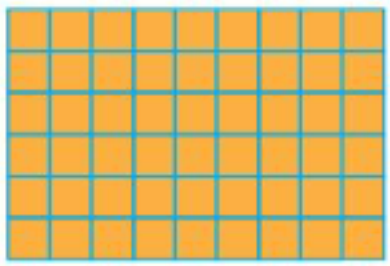
English Spanish

Think and Grow: Area and the Distributive Property

You can use the Distributive Property to find the area of a rectangle. First, break apart the large rectangle into smaller rectangles. Then find the sum of the areas of the smaller rectangles.



Example Use the Distributive Property to find the area of the rectangle.



□ = 1 square inch

Area of large rectangle = Sum of area of smaller rectangles

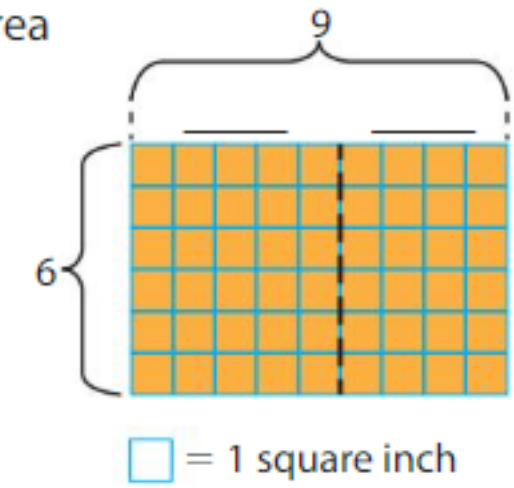
$6 \times 9 = 6 \times (\_\_\_\_ + \_\_\_\_)$

$6 \times 9 = (6 \times \_\_\_\_) + (6 \times \_\_\_\_)$

$6 \times 9 = \_\_\_\_ + \_\_\_\_$

$6 \times 9 = \_\_\_\_$

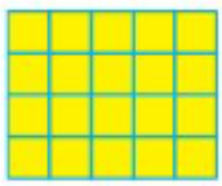
So, the area is _____.



□ = 1 square inch

Show and Grow

1. Use the Distributive Property to find the area of the rectangle.



□ = 1 square centimeter

$4 \times 5 = 4 \times (\_\_\_\_ + \_\_\_\_)$

$4 \times 5 = (4 \times \_\_\_\_) + (4 \times \_\_\_\_)$

$4 \times 5 = \_\_\_\_ + \_\_\_\_$

$4 \times 5 = \_\_\_\_$

Area = _____

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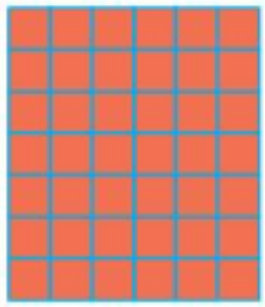
English Spanish

Name _____

Apply and Grow: Practice

Use the Distributive Property to find the area of the rectangle.

2.



□ = 1 square meter

$7 \times 6 = 7 \times (\_\_\_\_ + \_\_\_\_)$

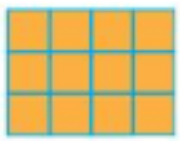
$7 \times 6 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$7 \times 6 = \_\_\_\_ + \_\_\_\_$

$7 \times 6 = \_\_\_\_$

Area = _____

3.



□ = 1 square foot

$3 \times 4 = (\_\_\_\_ + \_\_\_\_) \times 4$

$3 \times 4 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$3 \times 4 = \_\_\_\_ + \_\_\_\_$

$3 \times 4 = \_\_\_\_$

Area = _____

---

4. MP **Structure** Which equation represents the area of the rectangle?

$5 \times 7 = 5 \times (6 + 1) = (5 \times 6) + (5 \times 1)$

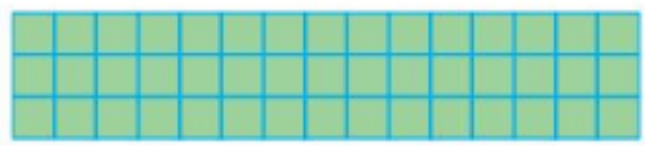
$5 \times 8 = 5 \times (6 + 2) = (5 \times 6) + (5 \times 2)$

$5 \times 7 = 5 \times (2 + 5) = (5 \times 2) + (5 \times 5)$

□ = 1 square inch

---

5. DIG DEEPER! Explain how to use the Distributive Property to find the area of the rectangle.



□ = 1 square centimeter

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English Spanish

Think and Grow: Modeling Real Life

Descartes cuts 1 rectangular piece of construction paper into 2 rectangles. One rectangle is 8 inches wide and 10 inches long. The other rectangle is 8 inches wide and 2 inches long. What were the dimensions and total area of the paper before it was cut?

Draw a picture:

Multiplication equation:

Distributive Property:

The piece of paper was _____ inches wide and _____ inches long before it was cut.

The total area of the piece of paper was _____ square inches.

Show and Grow

6. You cut 1 rectangular piece of fabric into 2 rectangles. One rectangle is 3 feet wide and 6 feet long. The other rectangle is 3 feet wide and 9 feet long. What were the dimensions and total area of the fabric before it was cut?

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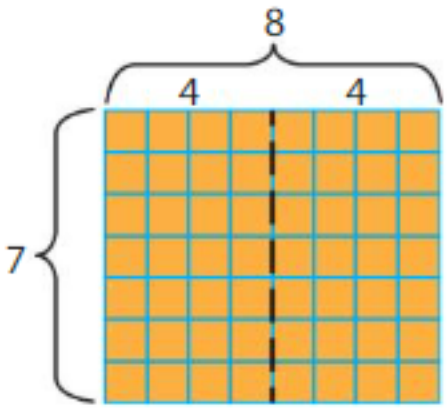
English Spanish

Name _____

Homework & Practice 6.4

Learning Target: Use the Distributive Property to find the area of a rectangle.

Example Use the Distributive Property to find the area of the rectangle.



□ = 1 square meter

$7 \times 8 = 7 \times (4 + 4)$

$7 \times 8 = (7 \times 4) + (7 \times 4)$

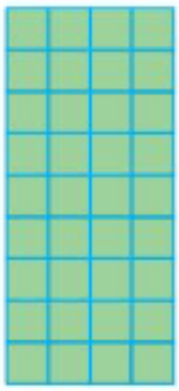
$7 \times 8 = \underline{28} + \underline{28}$

$7 \times 8 = \underline{56}$

Area = 56 square meters

Use the Distributive Property to find the area of the rectangle.

1.



□ = 1 square foot

$9 \times 4 = (\_\_\_\_ + \_\_\_\_) \times 4$

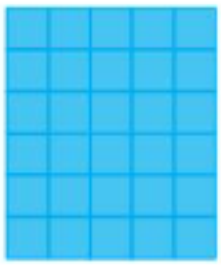
$9 \times 4 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$9 \times 4 = \_\_\_\_ + \_\_\_\_$

$9 \times 4 = \_\_\_\_$

Area = _____

2.



□ = 1 square centimeter

$6 \times 5 = 6 \times (\_\_\_\_ + \_\_\_\_)$

$6 \times 5 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$6 \times 5 = \_\_\_\_ + \_\_\_\_$

$6 \times 5 = \_\_\_\_$

Area = _____

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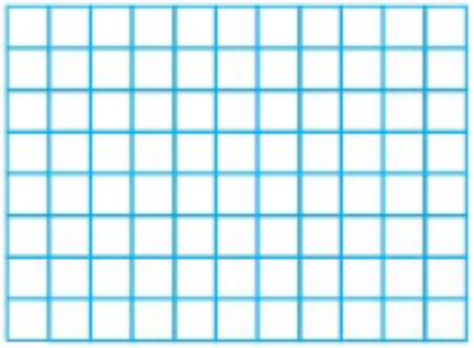
English Spanish

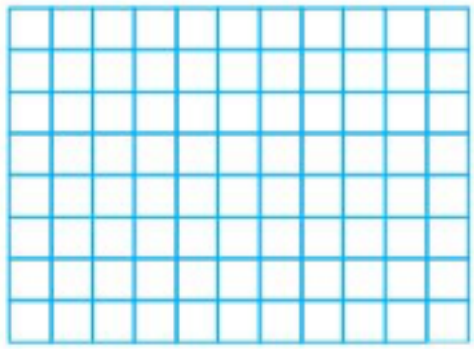
Structure Draw a rectangle for the expression.

3. $6 \times (4 + 5)$



□ = 1 square inch

4. $(7 + 1) \times 3$



□ = 1 square inch

5. Which One Doesn't Belong? Which is *not* a way to break apart the rectangle?

$5 \times (4 + 4)$ $(4 + 1) \times 8$

$5 \times (4 + 1)$ $(2 + 3) \times 8$

□ = 1 square meter

6. Modeling Real Life You cut a rectangular piece of wrapping paper into 2 rectangles. One rectangle is 10 inches wide and 6 inches long. The other rectangle is 10 inches wide and 5 inches long. What were the dimensions and the total area of the wrapping paper before it was cut?

Review & Refresh

Write the fact family for the numbers.

7. 3, 8, 24

____ × ____ = ____

____ × ____ = ____

____ ÷ ____ = ____

____ ÷ ____ = ____

8. 4, 9, 36

____ × ____ = ____

____ × ____ = ____

____ ÷ ____ = ____

____ ÷ ____ = ____

9. 2, 7, 14

____ × ____ = ____

____ × ____ = ____

____ ÷ ____ = ____

____ ÷ ____ = ____

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English Spanish

Name _____

Find Areas of More Shapes 6.5

Learning Target: Find the area of a shape made up of rectangles.

Success Criteria:

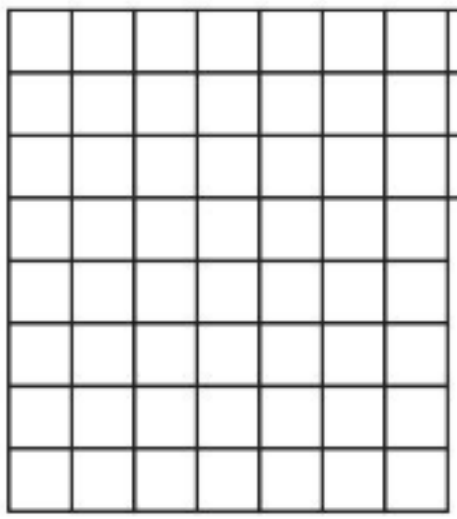
- I can break apart a shape into rectangles.
- I can find the area of each smaller rectangle.
- I can find the total area of a shape.

FLORIDA STANDARDS

MAFS.3.MD.3.7b
MAFS.3.MD.3.7d

Explore and Grow

Break apart the shape into two rectangles. Color each rectangle a different color. Find the area of each rectangle. Then find the total area of the shape.



☐ = 1 square inch

Areas of Rectangles

Rectangle 1: _____ × _____ = _____ square inches

Rectangle 2: _____ × _____ = _____ square inches

Total Area of Shape: _____ + _____ = _____ square inches

MP **Reasoning** Break apart the shape into two different rectangles and find the total area. What do you notice? Why is this true?

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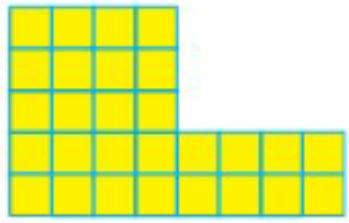
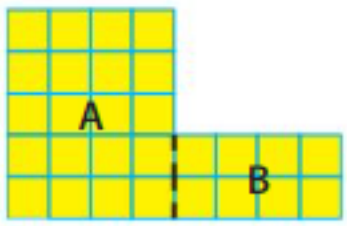
Think and Grow: Find Areas of More Shapes

Example Find the area of the shape.



□ = 1 square foot

One Way:



□ = 1 square foot

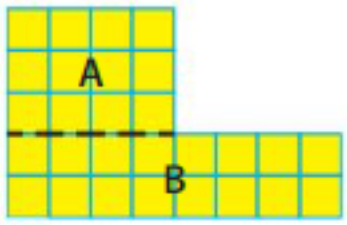
Areas of Rectangles

Rectangle A: $5 \times 4 =$ _____ square feet

Rectangle B: $2 \times 4 =$ _____ square feet

Area of the shape: _____ + _____ = _____ square feet

Another Way:



□ = 1 square foot

Areas of Rectangles

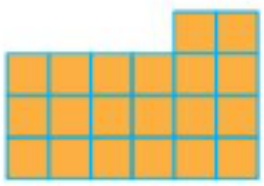
Rectangle A: $3 \times 4 =$ _____ square feet

Rectangle B: $2 \times 8 =$ _____ square feet

Area of the shape: _____ + _____ = _____ square feet

Show and Grow

1. Find the area of the shape.



□ = 1 square meter

Areas of Rectangles

Rectangle A: _____ × _____ = _____ square meters

Rectangle B: _____ × _____ = _____ square meters

Area of the shape: _____ + _____ = _____ square meters

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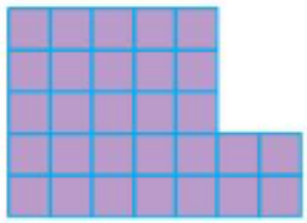
English Spanish

Name _____

Apply and Grow: Practice

Find the area of the shape.

2.



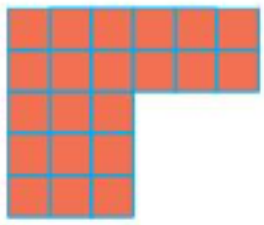
☐ = 1 square inch

Area of Rectangle A: ____ × ____ = ____ square inches

Area of Rectangle B: ____ × ____ = ____ square inches

Area of the shape: ____ + ____ = ____ square inches

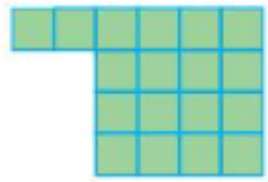
3.



☐ = 1 square centimeter

Area = _____

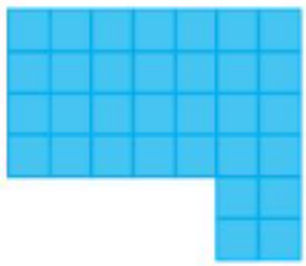
4.



☐ = 1 square inch

Area = _____

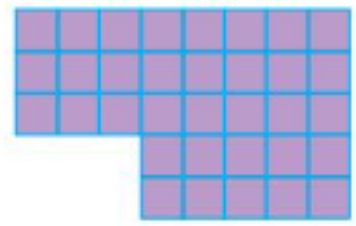
5.



☐ = 1 square foot

Area = _____

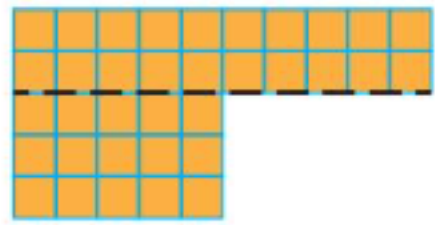
6.



☐ = 1 square meter

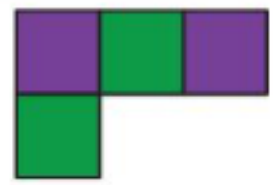
Area = _____

7. **YOU BE THE TEACHER** Your friend says there is only one way to break apart the shape. Is your friend correct? Explain.



☐ = 1 square inch

8. **DIG DEEPER!** Newton uses square tiles to make the design. Each tile is 2 inches long. What is the area of the design? Explain.



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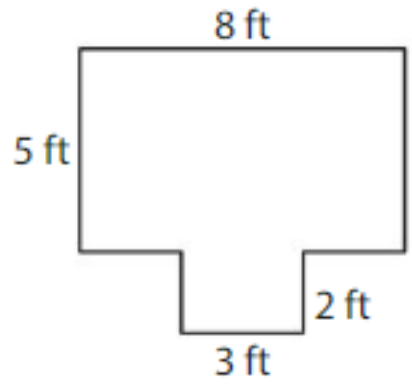
Think and Grow: Modeling Real Life

What is the area of the balcony?



Area of Rectangle A:

Area of Rectangle B:

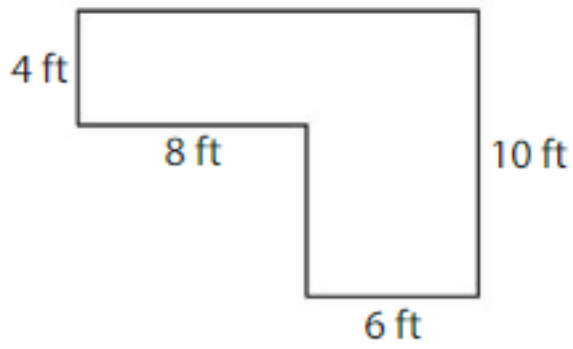
Area of the balcony:

The area of the balcony is _____.

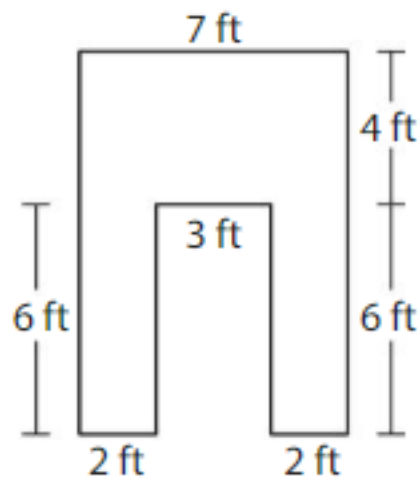
Show and Grow

Find the area of the miniature golf hole.

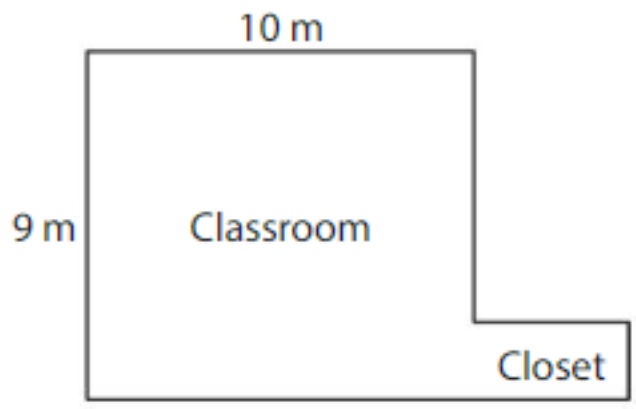
9.



10.



11. DIG DEEPER! The floors of the classroom and closet have an area of 98 square meters. What is the area of the closet floor? Explain.



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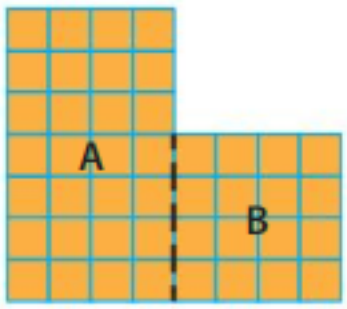
English Spanish

Name _____

Homework & Practice 6.5

Learning Target: Find the area of a shape made up of rectangles.

Example Find the area of the shape.



□ = 1 square inch

Areas of Rectangles

Rectangle A: $7 \times 4 =$ 28 square inches

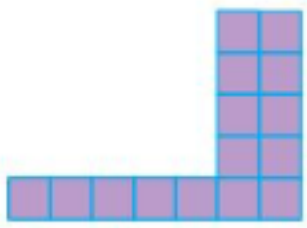
Rectangle B: $4 \times 4 =$ 16 square inches

Area of the shape:

28 + 16 = 44 square inches

Find the area of the shape.

1.



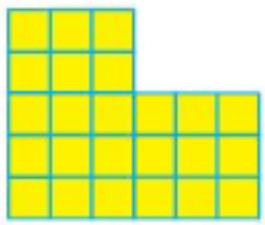
□ = 1 square foot

Area of Rectangle A: _____ × _____ = _____ square feet

Area of Rectangle B: _____ × _____ = _____ square feet

Area of the shape: _____ + _____ = _____ square feet

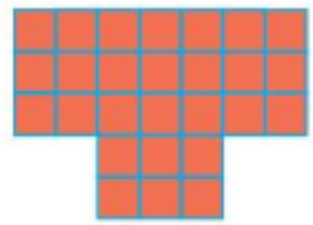
2.



□ = 1 square meter

Area = _____

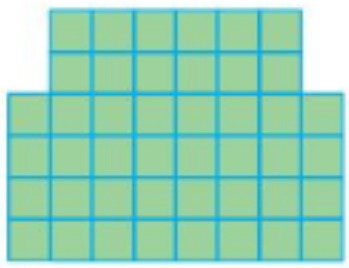
3.



□ = 1 square foot

Area = _____

4.



□ = 1 square inch

Area = _____

5.

□ = 1 square centimeter

Area = _____

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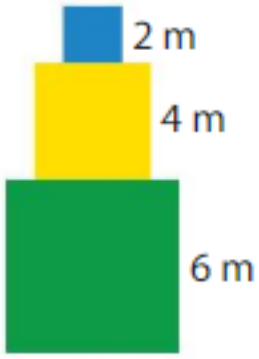
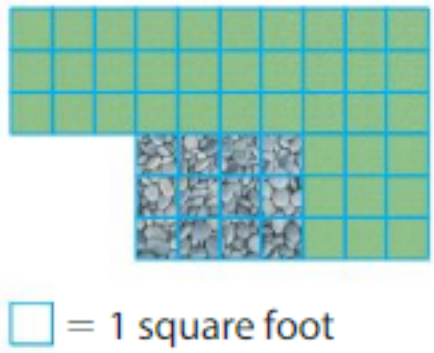
6. **Number Sense** Newton makes a design with squares. What is the total area of his design?

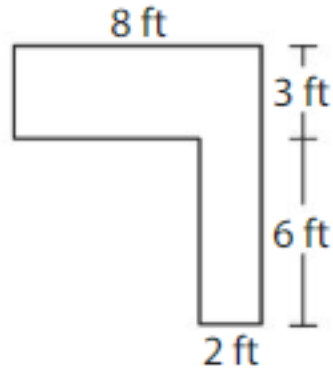


7. **Precision** A landscaper sketches a design for a yard. How much greater is the area of the grass than the area of the rocks?

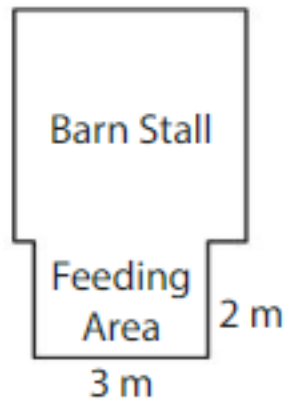


□ = 1 square foot

8. **Modeling Real Life** What is the area of the countertop?



9. **DIG DEEPER!** The floors of the barn stall and feeding area have an area of 22 square meters. What is the area of the barn stall floor? Explain.



Review & Refresh

Complete the table.

10.

×	□	3	□
□			16
6	6		48
8			

11.

×	2	□	9
4		12	
5	10		
□			54

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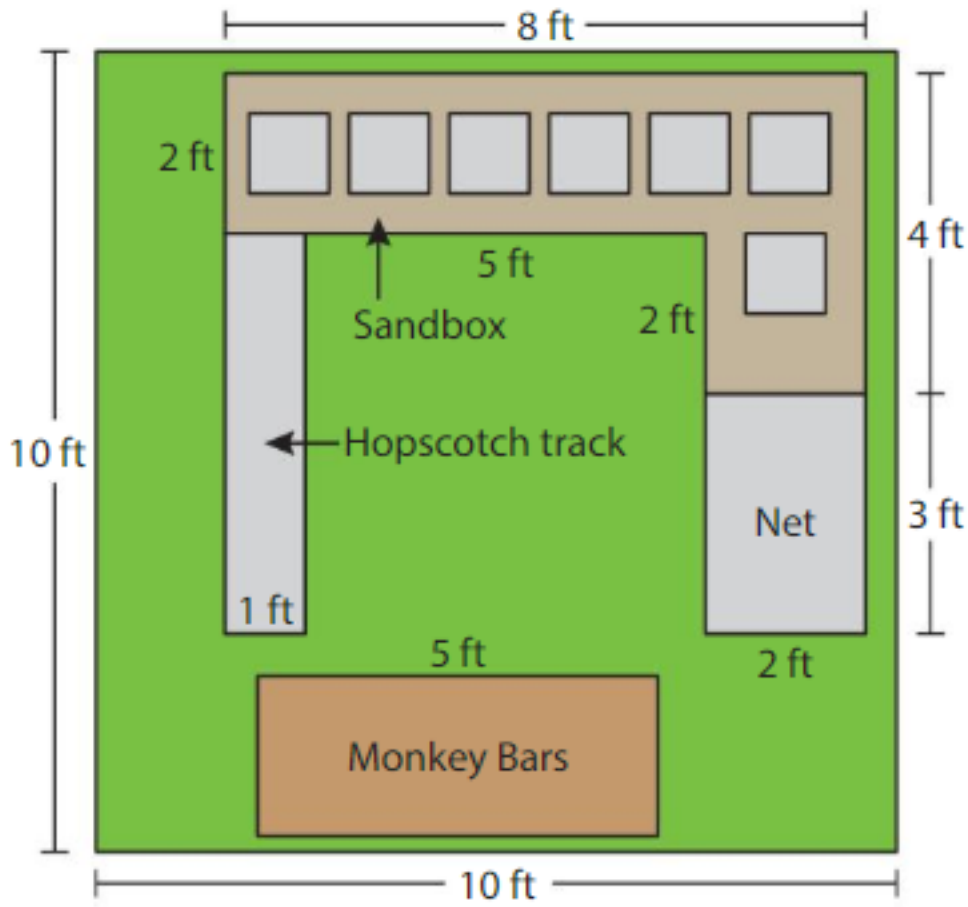
Name _____

Performance Task 6

1. The map shows the top view of an obstacle course.



a. What is the area of the net?

b. What is the area of the hopscotch track?

c. The area of the mud pit under the monkey bars is 10 square feet. What is the missing side length of the mud pit?

d. Each stepping-stone in the sandbox covers 1 square foot. What is the area of the sandbox *not* covered with stones?

e. What is the area of just the grass?

2. The obstacle course opens at 1 o'clock. It is half past 12. How many more minutes until the course opens?

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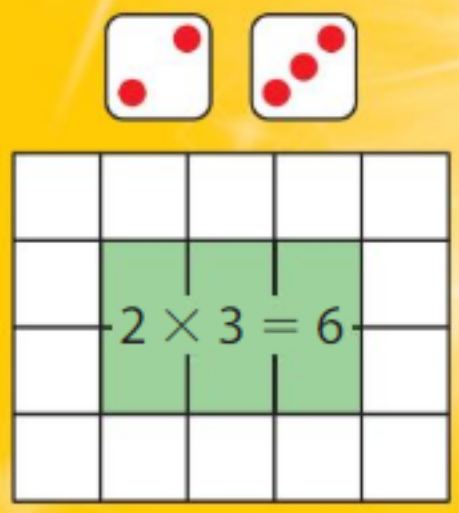
Area Roll and Conquer

Directions:

1. Players take turns rolling two dice.
2. On your turn, create a rectangle with the numbers on the dice as the side lengths. Your rectangle cannot cover another rectangle.
3. Shade the rectangle in your color. Record the multiplication equation for the rectangle.
4. If you cannot create a rectangle on the board, then you lose your turn. Play 10 rounds, if possible.
5. The player with the greatest area covered wins!

Example:



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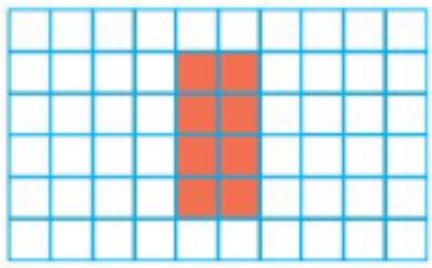
Name _____

Chapter Practice 6

6.1 Understand Area

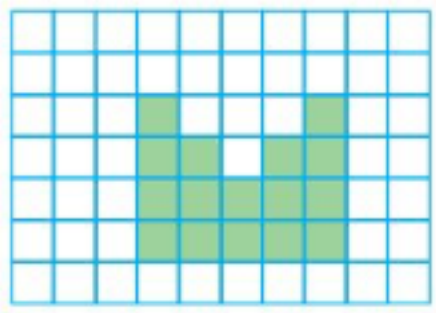
Find the area of the shape.

1.



Area = _____ square units

2.

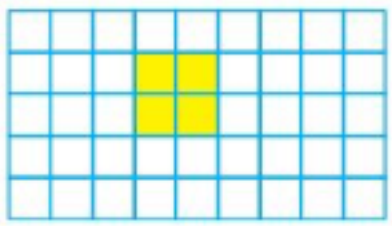


Area = _____ square units

6.2 Measure Area Using Standard Units

Find the area of the shape.

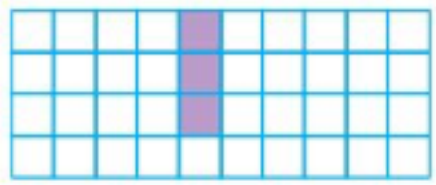
3.



☐ = 1 square meter

Area = _____

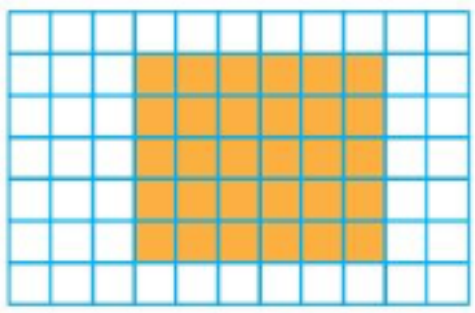
4.



☐ = 1 square inch

Area = _____

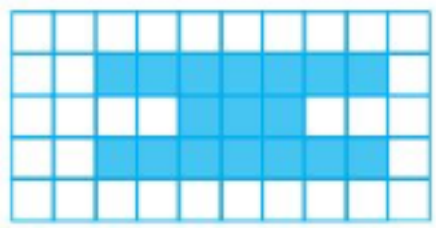
5.



☐ = 1 square centimeter

Area = _____

6.



☐ = 1 square foot

Area = _____

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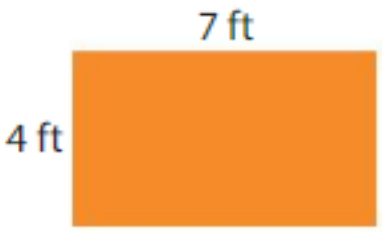
6.3 Find Area by Multiplying

7. Find the area of the rectangle.



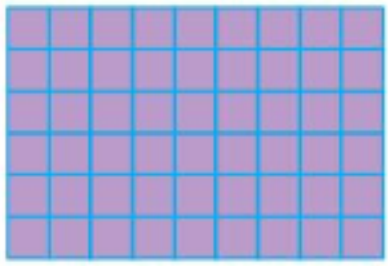
____ × ____ = ____

Area = _____

8. **Modeling Real Life** A textbook cover has an area of 80 square inches. The cover is 8 inches wide. How long is the cover?

6.4 Area and the Distributive Property

9. Use the Distributive Property to find the area of the rectangle.



☐ = 1 square meter

$6 \times 9 =$ $\quad 6 \times (\_\_\_\_ + \_\_\_\_)$

$6 \times 9 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

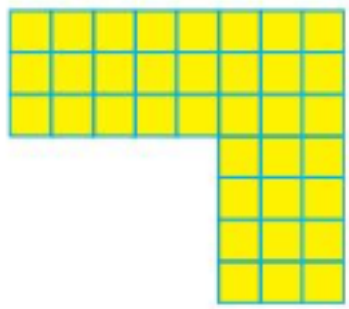
$6 \times 9 =$ $\quad \_\_\_\_ \quad + \quad \_\_\_\_$

$6 \times 9 =$ $\quad \_\_\_\_$

Area = _____

6.5 Find Areas of More Shapes

10. Find the area of the shape.



☐ = 1 square foot

Area = _____

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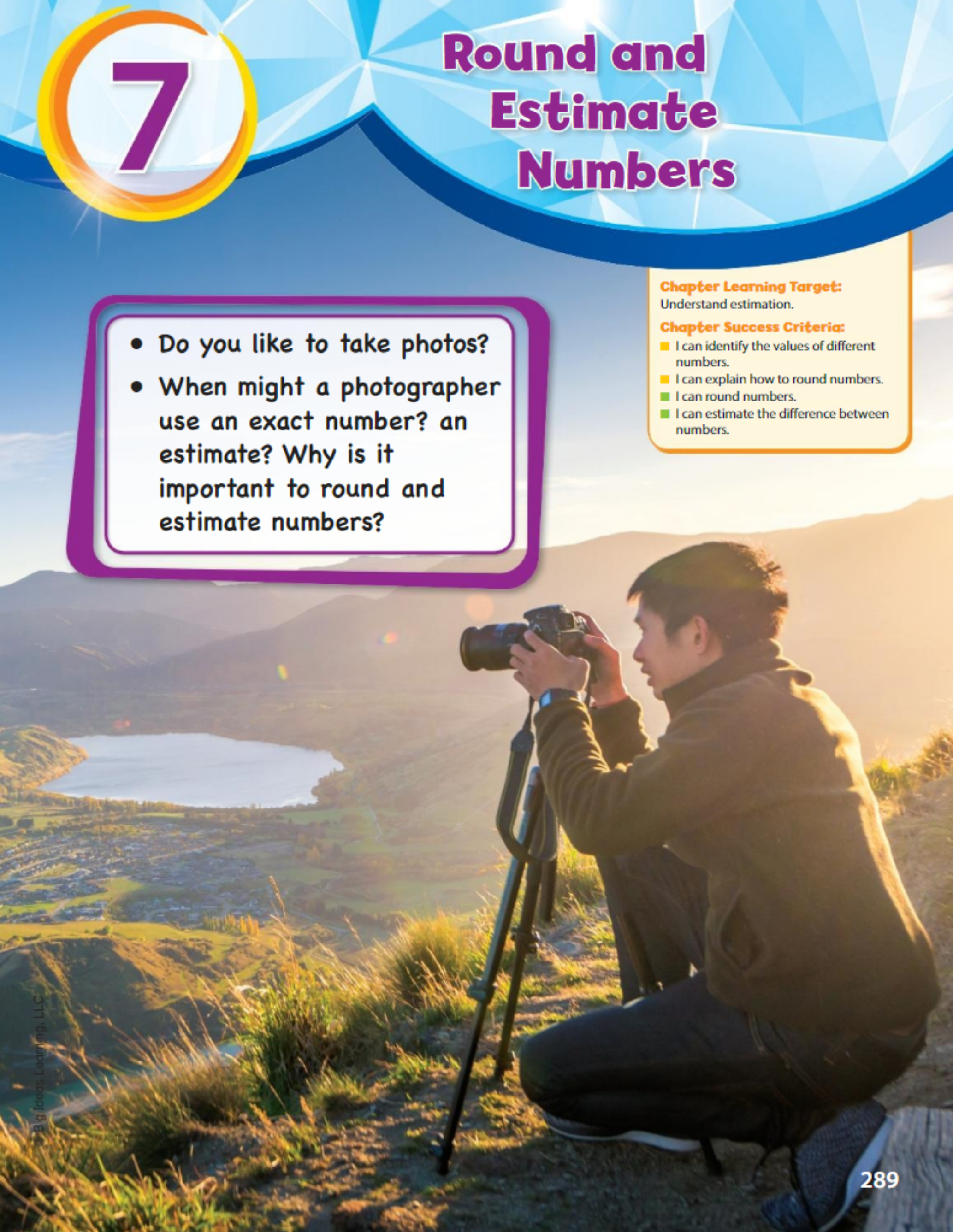
7 Round and Estimate Numbers

- Do you like to take photos?
- When might a photographer use an exact number? an estimate? Why is it important to round and estimate numbers?

Chapter Learning Target:
Understand estimation.

Chapter Success Criteria:
- I can identify the values of different numbers.
- I can explain how to round numbers.
- I can round numbers.
- I can estimate the difference between numbers.



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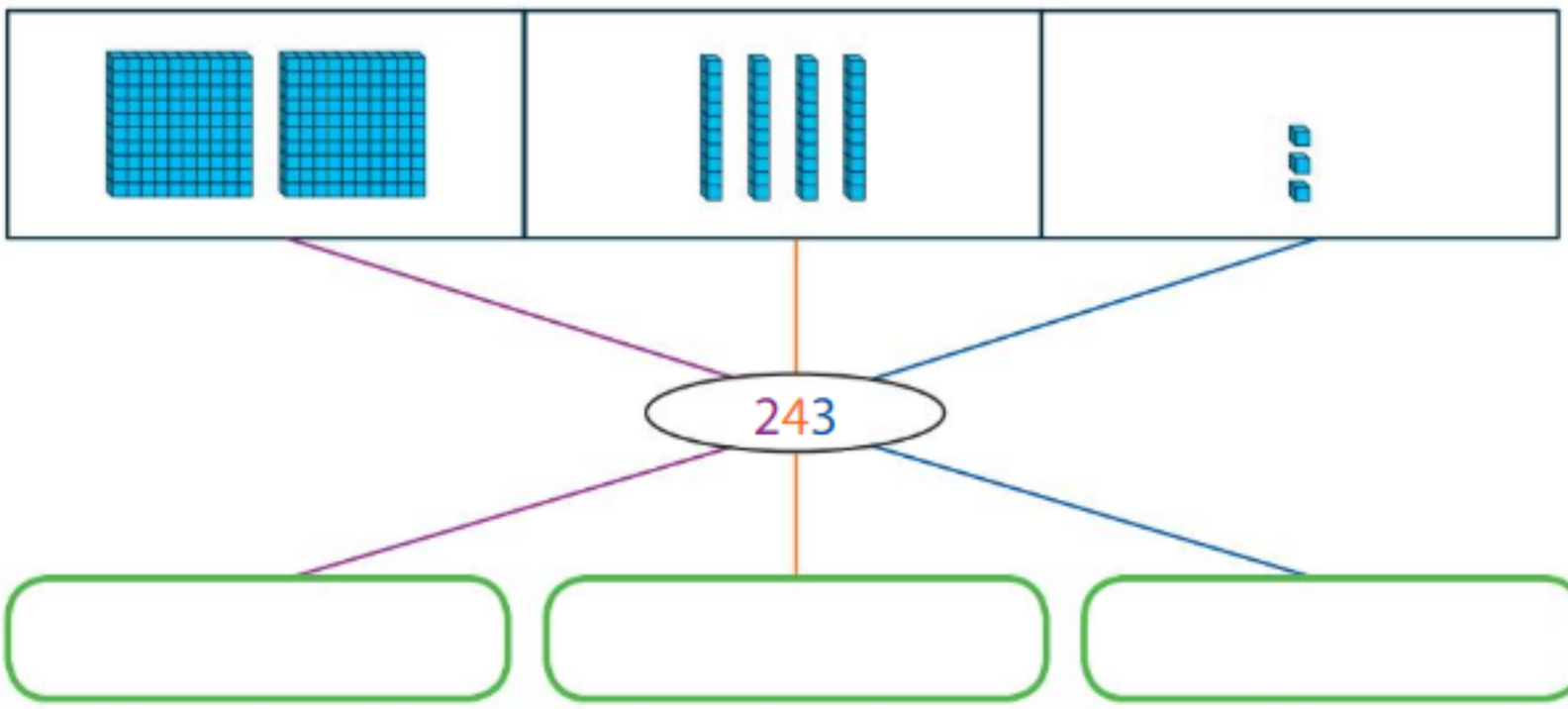
7 Vocabulary

Review Words

hundreds place
ones place
tens place

Organize It

Use the review words to complete the graphic organizer.



Define It

Use your vocabulary cards to identify the word. Find the word in the word search.

1. The value of the place of a digit in a number
2. A number that is close to an exact number
3. To replace a number with the nearest multiple of ten or hundred

C	Z	P	D	E	Z	V	X	S	C
R	A	E	I	S	R	T	Q	U	D
H	K	B	E	T	U	O	J	M	E
O	Y	W	U	I	S	D	U	T	P
I	C	O	E	M	S	T	I	N	M
T	E	V	A	A	L	U	Y	R	D
K	R	T	U	T	W	Q	U	E	Z
P	L	A	C	E	V	A	L	U	E

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Chapter 7 Vocabulary Cards

compatible numbers

estimate

place value

round

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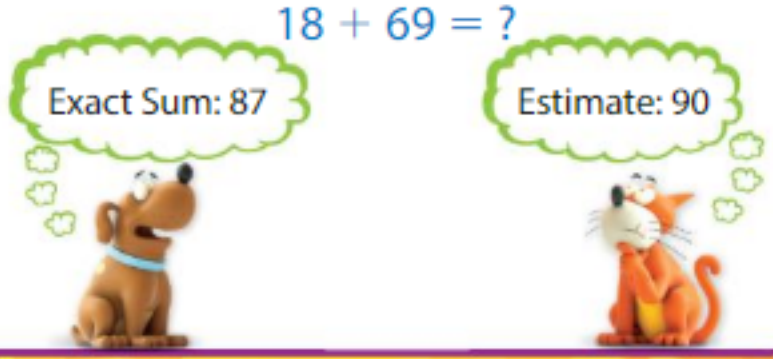
A number that is close to an exact number

$18 + 69 = ?$



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Numbers that are easy to add or subtract mentally and are close to the actual numbers

$$\begin{array}{rcl} 147 & \rightarrow & 150 \\ +\ 199 & \rightarrow & +\ 200 \end{array}$$

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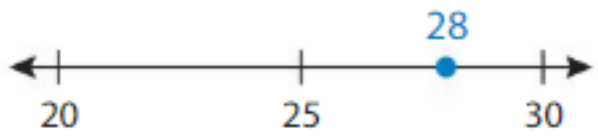
To replace a number with the nearest multiple of ten or hundred



28 **rounded** to the nearest ten is 30.

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The value of the place of a digit in a number

231

The digit 2 has a place value of 100 because it is in the hundreds place.

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Name _____

Place Value 7.1

Learning Target: Identify the values of digits in three-digit numbers.

Success Criteria:

- I can model three-digit numbers.
- I can identify the values of digits in three-digit numbers.
- I can use place value to compare two numbers.

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Preparing for MAFS.3.NBT.1.1

Explore and Grow

Model each number. Write each number in expanded form.

130

310

103

MP **Reasoning** Which number is the greatest? How do you know?

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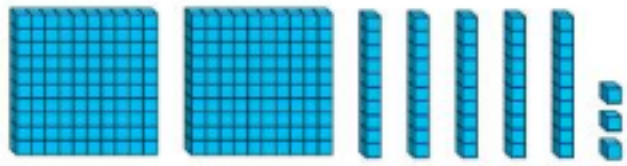
Think and Grow: Place Value

Find the value of the underlined digit.

Example 2<u>5</u>3



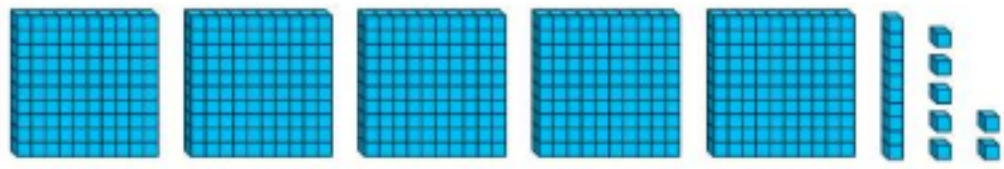
Hundreds	Tens	Ones
_____	_____	_____

The digit 5 has a **place value** of 10 because it is in the tens place.

Expanded form: 200 + 50 + 3

The digit 5 has a value of _____ tens, or _____.

Example <u>5</u>17



Hundreds	Tens	Ones
_____	_____	_____

Expanded form: _____ + _____ + _____

The digit 5 has a value of _____, or _____.

Show and Grow

Circle the value of the underlined digit.

1.	10<u>9</u>	9	90	900
2.	<u>4</u>82	400	40	4
3.	3<u>6</u>6	6	60	600

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English Spanish

Name _____

Apply and Grow: Practice

Circle the value of the underlined digit.

4. 8̲48	80	8	800
5. 63̲4	4	400	40
6. 9̲71	700	70	7
7. 41̲3	3	300	30

Write the value of the underlined digit.

8. 1̲52

9. 72̲5

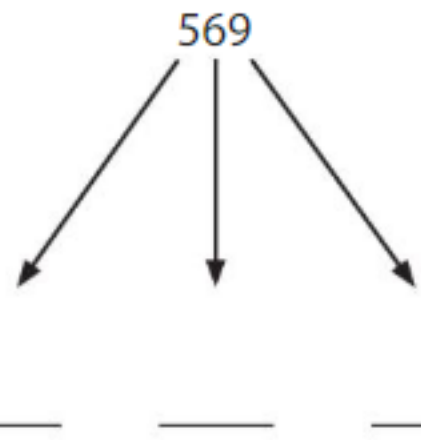
10. 2̲07

Identify the value of each digit.

11.

_____ _____ _____

12.



_____ _____ _____

13. MP **Reasoning** Use each number card once to write the greatest three-digit number. Then use each number card once to write the least three-digit number.

5	8	2

Greatest: _____ Least: _____

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Think and Grow: Modeling Real Life

Newton spends two hundred two dollars at the grocery store. Descartes spends $220. Who spends more money?

Make quick sketches:

Compare: ____ ○ ____

_____ spends more money.

Show and Grow

14. Newton spends one hundred forty-two dollars at the pet store. Descartes spends $124. Who spends more money?

15. DIG DEEPER! Order the weights of the zoo animals from least to greatest. Which animal weighs the least? Which animal weighs the most?

Weights of Zoo Animals	
Animal	**Weight (pounds)**
Tiger	440
Zebra	474
Lion	404
Black bear	444

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English Spanish

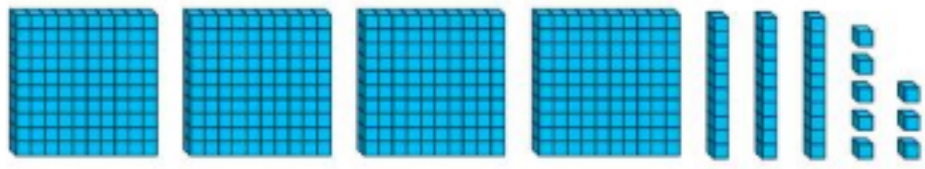
Name _____

Homework & Practice 7.1

Learning Target: Identify the values of digits in three-digit numbers.

Find the value of the underlined digit.

Example 43<u>8</u>



Hundreds	Tens	Ones
4	3	8

Expanded form: 400 + 30 + 8

The digit 8 has a value of 8 ones, or 8.

Circle the value of the underlined digit.

1.	3<u>2</u>5	200	2	20
2.	54<u>1</u>	1	10	100
3.	<u>6</u>53	60	600	6
4.	19<u>4</u>	4	40	400

Write the value of the underlined digit.

5. 7<u>3</u>6

6. <u>9</u>62

7. 89<u>7</u>

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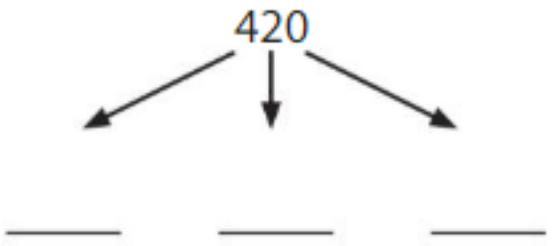
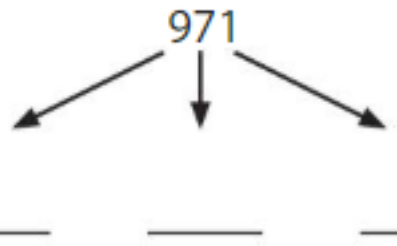
Identify the value of each digit.

8.



9.



10. DIG DEEPER! Descartes is thinking of a number. What is his number?

The three digits of my number are 2, 7, and 5.
My number is even.
My number is less than 750.

11. Modeling Real Life A skating rink gives out three hundred thirty glow sticks on Friday and 303 glow sticks on Saturday. On which day does the skating rink give out more glow sticks?

12. DIG DEEPER! Order the basketball field goals made in a season of the basketball players from least to greatest. Which player made the least number of field goals? Which made the most number of field goals?

Field Goals Made in a Season

Player	Field Goals
A	366
B	326
C	394
D	306

Review & Refresh

Complete the related facts.

13. $9 \div 3 =$ _____
$3 \times$ _____ $= 9$

14. $40 \div 8 =$ _____
$8 \times$ _____ $= 40$

15. $63 \div 7 =$ _____
$7 \times$ _____ $= 63$

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English Spanish

Name _____

Round Numbers Using a Number Line

7.2

Learning Target: Use a number line to round numbers to the nearest ten or nearest hundred.

Success Criteria:

- I can identify the two tens a number is between and which ten it is closer to.
- I can identify the two hundreds a number is between and which hundred it is closer to.
- I can round a number to the nearest ten or nearest hundred.

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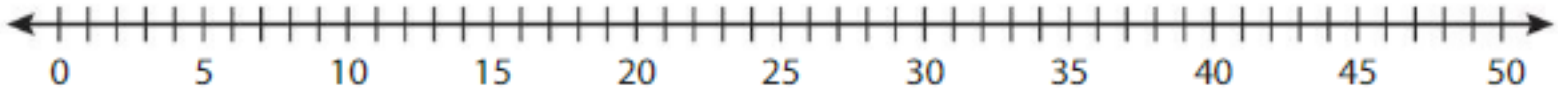
MAFS.3.NBT.1.1

Explore and Grow

Plot 32 on the number line. Circle the two closest multiples of ten.



Which multiple of ten is 32 closer to?

MP **Repeated Reasoning** Which multiple of ten is closer to 38? 31? 36? How did you decide? Explain.

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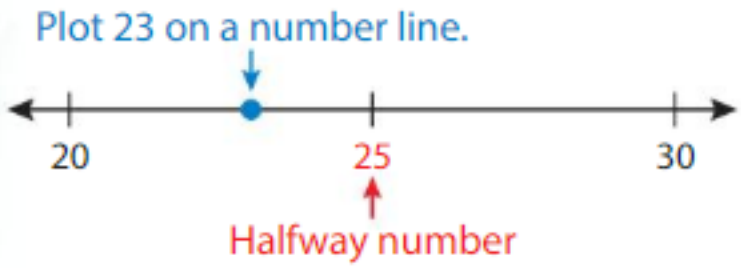
Think and Grow: Round Numbers Using Number Lines

To **round** a number to the nearest ten, replace the number with its nearest multiple of ten. When a number is halfway between two multiples of ten, use the greater number.

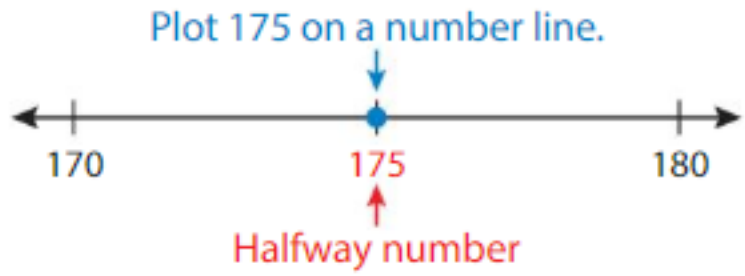
Example Round 23 to the nearest ten.



23 is between 20 and 30.

23 is closer to _____ than it is to _____. So, 23 rounded to the nearest ten is _____.

Example Round 175 to the nearest ten.



175 is halfway between 170 and 180.

So, 175 rounded to the nearest ten is _____.

You can round a number to the nearest hundred in a similar way.

Example Round 465 to the nearest hundred.

465 is closer to _____ than it is to _____.

So, 465 rounded to the nearest hundred is _____.

Show and Grow

1. Round 59 to the nearest ten. _____

2. Round 350 to the nearest hundred. _____

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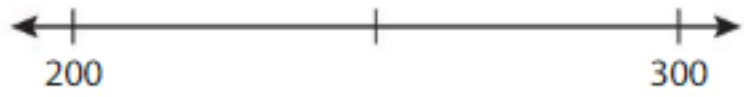
Name _____

Apply and Grow: Practice

Round the number to the nearest ten and to the nearest hundred.

3. 203

Nearest ten: _____



Nearest hundred: _____

4. 75

Nearest ten: _____

Nearest hundred: _____

5. 961

Nearest ten: _____

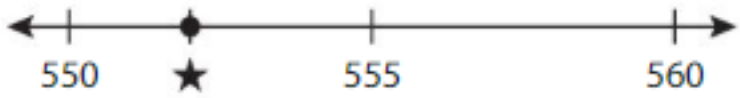
Nearest hundred: _____

6. 47

Nearest ten: _____

Nearest hundred: _____

7. DIG DEEPER! Round ★ to the nearest ten and to the nearest hundred.



Nearest ten: _____

Nearest hundred: _____

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English Spanish

Think and Grow: Modeling Real Life

On which days does the school collect about 90 food items?

Model:

The school collects about 90 food items on _____ and _____.

Food Drive	
Day	**Items Collected**
Monday	88
Tuesday	67
Wednesday	77
Thursday	94
Friday	75

Show and Grow

8. Use the table above to find on which days the school collects about 80 food items.

9. Your teacher wants you to read a book with about 200 pages. Circle the books you can read. Explain.

196 pages 97 pages 272 pages 238 pages 129 pages

10. DIG DEEPER! There are 9 rows and 9 columns of soup cans on a shelf. Round the number of soup cans in all to the nearest ten and to the nearest hundred.

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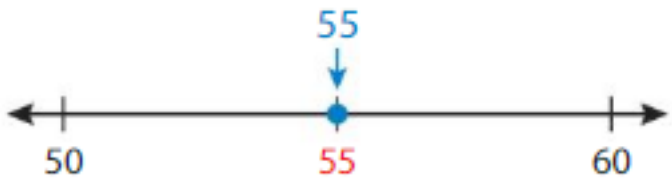
English Spanish

Name _____

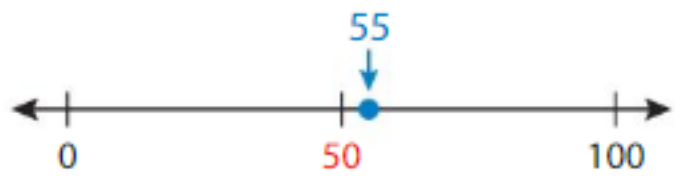
Homework & Practice 7.2

Learning Target: Use a number line to round numbers to the nearest ten or nearest hundred.

Example Round 55 to the nearest ten and to the nearest hundred.



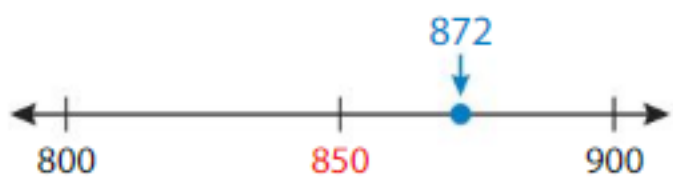
Nearest ten: 60



Nearest hundred: 100

Example Round 872 to the nearest ten and to the nearest hundred.

Nearest ten: 870



Nearest hundred: 900

Round the number to the nearest ten and to the nearest hundred.

1. 39

Nearest ten: _____

Nearest hundred: _____

2. 156

Nearest ten: _____

Nearest hundred: _____

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English Spanish

Round the number to the nearest ten and to the nearest hundred.

3. 402

Nearest ten: _____

Nearest hundred: _____

4. 627

Nearest ten: _____

Nearest hundred: _____

5. **Writing** Explain how to use a number line to round 24 to the nearest ten.

6. **Modeling Real Life** Your class is painting stones for a garden mosaic. On which days does your class paint about 30 stones?

Garden Painting	
Day	**Stones Painted**
Monday	31
Tuesday	22
Wednesday	27
Thursday	35
Friday	38

7. **Modeling Real Life** A giant panda eats about 300 pounds of bamboo every week. Which weights of bamboo can a zookeeper buy to feed a giant panda for a week?

Review & Refresh

Tell whether the product is *even* or *odd*.

8. 3×5 _____

9. 10×8 _____

10. 7×2 _____

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English Spanish

Name _____

7.3 Round Numbers Using Place Value

Learning Target: Use place value to round numbers to the nearest ten or nearest hundred.

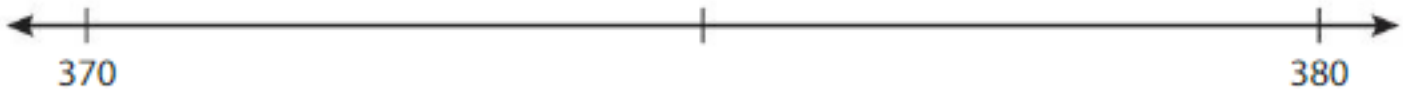
Success Criteria:

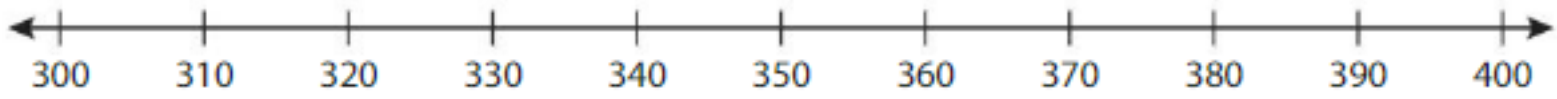
- I can explain which digit I use to round and why.
- I can identify which ten or hundred is closest to a number.
- I can round a number to the nearest ten or nearest hundred.

FLORIDA STANDARDS
MAFS.3.NBT.1.1

Explore and Grow

Plot 376 on each number line. Round the number to the nearest ten and to the nearest hundred.





Nearest ten: _____

Nearest hundred: _____

MP **Reasoning** How can you round the number without using the number line?

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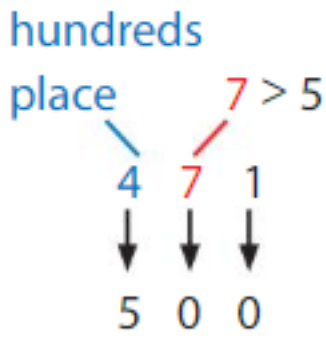
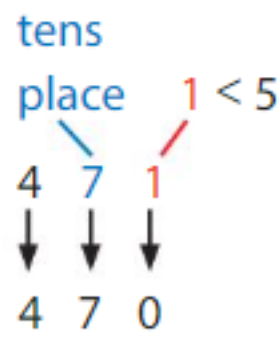
English Spanish

Think and Grow: Round Numbers Using Place Value

Use Place Value to Round Numbers

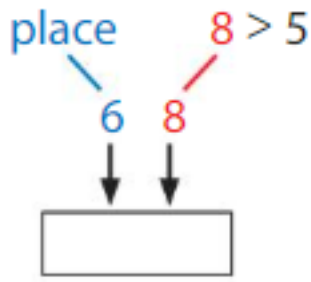
- Find the place to which you are rounding.
- Look at the digit to the right. If it is less than 5, then the digit in the place you are rounding stays the same. If it is 5 or greater, then the digit in the place you are rounding increases by 1.
- Write zeros for the digits to the right of the place you are rounding.





Example Round 68 to the nearest ten.

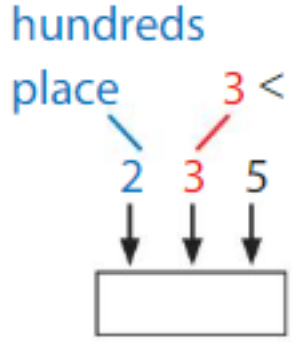
Nearest Ten



68 rounded to the nearest ten is _____.

Example Round 235 to the nearest hundred and to the nearest ten.

Nearest Hundred



Nearest Ten

235 rounded to the nearest hundred is _____. 235 rounded to the nearest ten is _____.

Show and Grow

Round the number to the nearest ten.

1. 41 _____ | **2.** 85 _____ | **3.** 153 _____

Round the number to the nearest hundred.

4. 749 _____ | **5.** 372 _____ | **6.** 94 _____

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English Spanish

Name _____

Apply and Grow: Practice

Round the number to the nearest ten.

7. 17 _____	**8.** 52 _____	**9.** 79 _____
10. 673 _____	**11.** 521 _____	**12.** 208 _____

Round the number to the nearest hundred.

13. 161 _____	**14.** 738 _____	**15.** 504 _____
16. 50 _____	**17.** 22 _____	**18.** 999 _____

Round the number to the nearest ten and to the nearest hundred.

19. 836	**20.** 945	**21.** 72
Nearest ten: _____	Nearest ten: _____	Nearest ten: _____
Nearest hundred: _____	Nearest hundred: _____	Nearest hundred: _____

22. MP **Number Sense** Newton rounds 587 to 590. To what place does he round?

23. MP **Number Sense** Which numbers round to 400 when rounded to the nearest hundred?

356 482 437 319

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English Spanish

Think and Grow: Modeling Real Life

On which day do about 800 people attend the concert? Explain.

About 800 people attend the concert

on _____.

Explain:

People at a Concert

Day	Number of People
Wednesday	866
Thursday	829
Friday	952
Saturday	935
Sunday	942

Show and Grow

24. Use the table above to find on which days about 940 people attend the concert. Explain.

DIG DEEPER! Round the time to the nearest ten minutes.

25.

_____

26.

_____

27. Explain how using place value to round is similar to using a number line to round.

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English Spanish

Name _____

Homework & Practice 7.3

Learning Target: Use place value to round numbers to the nearest ten or nearest hundred.

Use Place Value to Round Numbers

- Find the place to which you are rounding.
- Look at the digit to the right. If it is less than 5, then the digit in the place you are rounding stays the same. If it is 5 or greater, then the digit in the place you are rounding increases by 1.
- Write zeros for the digits to the right of the place you are rounding.

Example Round 746 to the nearest ten and to the nearest hundred.

Nearest Ten

tens place

6 > 5

7 4 6

7 5 0

Nearest Hundred

hundreds place

4 < 5

7 4 6

7 0 0

Remember: you can use place value to round a two-digit number, too!

Round the number to the nearest ten.

1. 29 _____ | **2.** 564 _____ | **3.** 843 _____

Round the number to the nearest hundred.

4. 281 _____ | **5.** 36 _____ | **6.** 975 _____

Round the number to the nearest ten and to the nearest hundred.

7. 152

Nearest ten: _____

Nearest hundred: _____

8. 308

Nearest ten: _____

Nearest hundred: _____

9. 45

Nearest ten: _____

Nearest hundred: _____

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English Spanish

10. DIG DEEPER! What is the least number that rounds to 20 when rounded to the nearest ten? What is the greatest number?

Least: _____

Greatest: _____

11. MP **Number Sense** A three-digit number has the digits 3, 5, and 6. It rounds to 700 when rounded to the nearest hundred. What is the number? Explain.

12. YOU BE THE TEACHER Descartes says that a number rounded to the nearest ten can be greater than the same number rounded to the nearest hundred. Is Descartes correct? Explain.

13. **Modeling Real Life** On which months are there about 450 people at the basketball courts? Explain.

People at the Basketball Courts

Month	Number of People
May	429
June	445
July	502
August	453
September	414

DIG DEEPER! Round the time to the nearest ten minutes.

14.

_____

15.

_____

Review & Refresh

Find the product.

16.
$$\begin{array}{r} 9 \\ \times\ 0 \\ \hline \end{array}$$

17.
$$\begin{array}{r} 10 \\ \times\ 9 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 9 \\ \times\ 3 \\ \hline \end{array}$$

19.
$$\begin{array}{r} 6 \\ \times\ 9 \\ \hline \end{array}$$

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English Spanish

Name _____

Estimate Sums 7.4

Learning Target: Use rounding or compatible numbers to estimate sums.

Success Criteria:

- I can use rounding to estimate a sum.
  I can use compatible numbers to estimate a sum.
- I can explain different ways to estimate a sum.

FLORIDA STANDARDS

MAFS.3.NBT.1.1
MAFS.3.NBT.1.2

Explore and Grow

Round each addend. Then find the sum.

$$\begin{array}{rcl} 83 & \longrightarrow & \square \\ +\ 119 & \longrightarrow & +\ \square \\ \hline & & \square \end{array} \qquad \begin{array}{rcl} 156 & \longrightarrow & \square \\ +\ 103 & \longrightarrow & +\ \square \\ \hline & & \square \end{array}$$

MP **Construct Arguments** Compare your answers to your partner's answers. Explain why they are the same or why they are different.

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English Spanish

Think and Grow: Estimate Sums

An **estimate** is a number that is close to an exact number. You can estimate a sum by rounding or by using compatible numbers. **Compatible numbers** are numbers that are easy to add mentally and are close to the actual numbers.

Example Estimate 258 + 631.

One Way: Use rounding. Round each addend to the nearest hundred. Then find the sum of the rounded numbers.

$$\begin{array}{rcl} 258 & \longrightarrow & \square \\ +\ 631 & \longrightarrow & +\ \square \\ \hline & & \square \end{array}$$

So, 258 + 631 is about _____.

Another Way: Use compatible numbers.

$$\begin{array}{rcl} 258 & \longrightarrow & 250 \\ +\ 631 & \longrightarrow & +\ 625 \\ \hline & & \square \end{array}$$

So, 258 + 631 is about _____.

Show and Grow

1. Round to the nearest ten to estimate the sum.

$$\begin{array}{rcl} 38 & \longrightarrow & \square \\ +\ 45 & \longrightarrow & +\ \square \\ \hline & & \square \end{array}$$

2. Round to the nearest hundred to estimate the sum.

$$\begin{array}{rcl} 407 & \longrightarrow & \square \\ +\ 189 & \longrightarrow & +\ \square \\ \hline & & \square \end{array}$$

Use compatible numbers to estimate the sum.

3.
$$\begin{array}{rcl} 71 & \longrightarrow & \square \\ +\ 22 & \longrightarrow & +\ \square \\ \hline & & \square \end{array}$$

4.
$$\begin{array}{rcl} 353 & \longrightarrow & \square \\ +\ 142 & \longrightarrow & +\ \square \\ \hline & & \square \end{array}$$

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English Spanish

Name _____

Apply and Grow: Practice

Round to the nearest ten to estimate the sum.

5. 214 + 357 = ☐ + ☐ = ☐

6. 465 + 23 = ☐ + ☐ = ☐

7. 532 + 241 = ☐ + ☐ = ☐

Round to the nearest hundred to estimate the sum.

8. 62 + 75 = ☐ + ☐ = ☐

9. 304 + 381 = ☐ + ☐ = ☐

10. 897 + 126 = ☐ + ☐ = ☐

Use compatible numbers to estimate the sum.

11. 222 + 678 = ☐ + ☐ = ☐

12. 491 + 407 = ☐ + ☐ = ☐

13. 347 + 52 = ☐ + ☐ = ☐

Estimate the sum.

14. 326 + 472

____ + ____ = ____

15. 205 + 101

____ + ____ = ____

16. 58 + 24

____ + ____ = ____

17. MP **Structure** Estimate the sum of 324 + 277 two different ways.

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English Spanish

Think and Grow: Modeling Real Life

An airplane flies from Cleveland to Saint Louis. Then it flies from Saint Louis to Chicago. About how many miles does the airplane fly in all?

Understand the problem:

Make a plan:

Solve:

The airplane flies about _____ miles in all.

Show and Grow

18. Use the map above. An airplane flies from Dallas to Saint Louis, and then flies from Saint Louis to Nashville. About how many miles does the airplane fly in all?

19. There are 178 third-grade students, 239 fourth-grade students, and 309 fifth-grade students at a museum. About how many students are at the museum? Explain.

Is there another way you can estimate to solve the problem? Explain.

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English Spanish

Name _____

Homework & Practice 7.4

Learning Target: Use rounding or compatible numbers to estimate sums.

Example Estimate 641 + 153.

One Way: Use rounding. Round each addend to the nearest ten. Then find the sum of the rounded numbers.

$$\begin{array}{rcl} 641 & \longrightarrow & 640 \\ +\ 153 & \longrightarrow & +\ 150 \\ \hline & & 790 \end{array}$$

So, 641 + 153 is about 790.

Another Way: Use compatible numbers.

$$\begin{array}{rcl} 641 & \longrightarrow & 650 \\ +\ 153 & \longrightarrow & +\ 150 \\ \hline & & 800 \end{array}$$

So, 641 + 153 is about 800.

Round to the nearest ten to estimate the sum.

1. 239 + 417 = ☐ + ☐ = ☐

2. 351 + 164 = ☐ + ☐ = ☐

3. 55 + 43 = ☐ + ☐ = ☐

Round to the nearest hundred to estimate the sum.

4. 523 + 376 = ☐ + ☐ = ☐

5. 648 + 21 = ☐ + ☐ = ☐

6. 762 + 235 = ☐ + ☐ = ☐

Use compatible numbers to estimate the sum.

7. 26 + 51 = ☐ + ☐ = ☐

8. 454 + 448 = ☐ + ☐ = ☐

9. 177 + 522 = ☐ + ☐ = ☐

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English Spanish

Estimate the sum.

10. 621 + 314

____ + ____ = ____

11. 105 + 82

____ + ____ = ____

12. 228 + 276

____ + ____ = ____

13. **DIG DEEPER!** Will Newton's estimated sum be greater than or less than the actual sum? Explain.

486	500
+ 379	+ 400

14. **Logic** Newton has $25. Descartes has $32. Do they have more than $50 in all? Use estimates to explain.

15. **Modeling Real Life** An airplane flies from San Francisco to Las Vegas, and then flies from Las Vegas to Los Angeles. About how many miles does the airplane fly in all?

16. **Modeling Real Life** A beach hut owner sells 118 towels, 121 surfboards, and 162 bathing suits. About how many items does the owner sell? Explain.

Review & Refresh

Compare.

17. 24 ÷ 8 ◯ 36 ÷ 9

18. 40 ÷ 8 ◯ 45 ÷ 9

19. 48 ÷ 8 ◯ 27 ÷ 9

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English Spanish

Name _____

Estimate Differences 7.5

Learning Target: Use rounding or compatible numbers to estimate differences.

Success Criteria:

- I can use rounding to estimate a difference.
- I can use compatible numbers to estimate a difference.
- I can explain different ways to estimate a difference.

FLORIDA STANDARDS

MAFS.3.NBT.1.1
MAFS.3.NBT.1.2

Explore and Grow

Estimate each difference.

175	→	☐	263	→	☐
− 63	→	− ☐	− 197	→	− ☐
		☐			☐

MP **Construct Arguments** Compare your answers to your partner's answers. Explain why they are the same or why they are different.

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English Spanish

Think and Grow: Estimate Differences

You can estimate a difference by rounding or by using compatible numbers.

Example Estimate 673 − 429.

One Way: Use rounding. Round each number to the nearest ten. Then find the difference of the rounded numbers.

673 → ☐

− 429 → − ☐

☐

So, 673 − 429 is about _____.

Another Way: Use compatible numbers.

673 → ☐

− 429 → − ☐

☐

So, 673 − 429 is about _____.

Show and Grow

1. Round to the nearest ten to estimate the difference.

72 → ☐

− 37 → − ☐

☐

2. Round to the nearest hundred to estimate the difference.

586 → ☐

− 314 → − ☐

☐

Use compatible numbers to estimate the difference.

3. 95 → ☐

− 26 → − ☐

☐

4. 768 → ☐

− 273 → − ☐

☐

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English Spanish

Name _____

Apply and Grow: Practice

Round to the nearest ten to estimate the difference.

5. 556 − 129 = ☐

6. 384 − 31 = ☐

7. 702 − 428 = ☐

Round to the nearest hundred to estimate the difference.

8. 763 − 98 = ☐

9. 901 − 305 = ☐

10. 875 − 529 = ☐

Use compatible numbers to estimate the difference.

11. 985 − 148 = ☐

12. 676 − 226 = ☐

13. 549 − 52 = ☐

Estimate the difference.

14. 455 − 221

____ − ____ = ____

15. 674 − 348

____ − ____ = ____

16. 97 − 53

____ − ____ = ____

17. **DIG DEEPER!** Write a subtraction problem using 2 three-digit numbers that have an estimated difference of 200.

18. MP **Structure** Did Descartes round to the nearest ten or to the nearest hundred to estimate the difference?

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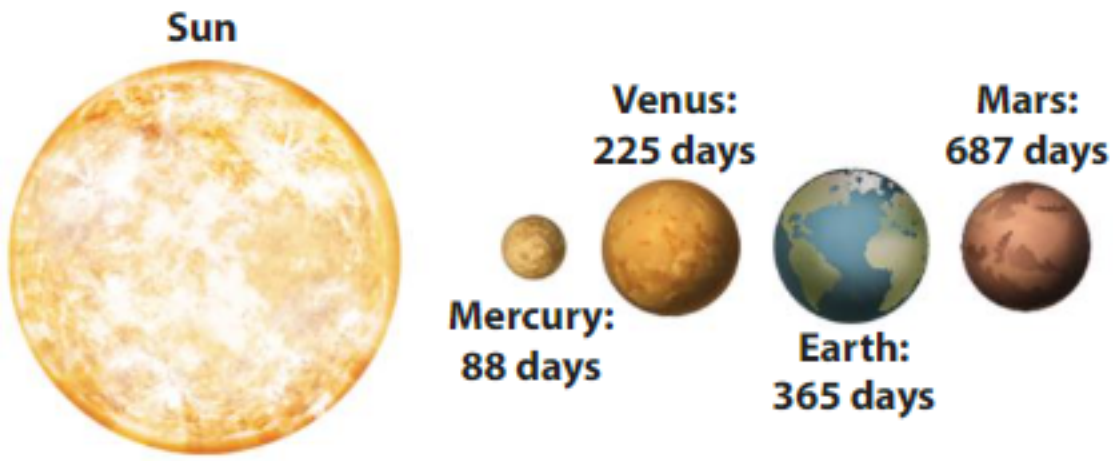
English Spanish

Think and Grow: Modeling Real Life

The diagram shows the numbers of days it takes four planets to orbit the Sun. About how many more days does it take Mars to orbit the Sun than Venus?

Estimate:



It takes Mars about _____ more days than Venus.

Show and Grow

19. Use the diagram above to find about how many more days it takes Earth to orbit the Sun than Mercury.

20. Your school gym can seat 500 people on one side and 350 people on the other side. There are 459 people in their seats. About how many more people can be seated in the gym?

21. A bus is traveling 876 miles from Raleigh to New Orleans. The bus travels 264 miles in the morning and 327 miles in the afternoon. About how many more miles does the bus have left to travel? Explain.

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English Spanish

Name _____

Homework & Practice 7.5

Learning Target: Use rounding or compatible numbers to estimate differences.

Example Estimate 672 − 423.

One Way: Use rounding. Round each number to the nearest hundred. Then find the difference of the rounded numbers.

$$\begin{array}{r} 672 \\ -\ 423 \\ \hline \end{array} \longrightarrow \begin{array}{r} 700 \\ -\ 400 \\ \hline 300 \end{array}$$

So, 672 − 423 is about 300.

Another Way: Use compatible numbers.

$$\begin{array}{r} 672 \\ -\ 423 \\ \hline \end{array} \longrightarrow \begin{array}{r} 675 \\ -\ 425 \\ \hline 250 \end{array}$$

So, 672 − 423 is about 250.

Round to the nearest ten to estimate the difference.

1. 847 − 468 = ☐ − ☐ = ☐

2. 153 − 129 = ☐ − ☐ = ☐

3. 34 − 21 = ☐ − ☐ = ☐

Round to the nearest hundred to estimate the difference.

4. 598 − 347 = ☐ − ☐ = ☐

5. 811 − 67 = ☐ − ☐ = ☐

6. 931 − 747 = ☐ − ☐ = ☐

Use compatible numbers to estimate the difference.

7. 96 − 47 = ☐ − ☐ = ☐

8. 678 − 142 = ☐ − ☐ = ☐

9. 746 − 51 = ☐ − ☐ = ☐

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English Spanish

Estimate the difference.

10. 258 − 205

____ − ____ = ____

11. 781 − 62

____ − ____ = ____

12. 914 − 522

____ − ____ = ____

---

13. **YOU BE THE TEACHER** Your friend estimated the difference by rounding to the nearest hundred. Is your friend correct? Explain.

649	600
− 308	− 300
	900

---

14. **Structure** Estimate the difference of 581 − 213 two different ways.

---

15. **Modeling Real Life** A drama club sold 259 tickets for a school play. So far, 103 people have arrived for the play. About how many more people are expected to arrive?

---

16. **Modeling Real Life** Construction workers are building an 800-foot tall building. They complete 76 feet one month and 195 feet the next month. About how many more feet do they have left to build?

Review & Refresh

17. Find the area of the rectangle.

____ × ____ = ____

Area = _____

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English Spanish

Name _____

Performance Task 7

1. The table shows the number of photos a photographer takes each day.

Day	Number of Photos
Thursday	157
Friday	104
Saturday	221
Sunday	91

a. About how many more photos does the photographer take on Saturday than Sunday?

b. Estimate the total number of photos taken all four days.

c. Is the actual number of photos more than or less than your estimate from above? Explain.

d. The photographer's camera can store 700 photos. About how many more photos can the photographer take?

e. The photographer gives you all of the photos. You put some photos in an album. You have 453 photos left. How many photos are in your album?

f. Your album has 10 pages. You put an equal number of photos on each page. How many photos are on each page?

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English Spanish

Round to Find a Pearl

Directions:

1. Players take turns rolling a die.
2. On your turn, move your piece the number of spaces shown on the die. If the space is purple, then round the number to the nearest ten. If the space is green, then round the number to the nearest hundred.
3. Find the rounded number on a pearl and cover it with a counter.
4. Repeat this process until all of the pearls are covered. The player who covers the most pearls wins!

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Name _____

Chapter Practice 7

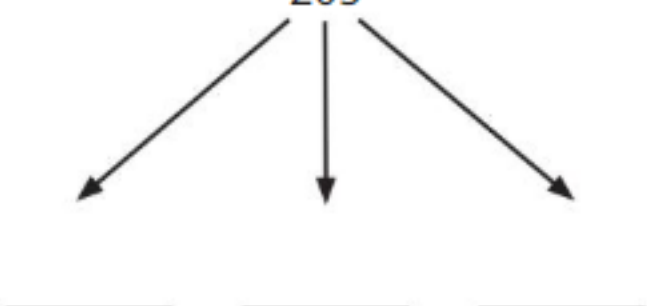
7.1 Place Value

Circle the value of the underlined digit.

1. 9̲41	900	9	90
2. 53̲7	3	30	300

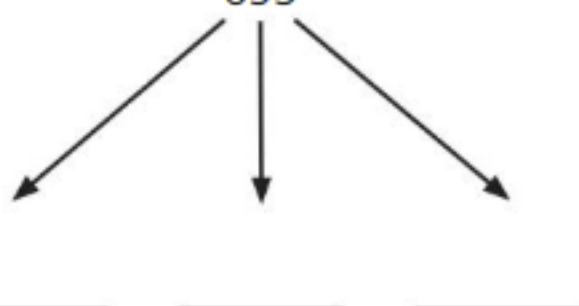
Identify the value of each digit.

3.



_____ _____ _____

4.



_____ _____ _____

7.2 Round Numbers Using a Number Line

Round the number to the nearest ten and to the nearest hundred.

5. 725

Nearest ten: _____

Nearest hundred: _____

6. 34

Nearest ten: _____

Nearest hundred: _____

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7.3 Round Numbers Using Place Value

Round the number to the nearest ten and to the nearest hundred.

7. 247

Nearest ten: _____

Nearest hundred: _____

8. 571

Nearest ten: _____

Nearest hundred: _____

9. 86

Nearest ten: _____

Nearest hundred: _____

10. **Number Sense** Descartes rounds 742 to 700. To what place does he round?

7.4 Estimate Sums

Estimate the sum.

11. 33 + 59

____ + ____ = ____

12. 124 + 477

____ + ____ = ____

13. 122 + 181

____ + ____ = ____

7.5 Estimate Differences

Estimate the difference.

14. 692 − 71

____ − ____ = ____

15. 478 − 152

____ − ____ = ____

16. 537 − 409

____ − ____ = ____

17. **Modeling Real Life** A killer whale is 312 inches long. A striped dolphin is 102 inches long. About how much longer is the killer whale than the striped dolphin?

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8 Add and Subtract Multi-Digit Numbers

- What types of acts can you see at a talent show? What act would you want to perform?
- A school holds two talent shows. What strategies can you use to find the total number of people who attend the shows?

Chapter Learning Target:
Understand addition and subtraction properties.

Chapter Success Criteria:
- I can identify properties of addition.
- I can explain what addition properties mean.
- I can count on and count back to problem solve.
- I can solve a problem.

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8 Vocabulary

Review Words

Associative Property of Multiplication

factors

product

Organize It

Use the review words to complete the graphic organizer.

[ ]

Changing the grouping of [ ]

does not change the [ ].

$2 \times (3 \times 4) = 24$

$(2 \times 3) \times 4 = 24$

So, $2 \times (3 \times 4) = (2 \times 3) \times 4$.

Define It

Use your vocabulary cards to match.

1. Addition Property of Zero

2. Associative Property of Addition

3. Commutative Property of Addition

$6 + 5 = 5 + 6$

$5 + 0 = 5$

$7 + (3 + 4) = (7 + 3) + 4$

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Chapter 8 Vocabulary Cards

Addition Property of Zero

Associative Property of Addition

Commutative Property of Addition

inverse operations

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Changing the grouping of addends does not change the sum.

$7 + (3 + 4) = 14$

$(7 + 3) + 4 = 14$

So, $7 + (3 + 4) = (7 + 3) + 4$.

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The sum of any number and 0 is that number.

$5 + 0 = 5$

$48 + 0 = 48$

$376 + 0 = 376$

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Operations that "undo" each other, such as addition and subtraction or multiplication and division

Addition $9 + 2 = 11$	Subtraction $11 - 2 = 9$
Multiplication $4 \times 3 = 12$	Division $12 \div 3 = 4$

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Changing the order of addends does not change the sum.

$6 + 5 = 11$

$5 + 6 = 11$

So, $6 + 5 = 5 + 6$.

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8.1 Identify Addition Properties

Learning Target: Identify and use addition properties.

Success Criteria:

- I can identify the Associative and Commutative Properties of Addition.
- I can identify the Addition Property of Zero.
- I can use an addition property to find a sum.
- I can explain what the addition properties mean.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

Use the addition table to write all of the addition equations that have a sum of 13.

+	0	1	2	3	4	5	6	7	8	9	10
0	0	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10	11
2	2	3	4	5	6	7	8	9	10	11	12
3	3	4	5	6	7	8	9	10	11	12	13
4	4	5	6	7	8	9	10	11	12	13	14
5	5	6	7	8	9	10	11	12	13	14	15
6	6	7	8	9	10	11	12	13	14	15	16
7	7	8	9	10	11	12	13	14	15	16	17
8	8	9	10	11	12	13	14	15	16	17	18
9	9	10	11	12	13	14	15	16	17	18	19
10	10	11	12	13	14	15	16	17	18	19	20

What do you notice?

MP **Structure** Use the addition table to write all of the equations that have a sum of 12. What do you notice now?

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Think and Grow: Addition Properties

Commutative Property of Addition

Changing the order of addends does not change the sum.

$$3 + 5 = 5 + 3$$

Associative Property of Addition

Changing the grouping of addends does not change the sum.

$$(7 + 6) + 4 = 7 + (6 + 4)$$

Addition Property of Zero

The sum of any number and 0 is that number.

$$9 + 0 = 9$$

Example Identify the property.

$56 + 0 = 56$ _____

$12 + 29 = 29 + 12$ _____

$(24 + 17) + 23 = 24 + (17 + 23)$ _____

Show and Grow

Identify the property.

1. $16 + (14 + 19) = (16 + 14) + 19$

2. $11 + 54 = 54 + 11$

3. $0 + 43 = 43$

4. $(27 + 18) + 22 = 27 + (18 + 22)$

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Name _____

Apply and Grow: Practice

Identify the property.

5. $(28 + 16) + 14 = 28 + (16 + 14)$

6. $12 + 35 = 35 + 12$

7. $36 + 0 = 36$

8. $11 + (9 + 57) = (11 + 9) + 57$

Find the missing number.

9. $23 + 45 = 45 + \_\_\_\_$

10. $(13 + 12) + \_\_\_\_ = 13 + (12 + 45)$

11. $4 + (76 + 10) = (\_\_\_\_ + 76) + 10$

12. $98 + \_\_\_\_ = 98$

13. $(\_\_\_\_ + 0) + 32 = 6 + 32$

14. $64 + (5 + 23) = (23 + \_\_\_\_) + 64$

15. DIG DEEPER! Use the numbers 24, 54, and 11 to write an equation that shows the Associative Property of Addition.

Writing Use a property to find the sum. Which property did you use? Why?

16. $54 + 0 = \_\_\_\_$

17. $(46 + 17) + 33 = \_\_\_\_$

18. $20 + 63 = \_\_\_\_$

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Think and Grow: Modeling Real Life

A tourist visits 13 museums, 19 memorials, and 11 monuments. Explain how to use a property to find the total number of sites the tourist visits.

$$(13 + 19) + 11 = ?$$

Explain:

The tourist visits _____ sites.

Show and Grow

19. A farmer sells 34 cucumbers, 48 ears of corn, and 26 bell peppers at a farmer's market. Explain how to use properties to find the total number of vegetables the farmer sells.

$$(34 + 48) + 26 = ?$$

20. How many people go on the field trip?

Field Trip	
People	**Number**
Adults	20
Grade 2 students	47
Grade 3 students	53

DIG DEEPER! The Grade 2 and Grade 3 students are divided into 10 equal groups. How many students are in each group? Explain.

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Name _____

Homework & Practice 8.1

Learning Target: Identify and use addition properties.

Example Identify the property.

$22 + 43 = 43 + 22$ Commutative Property of Addition

$87 + 0 = 87$ Addition Property of Zero

$(15 + 36) + 24 = 15 + (36 + 24)$ Associative Property of Addition

Identify the property.

1. $(79 + 12) + 13 = 79 + (12 + 13)$

2. $24 + 63 = 63 + 24$

3. $0 + 64 = 64$

4. $37 + (43 + 19) = (37 + 43) + 19$

5. $17 + 38 = 38 + 17$

6. $18 + 48 = 48 + 18$

Find the missing number.

7. $36 + \_\_\_\_ = 36$

8. $25 + \_\_\_\_ + 11 = 25 + 11$

9. $0 + 43 = \_\_\_\_ + 0$

10. $(22 + 19) + 28 = 19 + (\_\_\_\_ + 28)$

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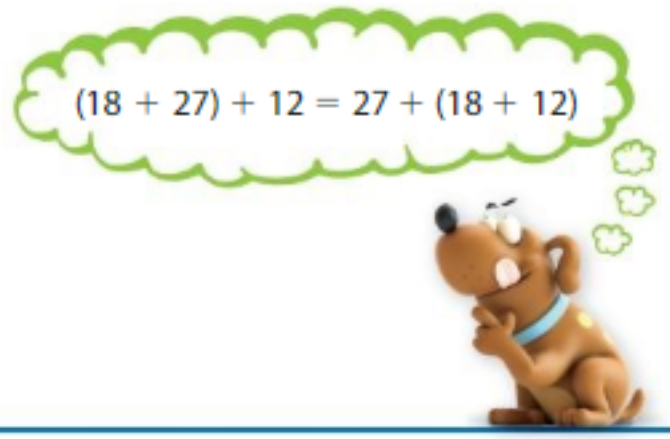
11. **Number Sense** Newton uses two properties. Identify the properties he uses.



12. **Open-Ended** Write an equation that shows the Commutative Property of Addition.

13. **Structure** Explain how the Associative Property of Addition and the Associative Property of Multiplication are alike and how they are different.

14. **Modeling Real Life** A florist uses 11 roses, 12 lilies, and 19 daisies to make bouquets. How many flowers does he use?

DIG DEEPER! The florist uses 6 flowers for each bouquet. How many bouquets does he make? Explain.

Review & Refresh

Find the product.

15.
$$\begin{array}{r} 0 \\ \times\ 3 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 7 \\ \times\ 7 \\ \hline \end{array}$$

17.
$$\begin{array}{r} 10 \\ \times\ 4 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 7 \\ \times\ 6 \\ \hline \end{array}$$

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Name _____

Use Number Lines to Add 8.2

Learning Target: Use a number line to find a sum.

Success Criteria:

- I can use the *count on* strategy to add on a number line.
- I can use the *make a ten* strategy to add on a number line.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

Color to find 33 + 25. Then model your jumps on the number line.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

33 + 25 = _____

MP **Reasoning** How can finding 33 + 25 help you find 533 + 25?

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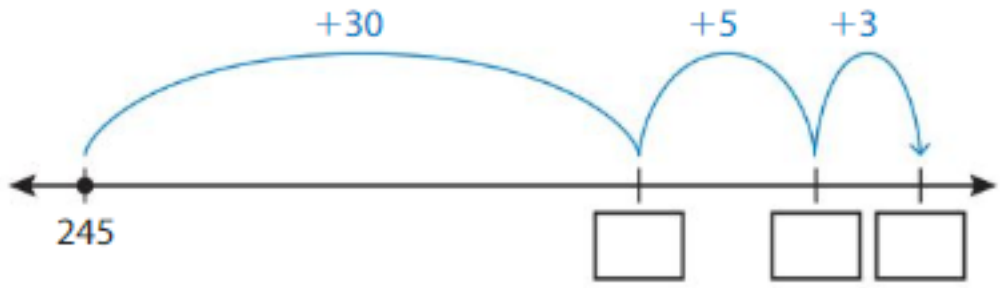
Think and Grow: Adding on a Number Line

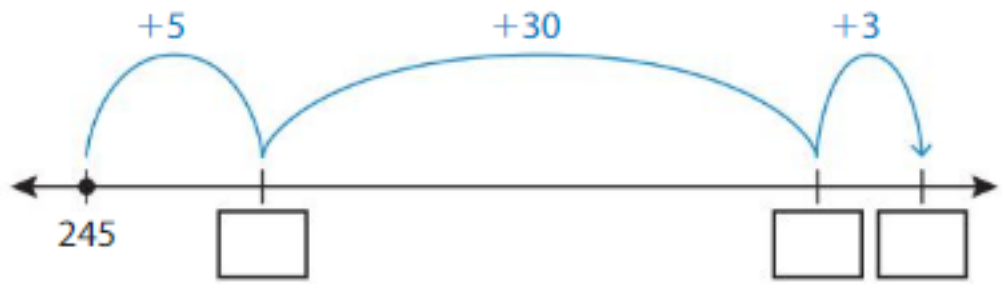
Example Find 245 + 38.

One Way: Use the *count on* strategy. Start at 245. Count on by tens, then by ones.



245 + 38 = _____

Another Way: Use the *make a ten* strategy. Start at 245. Count on to the nearest ten. Then count on by tens and by ones.



245 + 38 = _____

Show and Grow

1. Use the *count on* strategy to find 368 + 24.

368 + 24 = _____

---

2. Use the *make a ten* strategy to find 57 + 179.

57 + 179 = _____

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Name _____

Apply and Grow: Practice

3. Use the *count on* strategy to find 47 + 216.

47 + 216 = _____

4. Use the *make a ten* strategy to find 478 + 64.

478 + 64 = _____

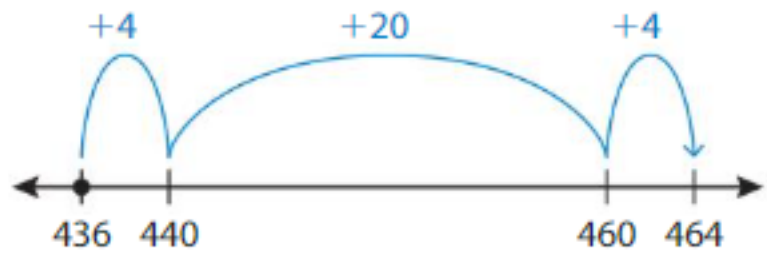
Find the sum.

5. 395 + 82 = _____

6. 653 + 109 = _____

7. Humans have 24 rib bones and 182 other types of bones. How many bones do humans have in all?

8. MP **Structure** Write the equation shown by the number line.



9. MP **Structure** Show two different ways to find 225 + 39 using a number line.

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Think and Grow: Modeling Real Life

The Leaning Tower of Pisa has 294 steps. A visitor climbs 156 steps, takes a break, and then climbs 78 more steps. Does the visitor reach the top of the tower?

Addition equation:

Model: ◄——————————►

The visitor _____ reach the top of the tower.

Show and Grow

10. A book has 216 pages. You have already read 167 pages. You read 49 more pages. Do you finish reading the book?

11. **DIG DEEPER!** A puzzle has 350 pieces. You put 95 pieces together. Your friend puts 185 pieces together. Do you and your friend complete the puzzle? If not, how many pieces are left?

12. A music library has 483 songs. You listen to 162 different songs one week and 171 more songs the next week. How many songs are left?

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English Spanish

Name _____

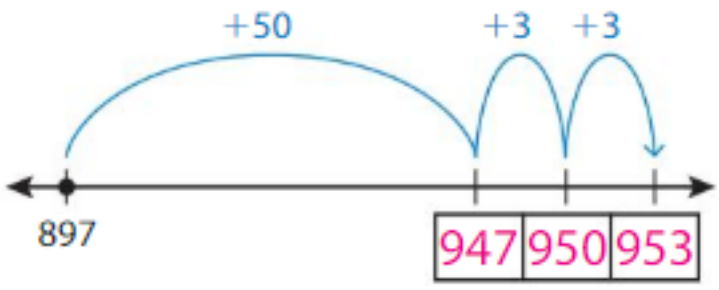
Homework & Practice 8.2

Learning Target: Use a number line to find a sum.

Example Find 897 + 56.

One Way:

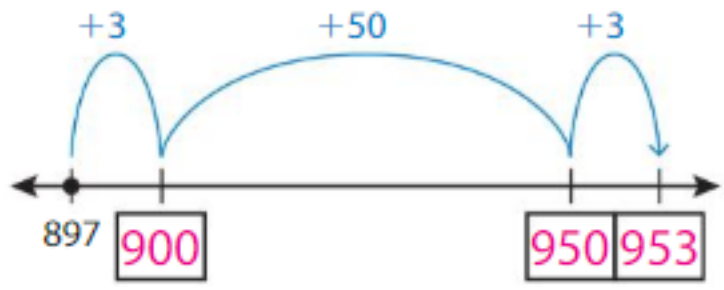
Use the *count on* strategy. Start at 897. Count on by tens, then by ones.



897 + 56 = 953

Another Way:

Use the *make a ten* strategy. Start at 897. Count on to the nearest ten. Then count on by tens and by ones.



897 + 56 = 953

1. Use the *count on* strategy to find 402 + 39.

402 + 39 = _____

2. Use the *make a ten* strategy to find 81 + 647.

81 + 647 = _____

Find the sum.

3. 532 + 54 = _____

4. 718 + 226 = _____

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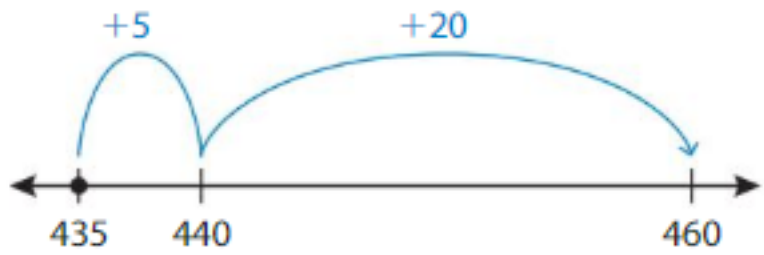
5. **YOU BE THE TEACHER** Your friend uses a number line to find 435 + 27. Is your friend correct? Explain.



$435 + 27 = 460$

---

6. **YOU BE THE TEACHER** Your friend says he can find 64 + 691 by starting at 691 on a number line because of the Associative Property of Addition. Is your friend correct? Explain.

---

7. **Modeling Real Life** Your cousin needs to write a 400-word essay. She writes 318 words during class. She finishes her essay by writing 94 words at home. Does your cousin's essay have enough words?

---

8. **DIG DEEPER!** There are 275 apartments in an apartment building. There are 203 two-bedroom apartments rented, and 56 one-bedroom apartments rented. How many apartments are *not* rented?

Review & Refresh

Find the quotient.

9. $18 \div 6 =$ _____

10. $32 \div 8 =$ _____

11. $72 \div 9 =$ _____

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Name _____

Use Mental Math to Add 8.3

Learning Target: Use mental math to find a sum.

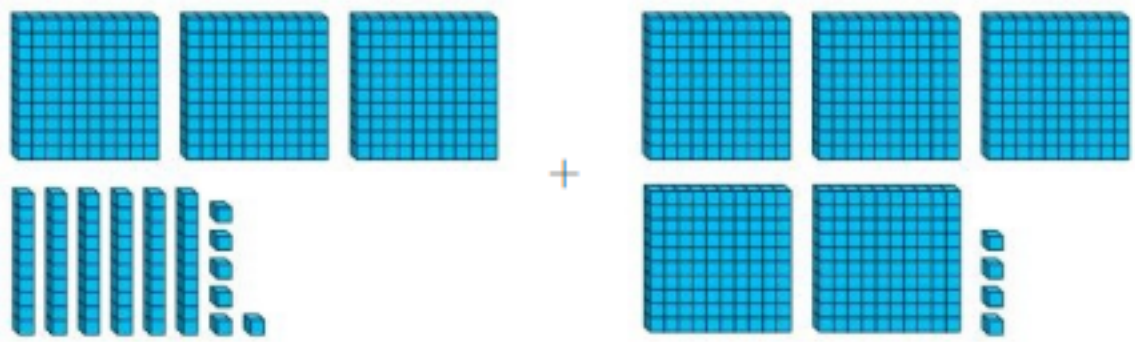
Success Criteria:

- I can use compensation to add.
- I can use the *make a ten* strategy to add.
- I can explain how to change one addend to a decade number or compatible number.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

What addition problem is shown? How can you find the sum?



_____ + _____ = _____

MP **Repeated Reasoning** Show how to find 402 + 248.

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Think and Grow: Mental Math Strategies for Addition

Example Find 247 + 328.

Use compensation to add.

$$\begin{array}{r} 247 + 3 \\ +\ 328 - 3 \end{array} \longrightarrow \begin{array}{r} 250 \\ +\ 325 \\ \hline \square \end{array}$$

So, 247 + 328 = _____.

Example Find 119 + 163.

Make a ten and count on to add.

119 + 163 = 119 + (1 + 100 + 60 + 2)

= _____ + 100 + 60 + 2

= _____ + 60 + 2

= _____ + 2

= _____

So, 119 + 163 = _____.

Show and Grow

1. Use compensation to find 322 + 158.

$$\begin{array}{r} 322 - \_\_\_\_ \\ +\ 158 + \_\_\_\_ \end{array} \longrightarrow \begin{array}{r} 320 \\ +\ 160 \\ \hline \square \end{array}$$

So, 322 + 158 = _____.

2. Make a ten and count on to find 695 + 187.

695 + 187 = 695 + (5 + 100 + 80 + 2)

= _____ + 100 + 80 + 2

= _____ + 80 + 2

= _____ + 2

= _____

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Name _____

Apply and Grow: Practice

3. Use compensation to find the sum.

604 + 275 = ?

− ☐ + ☐

☐ + ☐ = _____

So, 604 + 275 = _____.

4. Make a ten and count on to find the sum.

359 + 318 = ?

359 + _____ = 360

360 + _____ = 660

660 + _____ = _____

So, 359 + 318 = _____.

Use mental math to find the sum.

5. 436 + 248 = _____	**6.** 795 + 102 = _____	**7.** 503 + 71 = _____
8. 589 + 407 = _____	**9.** 734 + 97 = _____	**10.** 352 + 164 = _____
11. 297 + 211 = _____	**12.** 426 + 364 = _____	**13.** 159 + 104 = _____

14. A community shelter collects 101 shirts and 109 pairs of pants from a clothing drive. How many clothing items does the community shelter collect?

15. MP **Number Sense** Descartes wants to use compensation to find 238 + 127. Which numbers could he use?

240 125 130 230

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Think and Grow: Modeling Real Life

A company manager has $900. Does he have enough money to buy the laptop and the cell phone?

Addition equation:

Compare:

The manager _____ have enough money.

Show and Grow

16. A USB drive holds 600 photos. You have 279 photos on a digital camera and 337 photos on a cell phone. Can the USB drive hold all of your photos?

17. A school board president has $1,000. Which two items can she buy?

Swing Set

Seesaw

Dome Climber

DIG DEEPER! The president buys the two items. How much money does she have left?

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Name _____

Homework & Practice 8.3

Learning Target: Use mental math to find a sum.

Example Find 485 + 103.

Use compensation to make compatible numbers.

485 + 103 = ?

+ 3 − 3

488 + 100 = 588

So, 485 + 103 = 588.

Example Find 307 + 245.

Make a ten and count on to add.

307 + 245 = 307 + (3 + 200 + 40 + 2)

= 310 + 200 + 40 + 2

= 510 + 40 + 2

= 550 + 2

= 552

So, 307 + 245 = 552.

Use compensation to find the sum.

1. 248 + 137 = ?

\+ ☐ − ☐

☐ + ☐ = ____

So, 248 + 137 = ____.

2. 401 + 165 = ?

− ☐ + ☐

☐ + ☐ = ____

So, 401 + 165 = ____.

Make a ten and count on to find the sum.

3. 506 + 369 = ?

506 + 369 = 506 + (4 + 300 + 60 + 5)

= ____ + 300 + 60 + 5

= ____ + 60 + 5

= ____ + 5

= ____

So, 506 + 369 = ____.

4. 617 + 348 = ?

617 + 348 = 617 + (3 + 300 + 40 + 5)

= ____ + 300 + 40 + 5

= ____ + 40 + 5

= ____ + 5

= ____

So, 617 + 348 = ____.

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Use mental math to find the sum.

5. $478 + 219 =$ _____ | **6.** $503 + 64 =$ _____ | **7.** $288 + 242 =$ _____

8. MP **Structure** Explain how to make a ten to find the sum.

$$\begin{array}{r} 738 \\ +\ 126 \\ \hline \end{array}$$

9. **Writing** How is compensation similar to the *make a ten* strategy? How is it different?

10. **Modeling Real Life** A binder holds 250 sheets of paper. You have 107 science papers and 142 math papers. Can the binder hold all of your papers?

11. **Modeling Real Life** A school nurse has $450. Which two items can she buy?

Stethoscope

Thermometer

Digital Scale

DIG DEEPER! The school nurse buys the two items. How much money does she have left?

Review & Refresh

12. It costs $1 to get into each football game. Newton buys a chicken wrap for $2 and a drink for $1 each game. How much money does Newton spend in 4 games?

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Name _____

Use Partial Sums to Add 8.4

Learning Target: Use partial sums to find a sum.

Success Criteria:

- I can write addends in expanded form.
- I can add to find the hundreds, tens, and ones.
- I can add the partial sums.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

Model each number. Draw to show each model.

	Hundreds	Tens	Ones
341			
227			

How can you use the models to find 341 + 227?

MP **Reasoning** How can breaking apart addends help you add three-digit numbers?

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Think and Grow: Use Partial Sums to Add

Example Find 356 + 408.

Step 1: Write each number in expanded form.

$$\begin{aligned} 356 &= 300 + 50 + 6 \\ +\ 408 &= 400 + 8 \end{aligned}$$

Step 2: Find the partial sums.

$$700 + 50 + 14$$

Step 3: Add the partial sums.

$$700 + 50 + 14 = \_\_\_\_$$

So, 356 + 408 = _____.

Show and Grow

Use partial sums to add.

1. $319 = \square + \square + \square$

$+\ 234 = \square + \square + \square$

_____ + _____ + _____ = _____ So, 319 + 234 = _____.

2. $568 = \square + \square + \square$

$+\ 173 = \square + \square + \square$

_____ + _____ + _____ = _____ So, 568 + 173 = _____.

3. 424
+ 450

4. 281
+ 365

5. 127
+ 609

6. 276
+ 39

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Name _____

Apply and Grow: Practice

Use partial sums to add.

7.
$$\begin{array}{r} 759 \\ +\ 202 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 864 \\ +\ 131 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 387 \\ +\ 94 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 560 \\ +\ 273 \\ \hline \end{array}$$

11. $498 + 375 =$ _____

12. $209 + 158 =$ _____

13. The officers from a police department respond to 241 calls on Saturday. They respond to 178 calls on Sunday. How many calls do they respond to on Saturday and Sunday in all?

14. DIG DEEPER! Explain why there is a 0 in the tens place of the sum.

$$\begin{array}{rcl} 436 & = & 400 + 30 + 6 \\ +\ 367 & = & 300 + 60 + 7 \\ \hline & & 700 + 90 + 13 = 803 \end{array}$$

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Think and Grow: Modeling Real Life

A giant panda weighs 696 pounds less than a polar bear. How much does the polar bear weigh?

Polar bear

Giant panda: 263 pounds

Addition equation:

The polar bear weighs _____ pounds.

Show and Grow

15. A herd of wildebeests has 258 fewer members than a herd of zebras has. There are 335 wildebeests in the herd. How many zebras are in their herd?

16. There are three candidates in an election. Candidate A receives 184 fewer votes than Candidate B. Who wins the election?

Candidate	Number of Votes
A	347
B	?
C	489

17. DIG DEEPER! You, your friend, and your cousin play a video game. Your friend scores 161 fewer points than you. Your cousin scores 213 more points than your friend. What is each player's score? Who wins?

Player	Points
You	?
Friend	579
Cousin	?

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Name _____

Homework & Practice 8.4

Learning Target: Use partial sums to add.

Example Find 574 + 286.

Step 1: Write each number in expanded form.

$$574 = 500 + 70 + 4$$
$$+\ 286 = 200 + 80 + 6$$

Step 2: Find the partial sums.

$$700 + 150 + 10$$

Step 3: Add the partial sums.

$$700 + 150 + 10 = 860$$

So, 574 + 286 = 860.

Use partial sums to add.

1.

$$479 = \square + \square + \square$$
$$+\ 356 = \square + \square + \square$$

____ + ____ + ____ = ____ So, 479 + 356 = ____.

2. 674 + 321

3. 396 + 278

4. 564 + 218 = ____

5. 190 + 123 = ____

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English Spanish

6. **YOU BE THE TEACHER** Your friend uses partial sums to find $205 + 124$. Is your friend correct? Explain.

$$\begin{aligned} 205 &= 200 + 50 \\ +\ 124 &= \underline{100 + 20 + 4} \\ & \quad 300 + 70 + 4 = 374 \end{aligned}$$

7. **Patterns** Write and solve the next problem in the pattern.

316	416	☐
+ 178	+ 178	+ ☐
		☐

8. **Modeling Real Life** There are worker bees and drone bees in a beehive. A hive has 268 fewer drones than workers. There are 351 drone bees. How many worker bees are there?

9. **Modeling Real Life** Three athletes compete in Olympic weight lifting. Weight lifter A lifts 104 fewer pounds than Weight lifter B. Who lifts the most weight?

Weight Lifter	Weight Lifted (pounds)
A	368
B	?
C	427

Review & Refresh

Circle the value of the underlined digit.

10. 75<u>2</u>	200	2	20
11. <u>4</u>31	40	4	400
12. 80<u>9</u>	0	100	10

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English Spanish

Name _____

Add Three-Digit Numbers

8.5

Learning Target: Add three-digit numbers.

Success Criteria:

- I can round to estimate a sum.
- I can add three-digit numbers.
- I can use an estimate to check whether my answer is reasonable.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

Model the equation. Draw your model. Then find the sum.

$195 + 308 =$ _____

MP **Reasoning** How can you use an estimate to check whether your answer is reasonable?

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English Spanish

Think and Grow: Add Three-Digit Numbers

Example Find 236 + 378. Check whether your answer is reasonable.

Step 1: Estimate. Round each addend to the nearest hundred.

$$\begin{array}{rcl} 236 & \longrightarrow & 200 \\ +\ 378 & \longrightarrow & +\ 400 \\ \hline & & \square \end{array}$$

The sum is *about* _____.

Step 2: Find the sum. Add the ones, then the tens, then the hundreds.

$$\begin{array}{r} \square\square \\ 236 \\ +\ 378 \\ \hline \square \end{array}$$

Remember to regroup if there are more than 10 ones or 10 tens.

Step 3: Check. _____ is close to _____, so the answer is reasonable.

Show and Grow

Find the sum. Check whether your answer is reasonable.

1. Estimate: _____

$$\begin{array}{r} 457 \\ +\ 133 \\ \hline \end{array}$$

2. Estimate: _____

$$\begin{array}{r} 269 \\ +\ 354 \\ \hline \end{array}$$

3. Estimate: _____

$$\begin{array}{r} 560 \\ +\ 274 \\ \hline \end{array}$$

4. Estimate: _____

$$\begin{array}{r} 345 \\ +\ 286 \\ \hline \end{array}$$

5. Estimate: _____

$$\begin{array}{r} 129 \\ +\ 668 \\ \hline \end{array}$$

6. Estimate: _____

$$\begin{array}{r} 383 \\ +\ 539 \\ \hline \end{array}$$

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English Spanish

Name _____

Apply and Grow: Practice

Find the sum. Check whether your answer is reasonable.

7. Estimate: _____

803
+ 179

8. Estimate: _____

608
+ 239

9. Estimate: _____

427
+ 385

10. Estimate: _____

401
+ 109

11. Estimate: _____

265
+ 157

12. Estimate: _____

375
+ 64

13. Estimate: _____

469 + 284 = _____

14. Estimate: _____

580 + 246 = _____

15. Estimate: _____

796 + 135 = _____

16. A truck driver travels 428 miles on Monday. He travels 473 miles on Tuesday. How many miles does he travel in all on Monday and Tuesday?

17. MP **Reasoning** Your friend finds a sum. Is her answer reasonable? If not, describe her mistake.

119
+ 187
396

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English Spanish

Think and Grow: Modeling Real Life

A construction team builds an 825-meter-long boardwalk on a beach. The team builds 408 meters one week and 377 meters the next week. Is the boardwalk complete?

Addition equation:

The boardwalk _____ complete.

Show and Grow

18. A road crew repaves the road on a 547-meter-long bridge. The crew repaves 318 meters the first day and 229 meters the second day. Is the road on the bridge completely repaved?

19. A family drives from St. Louis to Orlando for a vacation. The family drives 363 miles the first day and 386 miles the second day. How many miles does the family have left to drive?

20. Which booth had more visitors in all?

School Fair Booth Visitors		
	Dunking Booth	**Photo Booth**
Day 1	468	527
Day 2	416	374

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English Spanish

Name _____

Homework & Practice 8.5

Learning Target: Add three-digit numbers.

Example Find 706 + 185. Check whether your answer is reasonable.

Step 1: Estimate. Round each addend to the nearest ten.

$$\begin{array}{rcl} 706 & \longrightarrow & 710 \\ +\ 185 & \longrightarrow & +\ 190 \\ \hline & & 900 \end{array}$$

The sum is *about* 900.

Step 2: Find the sum.

$$\begin{array}{r} \boxed{1} \\ 706 \\ +\ 185 \\ \hline \boxed{891} \end{array}$$

Step 3: Check. 891 is close to 900, so the answer is reasonable.

Find the sum. Check whether your answer is reasonable.

1. Estimate: _____

493
+ 142

2. Estimate: _____

763
+ 58

3. Estimate: _____

308
+ 273

4. Estimate: _____

276
+ 138

5. Estimate: _____

532
+ 167

6. Estimate: _____

680
+ 296

7. Estimate: _____

595 + 280 = _____

8. Estimate: _____

419 + 295 = _____

9. Estimate: _____

498 + 305 = _____

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English Spanish

10. Open-Ended Complete the addends so you need to regroup to add. Then find the sums.

$$\begin{array}{r} 4\ 7\ 9 \\ +\ 2\ 8\ \square \\ \hline \end{array} \qquad \begin{array}{r} 6\ \square\ 7 \\ +\ 1\ 3\ 5 \\ \hline \end{array}$$

11. DIG DEEPER! Find the missing digits.

$$\begin{array}{r} 1\ 0\ 7 \\ +\ 3\ 5\ \square \\ \hline 4\ 6\ 6 \end{array} \qquad \begin{array}{r} 7\ \square\ 8 \\ +\ 2\ 3\ 4 \\ \hline 9\ 8\ 2 \end{array} \qquad \begin{array}{r} 6\ 7\ 0 \\ +\ \square\ 9\ 2 \\ \hline 9\ 6\ 2 \end{array} \qquad \begin{array}{r} 8\ \square\ 9 \\ +\ 1\ 7\ 3 \\ \hline 9\ 8\ \square \end{array}$$

12. Modeling Real Life Newton wants to complete a 770-mile hike in 2 months. He hikes 423 miles the first month and 347 miles the second month. Does he complete the hike?

13. Modeling Real Life You ship a package 750 miles from San Diego to Salt Lake City. The package is now in Las Vegas. How many miles are left until your package is delivered?

Review & Refresh

Find the quotient.

14. $10\overline{)100}$ **15.** $5\overline{)45}$ **16.** $2\overline{)14}$ **17.** $10\overline{)80}$

18. Divide 25 by 5. **19.** Divide 30 by 10. **20.** Divide 8 by 2.

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English Spanish

Name _____

Add Three or More Numbers

8.6

Learning Target: Add up to four numbers.

Success Criteria:

- I can round to estimate a sum.
- I can identify compatible numbers.
- I can find a sum and check whether it is reasonable.

FLORIDA STANDARDS

MAFS.3.NBT.1.2

Explore and Grow

Find the sum of the numbers. Which two numbers should you add first?

348 478 152

____ + ____ + ____ = ____

517 647 283

____ + ____ + ____ = ____

MP **Reasoning** Why did you choose those numbers? Compare your strategy to your partner's strategy.

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English Spanish

Think and Grow: Add Three or More Numbers

Example Find 138 + 221 + 176 + 92. Check whether your answer is reasonable.

Step 1: Estimate. Round each addend to the nearest ten.

140 + 220 + 180 + 90 = _____

The sum is *about* _____.

Look for compatible digits to help you add.

Step 2: Find the sum.
Add the ones,
then the tens,
then the hundreds.

	1	3	8
	2	2	1
	1	7	6
+		9	2

Think:
8 + 2 = 10

Step 3: Check. _____ is close to _____, so the answer is reasonable.

Show and Grow

Find the sum. Check whether your answer is reasonable.

1. Estimate: _____

342
73
+ 267

2. Estimate: _____

191
452
+ 206

3. Estimate: _____

65
98
+ 637

4. Estimate: _____

241
394
85
+ 193

5. Estimate: _____

136
51
64
+ 410

6. Estimate: _____

105
113
222
+ 307

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English Spanish

Name _____

Apply and Grow: Practice

Find the sum. Check whether your answer is reasonable.

7. Estimate: _____

557
79
+ 283

8. Estimate: _____

160
382
+ 357

9. Estimate: _____

35
68
+ 827

10. Estimate: _____

153
235
458
+ 67

11. Estimate: _____

549
86
31
+ 197

12. Estimate: _____

181
629
140
+ 23

13. Estimate: _____

213
208
462
+ 111

14. Estimate: _____

108
172
200
+ 263

15. Estimate: _____

259
233
223
+ 147

16. MP **Number Sense** Use the Associative Property of Addition to find (345 + 234) + 206.

17. **YOU BE THE TEACHER** Your friend finds 364 + 109 + 27. Is your friend correct? Explain.

```
  11
 364
 109
+ 27
 743
```

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English Spanish

Think and Grow: Modeling Real Life

An elevator has a weight limit of 1,000 pounds. A 186-pound man has three 265-pound boxes to deliver. Can he bring all 3 boxes on the elevator at once?

Understand the problem:

Make a plan:

Solve:

He _____ bring all 3 boxes on the elevator at once.

Show and Grow

18. An auditorium has 650 seats. 175 students from each of 3 schools compete in a math competition. 68 teachers assist. Are there enough seats for all of the students and teachers?

19. **DIG DEEPER!** Four students at a school organize a petition for more lunch food options. They need 500 signatures. How many more signatures do they need?

Student	Number of Signatures
A	77
B	108
C	112
D	96

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English Spanish

Name _____

Homework & Practice 8.6

Learning Target: Add up to four numbers.

Example Find 374 + 337 + 63 + 215. Check whether your answer is reasonable.

Step 1: Estimate. Round each addend to the nearest hundred.

400 + 300 + 100 + 200 = 1,000 The sum is *about* 1,000.

Step 2: Find the sum.

	1	1	
	3	7	4
	3	3	7
		6	3
+	2	1	5
	9	8	9

Think: 7 + 3 = 10

Step 3: Check. 989 is close to 1,000, so the answer is reasonable.

Find the sum. Check whether your answer is reasonable.

1. Estimate: _____

15
398
+ 526

2. Estimate: _____

65
41
+ 786

3. Estimate: _____

409
87
+ 463

4. Estimate: _____

302
253
169
+ 18

5. Estimate: _____

353
121
154
+ 116

6. Estimate: _____

213
270
251
+ 139

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English Spanish

7. MP **Structure** Which problem can you solve *without* regrouping?

611	302	123	401
34	124	151	327
+ 27	+ 63	+ 72	+ 162

8. MP **Reasoning** You add 602 + 125 + 231. Your friend adds 231 + 602 + 125. Do you both get the same answer? Use an addition property to explain.

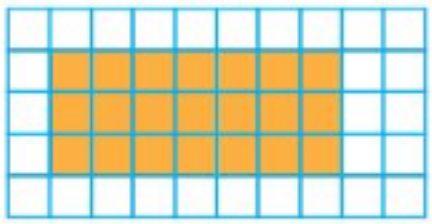
9. **Modeling Real Life** A firefighter's ladder has a weight limit of 750 pounds. One firefighter weighs 196 pounds. Another firefighter weighs 243 pounds. They each have 67 pounds of gear. If both firefighters wear their gear, can they climb the ladder at the same time?

10. DIG DEEPER! Your principal agrees to make a lip-sync video if the school's social media page reaches 1,000 likes in 5 days. How many more likes does the school's page need?

Day	Number of Likes
1	573
2	168
3	201
4	47

Review & Refresh

11. Find the area of the shape.



□ = 1 square centimeter

Area = _____

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English Spanish

Name _____

8.7 Use Number Lines to Subtract

Learning Target: Use a number line to find a difference.

Success Criteria:

- I can use the *count back* strategy to subtract on a number line.
- I can use the *count on* strategy to subtract on a number line.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

Color to find 79 − 47. Then model your jumps on the number line.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

79 − 47 = _____

MP **Reasoning** How can finding 79 − 47 help you find 379 − 47?

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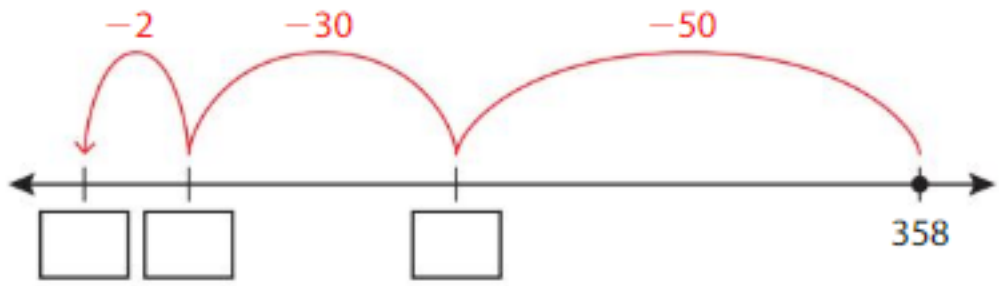
English Spanish

Think and Grow: Subtracting on a Number Line

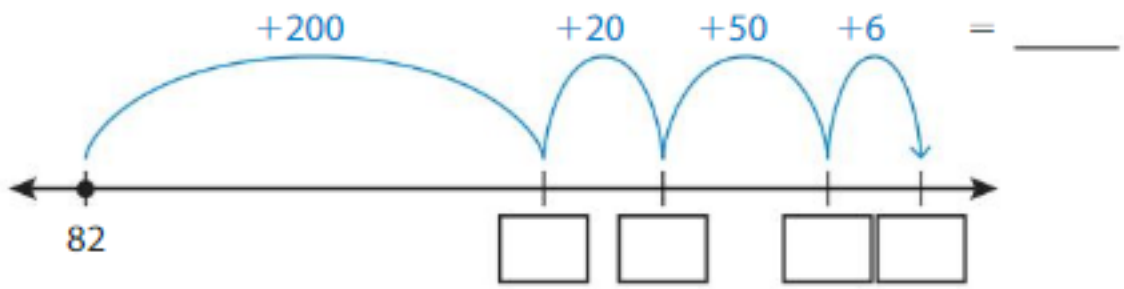
Example Find 358 − 82.

One Way: Use the *count back* strategy. Start at 358.
Count back by tens, then by ones.



358 − 82 = _____

Another Way: Use the *count on* strategy. Start at 82.
Count on until you reach 358.



358 − 82 = _____

Show and Grow

1. Use the *count back* strategy to find 273 − 36.

273 − 36 = _____

---

2. Use the *count on* strategy to find 124 − 45.

124 − 45 = _____

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English Spanish

Name _____

Apply and Grow: Practice

3. Use the *count back* strategy to find 961 − 38.

961 − 38 = _____

4. Use the *count on* strategy to find 853 − 77.

853 − 77 = _____

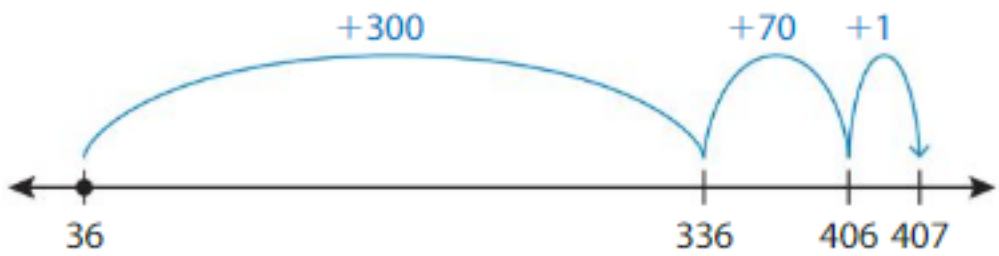
Find the difference.

5. 316 − 24 = _____

6. 548 − 113 = _____

7. Your friend knows 154 words in Italian. You want to know just as many words as your friend. So far, you have learned 73 words. How many words do you have left to learn?

8. MP **Structure** Write the equation shown by the number line.



_____ − _____ = _____

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English Spanish

Think and Grow: Modeling Real Life

Each member of a marching band and a football team is awarded a ribbon. The marching band has 123 members. The football team has 66 members. How many more ribbons are needed for the marching band than for the football team?

Subtraction equation:

Model: ←——————————————→

_____ more ribbons are needed for the marching band.

Show and Grow

9. A marine biologist feeds 435 pounds of fish to an orca and 50 pounds of fish to a sea lion. How many more pounds did the orca eat than the sea lion?

10. There are 620 paper lanterns for a festival. Some are let go. There are 42 left. How many paper lanterns were let go?

11. DIG DEEPER! There are some guests at an amusement park. 387 of them leave when it rains. 474 of them stay. How many guests were there before it rained?

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English Spanish

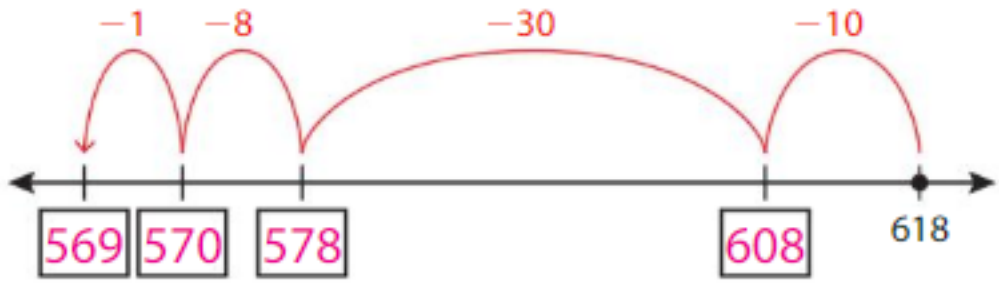
Name _____

Homework & Practice 8.7

Learning Target: Use a number line to find a difference.

Example Find 618 − 49.

One Way: Use the *count back* strategy.



618 − 49 = 569

Another Way: Use the *count on* strategy.

= 569

618 − 49 = 569

1. Use the *count back* strategy to find 232 − 53.

232 − 53 = _____

2. Use the *count on* strategy to find 796 − 81.

796 − 81 = _____

Find the difference.

3. 474 − 19 = _____

4. 615 − 204 = _____

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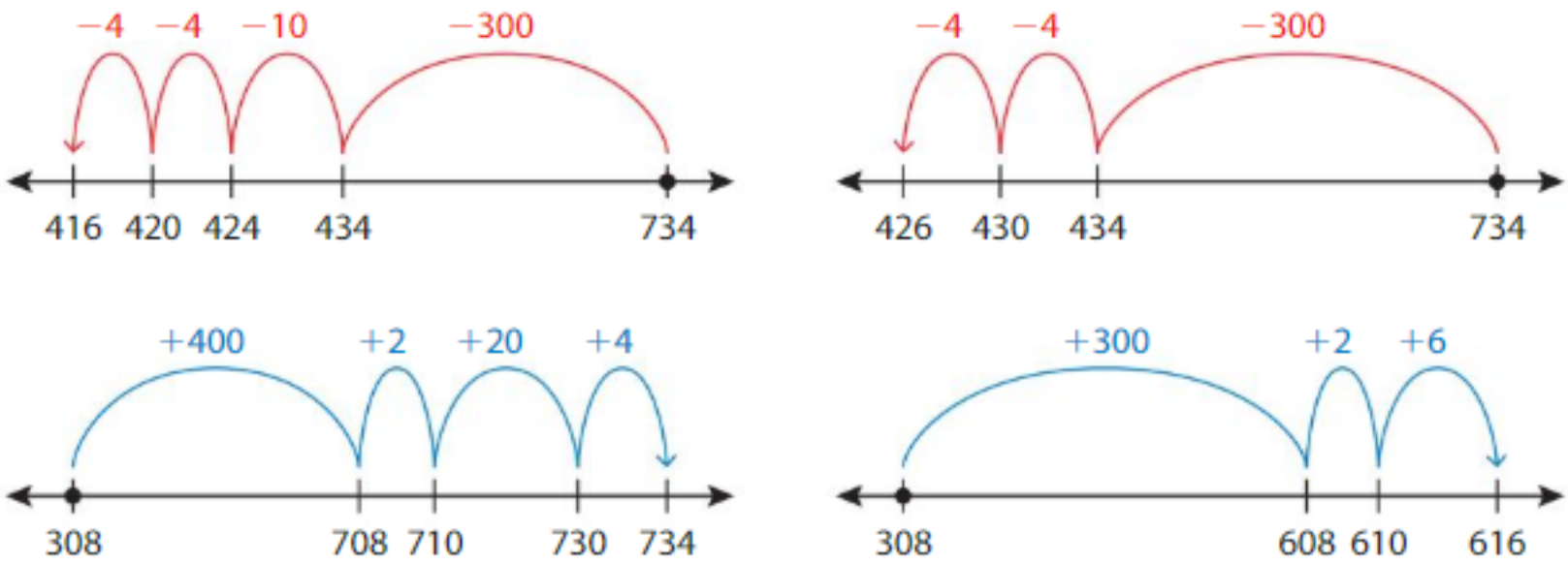
English Spanish

5. **Writing** Write and solve a subtraction word problem using 995 and 238.

6. **DIG DEEPER!** Which number lines can you use to find 734 − 308?



7. **Modeling Real Life** You take 107 pictures on a field trip to a zoo. Your friend takes 73 pictures. How many more pictures do you take than your friend?

8. **Modeling Real Life** An author has 350 copies of her book. Some are signed. 115 copies are *not* signed. How many copies are signed?

Review & Refresh

Find the quotient.

9. Divide 25 by 5.

10. Divide 40 by 4.

11. Divide 72 by 8.

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English Spanish

Name _____

Use Mental Math to Subtract

8.8

Learning Target: Use mental math to find a difference.

Success Criteria:

- I can explain how to change both numbers to use compensation to subtract.
- I can explain how to change one number to use compensation to subtract.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

Use mental math to solve.

750 − 300 = _____	750 − 300 = _____	750 − 300 = _____
650 − 200 = _____	700 − 250 = _____	740 − 290 = _____

What patterns do you notice? Explain.

MP **Repeated Reasoning** Explain how to find 745 − 295.

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English Spanish

Think and Grow: Mental Math Strategies for Subtraction

Example Find 433 − 198.

One Way: Use compensation to change both numbers.

You can change both numbers by the same amount.

$$\begin{array}{r} 433 + 2 \\ -\ 198 + 2 \\ \hline \end{array} \longrightarrow \begin{array}{r} 435 \\ -\ 200 \\ \hline \square \end{array}$$

So, 433 − 198 = _____.

198 is close to 200, and it is easier to subtract 200.

Another Way: Use compensation to change one number.

$$\begin{array}{r} 433 \\ -\ 198 + 2 \\ \hline \end{array} \longrightarrow \begin{array}{r} 433 \\ -\ 200 \\ \hline 233 \end{array}$$

You subtracted 2 more than 198, so you must add 2 to the answer.

$$\begin{array}{r} 233 \\ +\ \ 2 \\ \hline \square \end{array}$$

So, 433 − 198 = _____.

Show and Grow

Use compensation to find the difference.

1. $\begin{array}{r} 384 + \_\_\_ \\ -\ 146 + \_\_\_ \\ \hline \end{array} \longrightarrow \begin{array}{r} 388 \\ -\ 150 \\ \hline \square \end{array}$

So, 384 − 146 = _____.

2. $\begin{array}{r} 792 + \_\_\_ \\ -\ 455 + \_\_\_ \\ \hline \end{array} \longrightarrow \begin{array}{r} 797 \\ -\ 460 \\ \hline \square \end{array}$

So, 792 − 455 = _____.

3. $\begin{array}{r} 626 \\ -\ 219 + \_\_\_ \\ \hline \end{array} \longrightarrow \begin{array}{r} 626 \\ -\ 220 \\ \hline 406 \end{array}$ $\begin{array}{r} 406 \\ +\ \square \\ \hline \square \end{array}$

So, 626 − 219 = _____.

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English Spanish

Name _____

Apply and Grow: Practice

Use compensation to find the difference.

4. $900 - 699$

$900 + \_\_\_ \rightarrow 901$

$-\ 699 + \_\_\_ \quad -\ 700$

$\square$

So, $900 - 699 =$ _____.

5. $923 - 117$

$923 \rightarrow 923 \quad 8\ 0\ 3$

$-\ 117 + \_\_\_ \quad -\ 120 + \square$

$803 \quad \square$

So, $923 - 117 =$ _____.

Use mental math to find the difference.

6. $643 - 115 =$ _____

7. $863 - 257 =$ _____

8. $768 - 543 =$ _____

9. $688 - 414 =$ _____

10. $499 - 106 =$ _____

11. $495 - 162 =$ _____

12. $874 - 515 =$ _____

13. $637 - 228 =$ _____

14. $986 - 432 =$ _____

15. A movie theater has 225 seats. 108 seats are taken. How many seats are *not* taken?

16. MP **Reasoning** Your friend starts to find $741 - 295$. What is the next step? Explain.

$741 \rightarrow 741$

$-\ 295 + 5 \quad -\ 300$

441

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English Spanish

Think and Grow: Modeling Real Life

A softball coach has $325 for new equipment. She buys the catching gear. Does she have enough money left to buy the bat?

Subtraction equation:

Compare:

The coach _____ have enough money to buy the bat.

Show and Grow

17. A store owner has 550 T-shirts. He sells 333 of them. Then he receives an order for 168 T-shirts. Does he have enough T-shirts to complete the order?

18. The manager of a gaming center has $700 for new electronics. She buys the game system. Does she have enough money left for either of the other two items? If so, which one?

Television

Game System

Bundle of Games

DIG DEEPER! How much more money does the manager need to buy both the television and the bundle of games?

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English Spanish

Name _____

Homework & Practice 8.8

Learning Target: Use mental math strategies to find a difference.

Example

Find 778 − 349.

Use compensation to change both numbers.

$$\begin{array}{r} 778 + 1 \\ -\ 349 + 1 \end{array} \rightarrow \begin{array}{r} 779 \\ -\ 350 \\ \hline 429 \end{array}$$

So, 778 − 349 = 429.

Example

Find 665 − 206.

Use compensation to change one number.

$$\begin{array}{r} 665 \\ -\ 206 + 4 \end{array} \rightarrow \begin{array}{r} 665 \\ -\ 210 \\ \hline 455 \end{array} \quad \begin{array}{r} 4\ 5\ 5 \\ +\ \boxed{4} \\ \hline \boxed{4\ 5\ 9} \end{array}$$

So, 665 − 206 = 459.

Use compensation to find the difference.

1. $\begin{array}{r} 596 + \_\_\_\_ \\ -\ 317 + \_\_\_\_ \end{array} \rightarrow \begin{array}{r} 599 \\ -\ 320 \\ \hline \square \end{array}$

So, 596 − 317 = _____.

2. $\begin{array}{r} 685 \\ -\ 214 + \_\_\_\_ \end{array} \rightarrow \begin{array}{r} 685 \\ -\ 220 \\ \hline 465 \end{array} \quad \begin{array}{r} 4\ 6\ 5 \\ +\ \square \\ \hline \square \end{array}$

So, 685 − 214 = _____.

Use mental math to find the difference.

3. 782 − 489 = _____

4. 672 − 266 = _____

5. 983 − 155 = _____

6. 744 − 125 = _____

7. 967 − 619 = _____

8. 854 − 517 = _____

9. 472 − 215 = _____

10. 883 − 335 = _____

11. 575 − 198 = _____

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English Spanish

12. MP **Reasoning** To find 765 − 246, Newton adds 5 to each number, and then subtracts. To find the difference, Descartes adds 4 to each number, and then subtracts. Will they both get the correct answer? Explain.

13. **Modeling Real Life** A custodian has 350 desks to clean. She cleans 124 desks on the first floor and 147 desks on the second floor. Does she clean all of the desks?

14. **Modeling Real Life** A fashion designer has $725 to spend on new supplies. She buys the sewing machine. Does she have enough money left for either of the other two items? If so, which one?

Mannequin

Fashion Design Software

Sewing Machine

DIG DEEPER! How much more money does the fashion designer need to buy both the mannequin and the fashion design software?

Review & Refresh

Draw equal groups. Then complete the equations.

15. 3 groups of 6

___ + ___ + ___ = ___

___ × ___ = ___

16. 4 groups of 9

___ + ___ + ___ + ___ = ___

___ × ___ = ___

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English Spanish

Name _____

Subtract Three-Digit Numbers 8.9

Learning Target: Subtract three-digit numbers.

Success Criteria:

- I can round to estimate a difference.
- I can subtract three-digit numbers.
- I can use an estimate to check whether my answer is reasonable.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

Model the equation. Draw to show your model. Then find the difference.

$694 - 418 = \_\_\_\_$

MP **Reasoning** How can you use an estimate to check whether your answer is reasonable?

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English Spanish

Think and Grow: Subtract Three-Digit Numbers

Example Find 604 − 215. Check whether your answer is reasonable.

Step 1: Estimate. Round each number to the nearest hundred.

$$\begin{array}{rcl} 604 & \longrightarrow & 600 \\ -\ 215 & \longrightarrow & -\ 200 \\ \hline & & \square \end{array}$$

The difference is *about* _____.

Step 2: Find the difference.

Subtract the ones, then the tens, then the hundreds.

There are not enough ones or tens to subtract, so regroup.

Regroup the hundreds.		Regroup the tens.		Subtract.
$\begin{array}{r} 5\ 10 \\ \cancel{6}\ \cancel{0}\ 4 \\ -\ 2\ 1\ 5 \\ \hline \end{array}$	→	$\begin{array}{r} 9 \\ 5\ \cancel{10}\ 14 \\ \cancel{6}\ \cancel{0}\ \cancel{4} \\ -\ 2\ 1\ 5 \\ \hline \end{array}$	→	$\begin{array}{r} 9 \\ 5\ \cancel{10}\ 14 \\ \cancel{6}\ \cancel{0}\ \cancel{4} \\ -\ 2\ 1\ 5 \\ \hline \end{array}$

Step 3: Check. _____ is close to _____, so the answer is reasonable.

Show and Grow

Find the difference. Check whether your answer is reasonable.

1. Estimate: _____

$$\begin{array}{r} 302 \\ -\ 166 \\ \hline \end{array}$$

2. Estimate: _____

$$\begin{array}{r} 538 \\ -\ 371 \\ \hline \end{array}$$

3. Estimate: _____

$$\begin{array}{r} 490 \\ -\ 252 \\ \hline \end{array}$$

4. Estimate: _____

$$\begin{array}{r} 963 \\ -\ 429 \\ \hline \end{array}$$

5. Estimate: _____

$$\begin{array}{r} 641 \\ -\ 287 \\ \hline \end{array}$$

6. Estimate: _____

$$\begin{array}{r} 832 \\ -\ 359 \\ \hline \end{array}$$

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English Spanish

Name _____

Apply and Grow: Practice

Find the difference. Check whether your answer is reasonable.

7. Estimate: _____

$$\begin{array}{r} 518 \\ -\ 232 \\ \hline \end{array}$$

8. Estimate: _____

$$\begin{array}{r} 971 \\ -\ 320 \\ \hline \end{array}$$

9. Estimate: _____

$$\begin{array}{r} 565 \\ -\ 289 \\ \hline \end{array}$$

10. Estimate: _____

$$\begin{array}{r} 546 \\ -\ 341 \\ \hline \end{array}$$

11. Estimate: _____

$$\begin{array}{r} 707 \\ -\ 453 \\ \hline \end{array}$$

12. Estimate: _____

$$\begin{array}{r} 406 \\ -\ 77 \\ \hline \end{array}$$

13. Estimate: _____

552 − 381 = _____

14. Estimate: _____

725 − 146 = _____

15. Estimate: _____

800 − 486 = _____

16. The number of rings on a tree is equal to its age. A redwood tree has 473 rings. A bristlecone pine tree has 806 rings. How much older is the bristlecone pine tree than the redwood tree?

17. **Writing** Explain how to regroup 408 to subtract 259.

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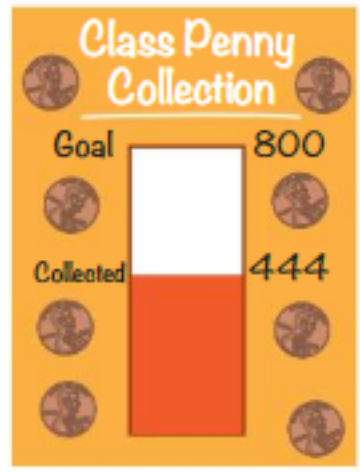
English Spanish

Think and Grow: Modeling Real Life

How many more pennies does the class need to reach the goal?



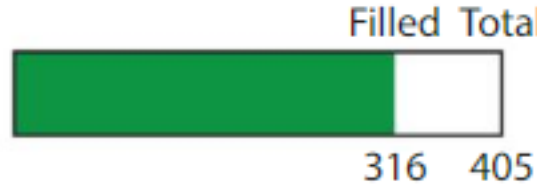
Subtraction equation:

The class needs to collect _____ more pennies.

Show and Grow

18. How many more campers can attend the summer camp?

Summer Camp Openings



19. A musician wants to buy a set of speakers that costs $672. She saves $224 each month for 2 months. How much money does she still need to save?

20. **DIG DEEPER!** Newton has 442 packages to deliver. Descartes has 464. Newton delivers 174 packages, and Descartes delivers 188. Who is closer to finishing his deliveries?

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English Spanish

Name _____

Homework & Practice 8.9

Learning Target: Subtract three-digit numbers.

Example Find 324 − 176. Check whether your answer is reasonable.

Step 1: Estimate. Round to the nearest ten.

$$\begin{array}{r} 324 \\ -\ 176 \end{array} \longrightarrow \begin{array}{r} 2\ 12 \\ \cancel{3}\ \cancel{2}\ 0 \\ -\ 1\ 8\ 0 \\ \hline \boxed{1\ 4\ 0} \end{array}$$

The difference is *about* 140.

Step 2: Subtract. There are not enough ones or tens to subtract, so regroup.

Regroup the tens.

$$\begin{array}{r} 1\ 14 \\ 3\ \cancel{2}\ \cancel{4} \\ -\ 1\ 7\ 6 \\ \hline \end{array}$$

Regroup the hundreds.

$$\begin{array}{r} 11 \\ 2\ \cancel{1}\ 14 \\ \cancel{3}\ \cancel{2}\ \cancel{4} \\ -\ 1\ 7\ 6 \\ \hline \end{array}$$

Subtract.

$$\begin{array}{r} 11 \\ 2\ \cancel{1}\ 14 \\ \cancel{3}\ \cancel{2}\ \cancel{4} \\ -\ 1\ 7\ 6 \\ \hline \boxed{1\ 4\ 8} \end{array}$$

Step 3: Check. 148 is close to 140, so the answer is reasonable.

Find the difference. Check whether your answer is reasonable.

1. Estimate: _____

$$\begin{array}{r} 571 \\ -\ 220 \\ \hline \end{array}$$

2. Estimate: _____

$$\begin{array}{r} 421 \\ -\ 277 \\ \hline \end{array}$$

3. Estimate: _____

$$\begin{array}{r} 534 \\ -\ 186 \\ \hline \end{array}$$

4. Estimate: _____

690 − 298 = _____

5. Estimate: _____

613 − 472 = _____

6. Estimate: _____

835 − 189 = _____

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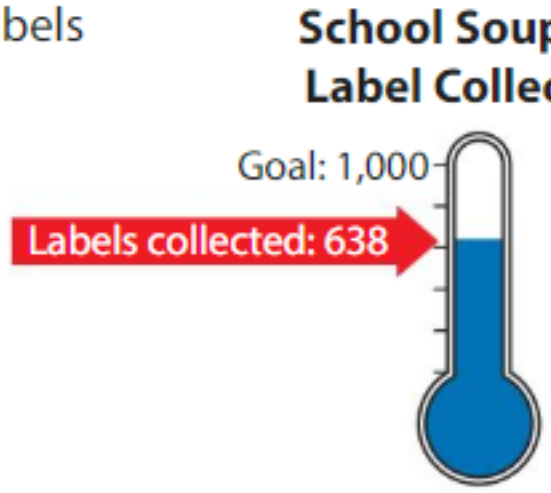
English Spanish

7. **YOU BE THE TEACHER** Your friend says you have to regroup every time you subtract from a number that has a zero. Is your friend correct? Explain.

8. **Modeling Real Life** How many more soup can labels does the school need to reach the goal?



9. **Modeling Real Life** Newton wants to buy a couch that costs $594. He saves $198 each month for 2 months. How much money does he still need to save?

10. **DIG DEEPER!** Find the missing digits.

$$\begin{array}{r} 9\,6\,4 \\ -\,3\,\square\,1 \\ \hline 6\,2\,3 \end{array} \qquad \begin{array}{r} 4\,7\,\square \\ -\,1\,9\,4 \\ \hline 2\,8\,1 \end{array} \qquad \begin{array}{r} \square\,4\,4 \\ -\,5\,6\,\square \\ \hline 2\,8\,1 \end{array} \qquad \begin{array}{r} \square\,0\,4 \\ -\,4\,5\,2 \\ \hline 3\,5\,2 \end{array}$$

Review & Refresh

Round the number to the nearest ten and to the nearest hundred.

11. 64

Nearest ten: _____

Nearest hundred: _____

12. 411

Nearest ten: _____

Nearest hundred: _____

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English Spanish

Name _____

Relate Addition and Subtraction

8.10

Learning Target: Use inverse operations to check answers.

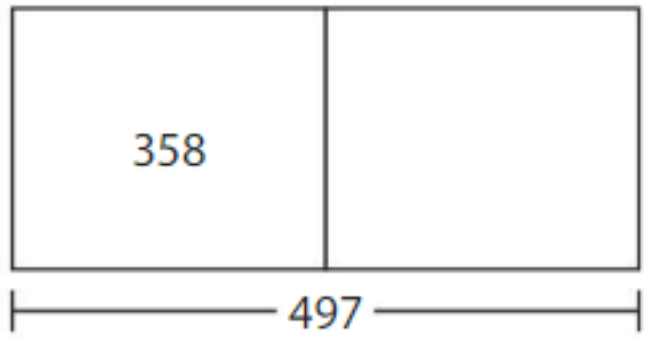
Success Criteria:

- I can use addition to check a difference.
- I can use subtraction to check a sum.
- I can explain the relationship between addition and subtraction.

FLORIDA STANDARDS
MAFS.3.NBT.1.2

Explore and Grow

How can you find the missing number? How do you know you are correct?



MP **Reasoning** How are addition and subtraction related?

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Think and Grow: Relate Addition and Subtraction

Inverse operations are operations that "undo" each other.
Addition and subtraction are inverse operations.

Example Find 846 − 283. Use the inverse operation to check.

$$\begin{array}{r} 846 \\ -\ 283 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ +\ 283 \\ \hline \square \end{array}$$

Add 283 to the difference.
The sum should be 846.

Example Find 355 + 437. Use the inverse operation to check.

$$\begin{array}{r} 355 \\ +\ 437 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ -\ 437 \\ \hline \square \end{array}$$

Subtract 437 from the sum.
The difference should be 355.

Show and Grow

Find the sum or difference. Use the inverse operation to check.

1.

$$\begin{array}{r} 682 \\ -\ 419 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ +\ 419 \\ \hline \square \end{array}$$

2.

$$\begin{array}{r} 169 \\ +\ 745 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ -\ 745 \\ \hline \square \end{array}$$

3.

$$\begin{array}{r} 376 \\ +\ 238 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ -\ 238 \\ \hline \square \end{array}$$

4.

$$\begin{array}{r} 547 \\ -\ 285 \\ \hline \square \end{array} \qquad \begin{array}{r} \square \\ +\ 285 \\ \hline \square \end{array}$$

5.

$$\begin{array}{r} 463 \\ +\ 349 \\ \hline \end{array}$$

6.

$$\begin{array}{r} 790 \\ -\ 317 \\ \hline \end{array}$$

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English Spanish

Name _____

Apply and Grow: Practice

Find the sum or difference. Use the inverse operation to check.

7.
$$\begin{array}{r} 857 \\ -\ 567 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 762 \\ +\ 143 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 653 \\ +\ 217 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 294 \\ -\ 156 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 475 \\ +\ 438 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 514 \\ -\ 386 \\ \hline \end{array}$$

13. Which One Doesn't Belong? Which equation does *not* belong with the other three?

$482 + 126 = 608$ $\qquad$ $126 + 482 = 608$

$608 - 482 = 126$ $\qquad$ $608 + 126 = 734$

14. Open-Ended Write a subtraction equation that has a difference of 381.

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Think and Grow: Modeling Real Life

A kayak costs $321. A customer pays $196 for the kayak after using a gift card. How much money is the gift card worth?

Equation:

The gift card is worth $_____.

Check:

Show and Grow

15. You print 600 flyers for an event. You hand out some of them. There are 237 left. How many flyers did you hand out?

16. A building has 163 floors. You start on the 28th floor. You go up in the elevator 126 floors. Then you go down 145 floors. On which floor do you end?

17. DIG DEEPER! A bus travels from Boston to Washington, D.C. On the way back, the bus stops in New York City. How many miles has the bus traveled in all? How many miles does the bus have left to travel?

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English Spanish

Name _____

Homework & Practice 8.10

Learning Target: Use inverse operations to check answers.

Example Find the sum or difference. Use the inverse operation to check.

$$\begin{array}{r} 797 \\ +\ 180 \\ \hline 977 \end{array} \quad \begin{array}{r} 977 \\ -\ 180 \\ \hline 797 \end{array} \qquad \begin{array}{r} 370 \\ -\ 130 \\ \hline 240 \end{array} \quad \begin{array}{r} 240 \\ +\ 130 \\ \hline 370 \end{array}$$

Find the sum or difference. Use the inverse operation to check.

1.

$$\begin{array}{r} 931 \\ -\ 544 \\ \hline \square \end{array} \quad \begin{array}{r} \square \\ +\ 544 \\ \hline \square \end{array}$$

2.

$$\begin{array}{r} 623 \\ +\ 285 \\ \hline \square \end{array} \quad \begin{array}{r} \square \\ -\ 285 \\ \hline \square \end{array}$$

3.

$$\begin{array}{r} 523 \\ +\ 237 \\ \hline \end{array}$$

4.

$$\begin{array}{r} 403 \\ -\ 252 \\ \hline \end{array}$$

5.

$$\begin{array}{r} 612 \\ +\ 387 \\ \hline \end{array}$$

6.

$$\begin{array}{r} 511 \\ -\ 371 \\ \hline \end{array}$$

7.

$$\begin{array}{r} 437 \\ +\ 156 \\ \hline \end{array}$$

8.

$$\begin{array}{r} 726 \\ -\ 362 \\ \hline \end{array}$$

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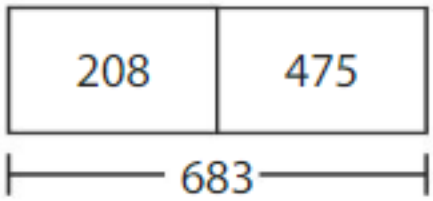
9. **YOU BE THE TEACHER** Your friend uses an inverse operation to check her answer. Is your friend correct? Explain.

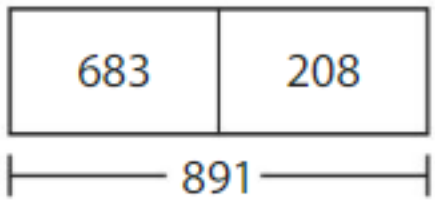
$$\begin{array}{r} 380 \\ -\ 159 \\ \hline 221 \end{array} \qquad \begin{array}{r} 221 \\ +\ 380 \\ \hline 601 \end{array}$$

10. **Which One Doesn't Belong?** Which does *not* belong with the other three?



$683 - 475 = 208$

$683 - 208 = 475$

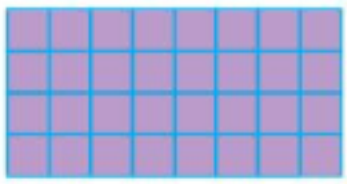


11. **Modeling Real Life** A telescope costs \$169. A customer pays \$119 for the telescope after using a gift card. How much money is the gift card worth?

12. **DIG DEEPER!** A train travels from Dallas to San Antonio. On the way back, the train stops in Austin. How many miles has the train traveled? How many miles does the train have left to travel?

Review & Refresh

13. Use the Distributive Property to find the area of the rectangle.



□ = 1 square foot

$4 \times 8 =$ $\quad 4 \times (\_\_\_\_ + \_\_\_\_)$

$4 \times 8 = (\_\_\_\_ \times \_\_\_\_) + (\_\_\_\_ \times \_\_\_\_)$

$4 \times 8 =$ $\quad \_\_\_\_ \quad + \quad \_\_\_\_$

$4 \times 8 =$ $\quad \_\_\_\_$

Area = _____

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English Spanish

Name _____

Problem Solving: Addition and Subtraction

8.11

Learning Target: Use the problem-solving plan to solve two-step addition and subtraction word problems.

Success Criteria:

- I can understand a problem.
- I can make a plan to solve a problem using letters to represent the unknown numbers.
- I can solve a problem and check whether my answer is reasonable.

FLORIDA STANDARDS
MAFS.3.OA.4.8
MAFS.3.NBT.1.2

Explore and Grow

You read 150 pages in three weeks.

Week	Number of Pages Read
1	56
2	47
3	p

What does p represent?

$p =$ _____

MP **Construct Arguments** Explain to your partner how to find what n represents.

$$250 + n = 580$$

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English Spanish

Think and Grow: Using the Problem-Solving Plan

Example Newton has 368 baseball cards. He gives away 139 of them. He buys 26 more. How many cards does he have now?

Understand the Problem

What do you know?

- Newton has _____ cards.
- He gives away _____ of them.
- He buys _____ more.

What do you need to find?

- You need to find how many _____ he has now.

Make a Plan

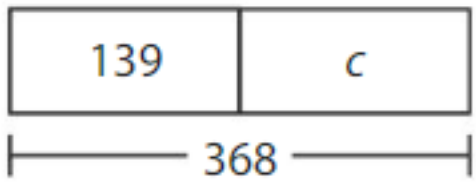
How will you solve?

- Subtract _____ from _____ to find how many _____ he has left after he gives some away.
- Then add _____ to the difference to find how many he has now.

Solve

Draw a part-part-whole model and write an equation.
Use a letter to represent the unknown number.

Step 1:



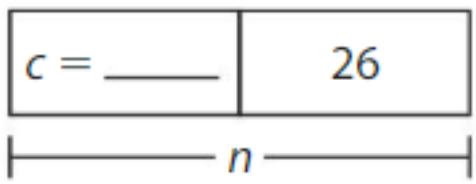
$368 - 139 = c$

c is the unknown difference.

$$\begin{array}{r} 368 \\ -\ 139 \\ \hline \square \end{array}$$

$c =$ _____

Step 2:



_____ $+ 26 = n$

n is the unknown sum.

$$\begin{array}{r} \square \\ +\ 26 \\ \hline \square \end{array}$$

$n =$ _____

Newton has _____ cards now.

Show and Grow

1. Explain how you can check whether your answer above is reasonable.

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English Spanish

Name _____

Apply and Grow: Practice

Write equations to solve. Use letters to represent the unknown numbers. Check whether your answer is reasonable.

2. A baker makes 476 muffins. He sells 218 of them. Then he makes 390 more. How many muffins does the baker have now?

3. Newton knocks down 146 pins in his first bowling game. He knocks down 19 more pins in his second game than in his first game. How many pins does he knock down in all?

4. You are traveling to a campground that is 243 miles away. You travel 155 miles in the morning and 59 miles in the afternoon. How many more miles do you need to travel before you get to the campground?

5. There are 205 lawn tickets and 585 bleacher tickets sold for a concert. There are 680 fewer VIP tickets sold than lawn and bleacher tickets combined. How many VIP tickets are sold?

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Think and Grow: Modeling Real Life

How many more people went to see the movie on Friday than on Thursday and Saturday combined?

Movie Premiere	
Day	**Number of People**
Thursday	346
Friday	897
Saturday	512

Understand the problem:

Make a plan:

Solve:

_____ more people went to see the movie on Friday than on Thursday and Saturday combined.

Show and Grow

6. How many more people used the ferry on Friday than on Saturday and Sunday combined?

Ferry Passengers	
Day	**Number of Passengers**
Friday	903
Saturday	624
Sunday	255

Explain how you can check whether your answer is reasonable.

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English Spanish

Name _____

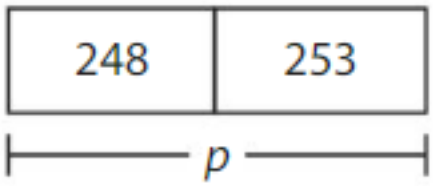
Homework & Practice 8.11

Learning Target: Use the problem-solving plan to solve two-step addition and subtraction word problems.

Example A principal has 248 blue pencils and 253 red pencils. He gives away 315 of them. How many pencils does he have now?

Think: What do you know? What do you need to find? How will you solve?

Step 1: How many pencils does the principal have in all?



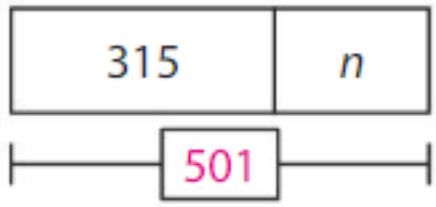
The letter *p* is the unknown sum.

$248 + 253 = p$

$$\begin{array}{r} 248 \\ +\ 253 \\ \hline 501 \end{array}$$

$p = 501$

Step 2: Use *p* to find how many pencils the principal has now.



The letter *n* is the unknown difference.

$501 - 315 = n$

$$\begin{array}{r} 501 \\ -\ 315 \\ \hline 186 \end{array}$$

$n = 186$

The principal has 186 pencils now.

Write equations to solve. Use letters to represent the unknown numbers. Check whether your answer is reasonable.

1. Newton has 387 tokens, and Descartes has 295. They use a total of 461 tokens. How many tokens do they have now?

2. There are 125 second graders and 118 third graders at a museum. There are 249 more adults than students at the museum. How many adults are at the museum?

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English Spanish

3. You received 171 votes in a coloring contest. Your friend received 24 fewer votes than you. How many people voted for you and your friend in all?

4. **Writing** Write and solve a two-step problem that can be solved using addition or subtraction.

5. **Modeling Real Life** How many more fish were caught on Sunday than on Friday and Saturday combined?

Fishing Competition	
Day	**Number of Fish Caught**
Friday	127
Saturday	244
Sunday	564

Explain how you can check whether your answer is reasonable.

Review & Refresh

6. Use the multiplication table.

×	1	2	3	4	5	6
1	1	2	3	4	5	6
2	2	4	6	8	10	12
3	3	6	9	12	15	18
4	4	8	12	16	20	24
5	5	10	15	20	25	30
6	6	12	18	24	30	36

Describe the pattern in the shaded row and column.

What property explains this pattern?

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English Spanish

Name _____

Performance Task 8

Your school holds a talent show.

1. You and your friend hand out programs to guests before the show. You each start with 250 programs. There are 114 programs left. How many programs did you and your friend hand out?

2. 75 students wait backstage to perform in the show. There are 336 children, 125 adults, and 14 teachers in the audience.

a. How many people are at the talent show in all? Explain how to use addition properties to find the sum.

b. Four students perform in each of the first 4 acts. How many students still need to perform?

c. Each performer is given a juice box backstage. Juice boxes come in packages of 10. How many packages did the teachers buy? How many juice boxes are left?

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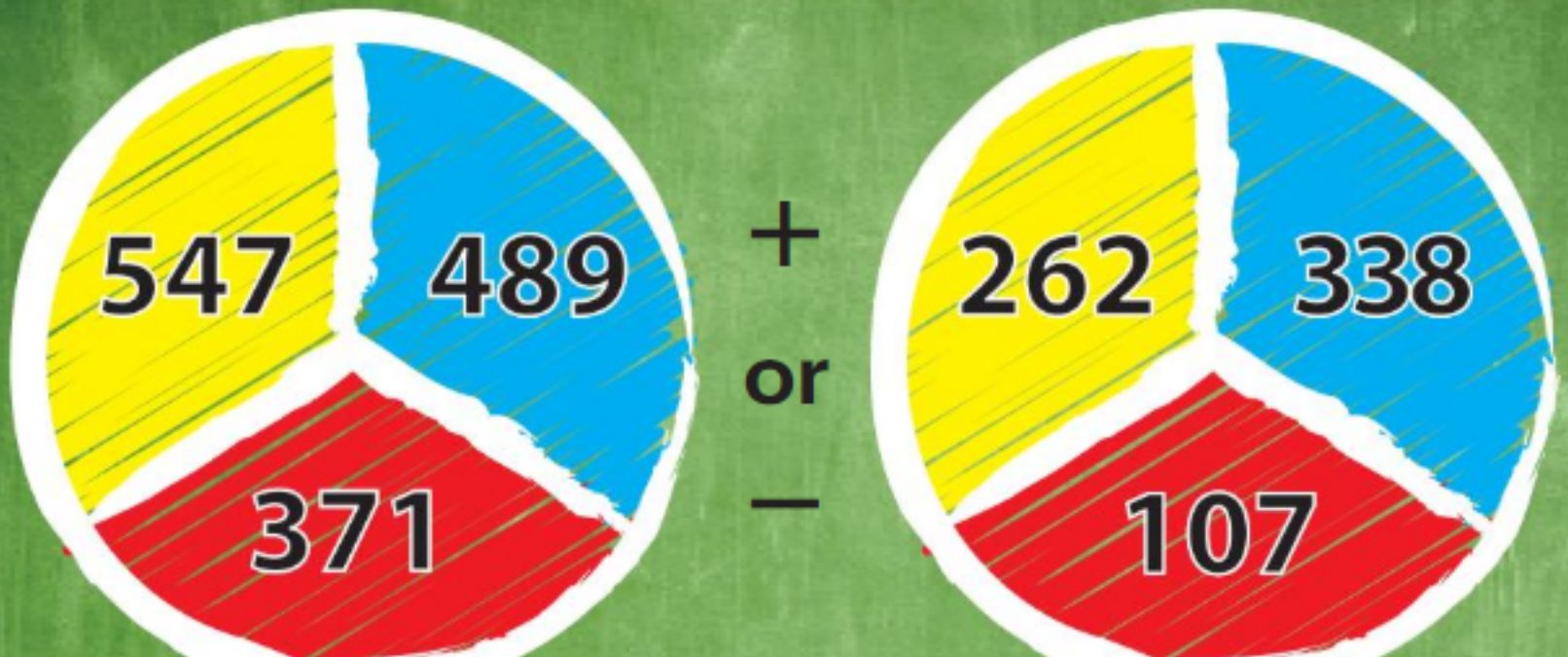
Three in a Row: Addition and Subtraction

Directions:

1. Players take turns.
2. On your turn, spin both spinners. Add or subtract the two numbers. Cover the sum or difference.
3. If the sum or difference is already covered, then you lose your turn.
4. The first player to get three counters in a row, horizontally, vertically, or diagonally, wins!



Sums

827	633	654
709	809	596
885	751	478

Differences

227	209	33
109	151	440
285	264	382

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English Spanish

Name _____

Chapter Practice 8

8.1 Identify Addition Properties

Identify the property.

1. $59 + 0 = 59$

2. $(14 + 32) + 6 = 14 + (32 + 6)$

3. $27 + 51 = 51 + 27$

4. MP **Structure** Which equations show the Commutative Property of Addition?

$64 + 12 = 12 + 64$

$71 + 0 = 71$

$(56 + 21) + 34 = 56 + (21 + 34)$

$26 + (41 + 4) = 4 + (26 + 41)$

8.2 Use Number Lines to Add

5. Find $648 + 37$.

$648 + 37 =$ _____

8.3 Use Mental Math to Add

Use mental math to find the sum.

6. $192 + 107 =$ _____

7. $676 + 114 =$ _____

8. $716 + 279 =$ _____

9. $501 + 468 =$ _____

10. $527 + 343 =$ _____

11. $441 + 189 =$ _____

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8.4 Use Partial Sums to Add

Use partial sums to add.

12.
$$\begin{array}{r} 586 \\ +\ 107 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 647 \\ +\ 293 \\ \hline \end{array}$$

14. Modeling Real Life On Earth, your cousin weighs 207 pounds less than he would on Jupiter. Your cousin weighs 135 pounds on Earth. How much would he weigh on Jupiter?

8.5 Add Three-Digit Numbers

Find the sum. Check whether your answer is reasonable.

15. Estimate: _____

326 + 490 = _____

16. Estimate: _____

657 + 189 = _____

17. Estimate: _____

543 + 261 = _____

8.6 Add Three or More Numbers

Find the sum. Check whether your answer is reasonable.

18. Estimate: _____

$$\begin{array}{r} 78 \\ 433 \\ +\ 367 \\ \hline \end{array}$$

19. Estimate: _____

$$\begin{array}{r} 194 \\ 151 \\ 244 \\ +\ 231 \\ \hline \end{array}$$

20. Estimate: _____

$$\begin{array}{r} 373 \\ 329 \\ 118 \\ +\ 61 \\ \hline \end{array}$$

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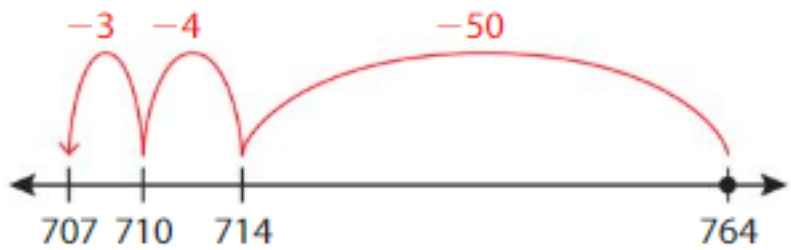
8.7 Use Number Lines to Subtract

21. Find 856 − 29.

856 − 29 = _____

22. MP **Structure** Write the equation shown by the number line.



_____ − _____ = _____

8.8 Use Mental Math to Subtract

Use mental math to find the difference.

23. 957 − 619 = _____

24. 831 − 415 = _____

25. 876 − 366 = _____

26. 636 − 317 = _____

27. 965 − 528 = _____

28. 384 − 118 = _____

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8.9 Subtract Three-Digit Numbers

Find the difference. Check whether your answer is reasonable.

29. Estimate: _____

963 − 451 = _____

30. Estimate: _____

878 − 594 = _____

31. Estimate: _____

766 − 297 = _____

32. **YOU BE THE TEACHER** Your friend finds 760 − 482. Is your friend correct? Explain.

$$\begin{array}{r} 6\ 16 \\ \cancel{7}\ \cancel{6}\ 0 \\ -\ 4\ 8\ 2 \\ \hline 2\ 8\ 2 \end{array}$$

8.10 Relate Addition and Subtraction

Find the sum or difference. Use the inverse operation to check.

33.
$$\begin{array}{r} 649 \\ +\ 227 \\ \hline \end{array}$$

34.
$$\begin{array}{r} 805 \\ -\ 517 \\ \hline \end{array}$$

8.11 Problem Solving: Addition and Subtraction

35. There are 532 dogs enrolled in police academies. 246 dogs graduate in July, and 187 dogs graduate in August. How many dogs still need to graduate?

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English Spanish

Name _____

Cumulative Practice 1–8

1. Which numbers round to 300 when rounded to the nearest hundred?

- ☐ 298
- ☐ 309
- ☐ 347
- ☐ 246
- ☐ 358
- ☐ 263

2. You buy 18 cups of yogurt. The yogurt is sold in packs of 6 cups. How many packs of yogurt do you buy?

- Ⓐ 24 packs
- Ⓑ 12 packs
- Ⓒ 3 packs
- Ⓓ 4 packs

3. A bedroom floor is 9 feet long and 8 feet wide. What is the area of the bedroom floor?

- Ⓐ 1 square foot
- Ⓑ 72 feet
- Ⓒ 17 square feet
- Ⓓ 72 square feet

4. Your friend says $458 - 298 = 160$. How can you use inverse operations to check your friend's answer? Is your friend correct?

- Ⓐ Subtract: $458 - 300 = 158$. Your friend is correct.
- Ⓑ Add: $160 + 298 = 458$. Your friend is correct.
- Ⓒ Add: $298 + 458 = 756$. Your friend is incorrect.
- Ⓓ Subtract: $298 - 160 = 138$. Your friend is incorrect.

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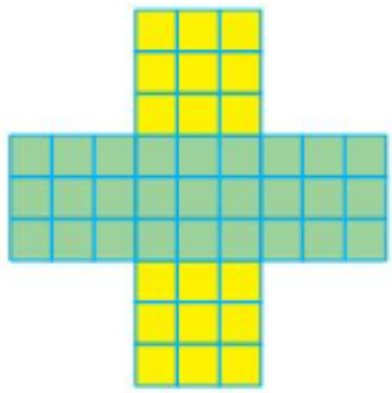
5. Your friend says she needs $(9 \times 3) + (3 \times 9) = 27 + 27 = 54$ tiles to make the design. Why is her thinking incorrect?



Ⓐ $27 + 27$ does not equal 54.

Ⓑ Your friend included the 9 middle tiles twice.

Ⓒ Your friend multiplied 3×9 incorrectly.

Ⓓ 9×3 does not equal 3×9.

---

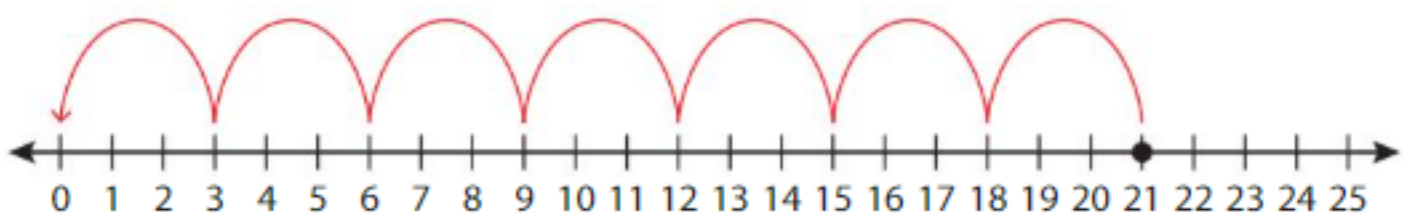
6. Part A What is the least number that can be made with the digits 7, 9, and 8 using each digit only once?

Think
Solve
Explain

Part B Your friend says the greatest number he can make with the digits 7, 9, and 8 using each digit only once is 879. Is he correct? If not, correct his answer. Explain.

---

7. Which equation is shown by the number line?



Ⓐ $21 \div 3 = 7$

Ⓑ $21 - 21 = 0$

Ⓒ $3 \times 7 = 21$

Ⓓ $21 - 7 = 14$

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8. Find the sum.

$$\begin{array}{r} 548 \\ +\ 372 \\ \hline \end{array}$$

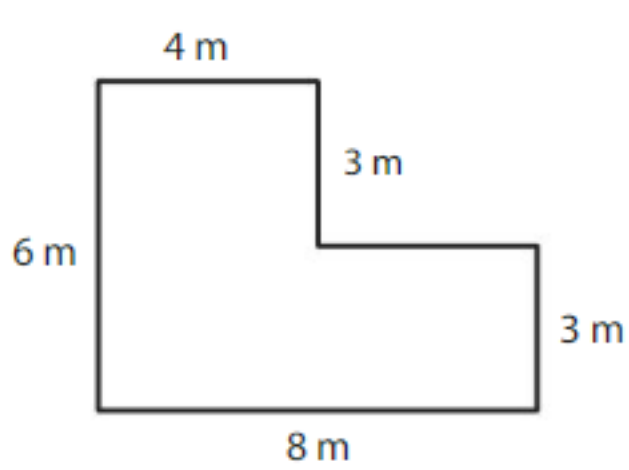
9. Which equations show the Associative Property of Addition?

- ☐ $45 + (34 + 21) = (45 + 34) + 21$
- ☐ $54 + 72 = 72 + 54$
- ☐ $56 + 0 = 56$
- ☐ $(62 + 84) + 19 = 62 + (84 + 19)$

10. A teacher takes 7 students on a field trip. Each student pays $5. How much money does the teacher collect in all?

Ⓐ $2
Ⓑ $12
Ⓒ $35
Ⓓ $30

11. What is the area of the shape?



Ⓐ 24 square meters
Ⓑ 48 square meters
Ⓒ 14 square meters
Ⓓ 36 square meters

12. There are 459 girls and 552 boys in a school. How many more boys are there than girls?

Ⓐ 107
Ⓑ 93
Ⓒ 113
Ⓓ 7

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13. Look at the pattern. What rule was used to make the pattern?

1, 3, 9, 27

Ⓐ Add 2.

Ⓑ Subtract 2.

Ⓒ Multiply by 3.

Ⓓ Divide by 3.

14. A smoothie shop sells 368 smoothies in July and 205 smoothies in August. About how many more smoothies did the shop sell in July than in August?

Ⓐ 100

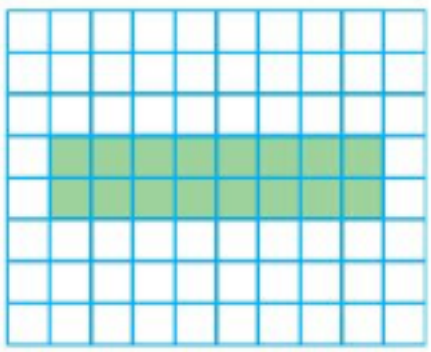
Ⓑ 200

Ⓒ 103

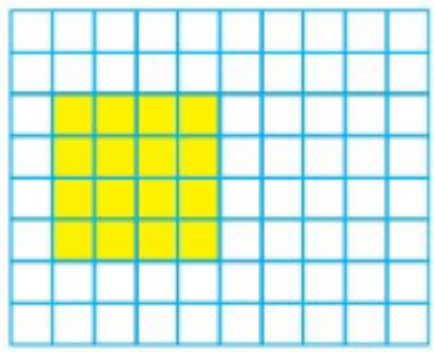
Ⓓ 600

15. Which shape does *not* have an area of 16 square units?

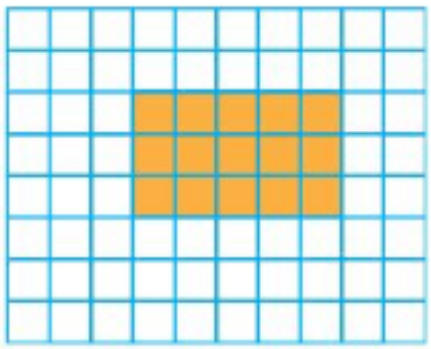
Ⓐ



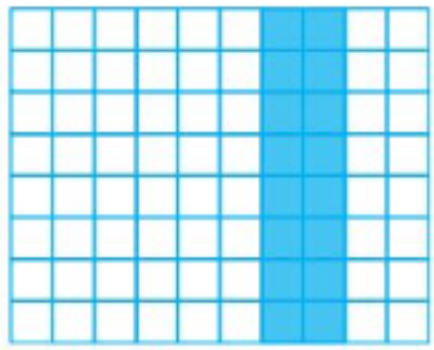
Ⓑ



Ⓒ



Ⓓ



Complete the table.

16.

×	2	☐	9
4		12	
5	10		
☐			54

17.

×	☐	3	4
☐			16
6	6		24
7			

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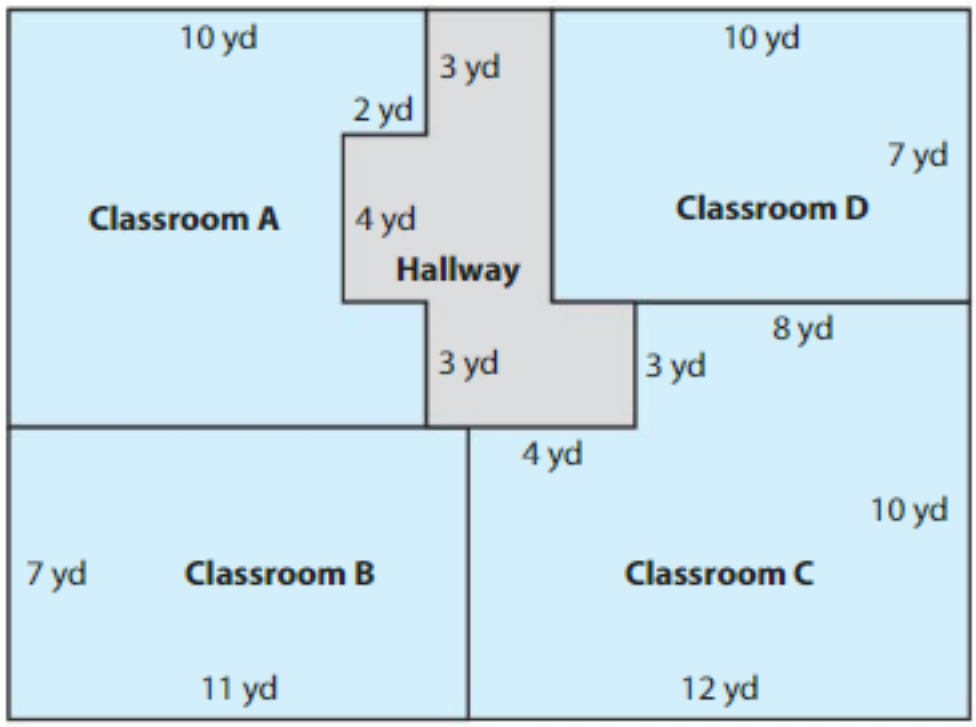
Name _____

STEAM Performance Task 1–8

1. The carpeting in the third-grade classrooms of an elementary school is being replaced. One roll of carpet covers 100 square yards. The map shows the classrooms that will receive the new carpet.

Third-Grade Section

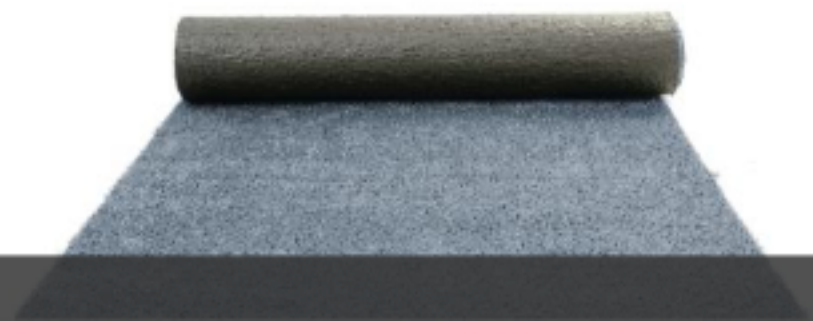


a. Explain two different ways to find the area of Classroom A.

b. Find the total area of all of the classrooms in square yards.

c. Estimate the number of rolls of carpet needed for the classrooms. Explain.

d. Find the area of the hallway in square yards. Is there enough carpet for the hallway?



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2. Each school keeps a record of the total number of students in each class and grade.

a. Use the number of students in your class to estimate the total number of students in your grade. Explain.

b. Use the table to write the number of students in each grade of your school.

Grade	Number of Students

c. How does your estimate compare to the actual number of students in your grade? Explain.

d. What is the total number of students in your school?

e. Write and answer a question using the information from the table above.

f. What is one reason your principal may want to know the total number of students in your class, grade, or school?

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9 Multiples and Problem Solving

- What kinds of books do you like to read?
- You read 10 pages of a book each day. How can place value help you find the total number of pages you read?

Chapter Learning Target:
Understand multiples.

Chapter Success Criteria:
- I can skip count.
- I can describe the pattern when multiplying.
- I can make a plan to solve a problem.
- I can solve a problem.

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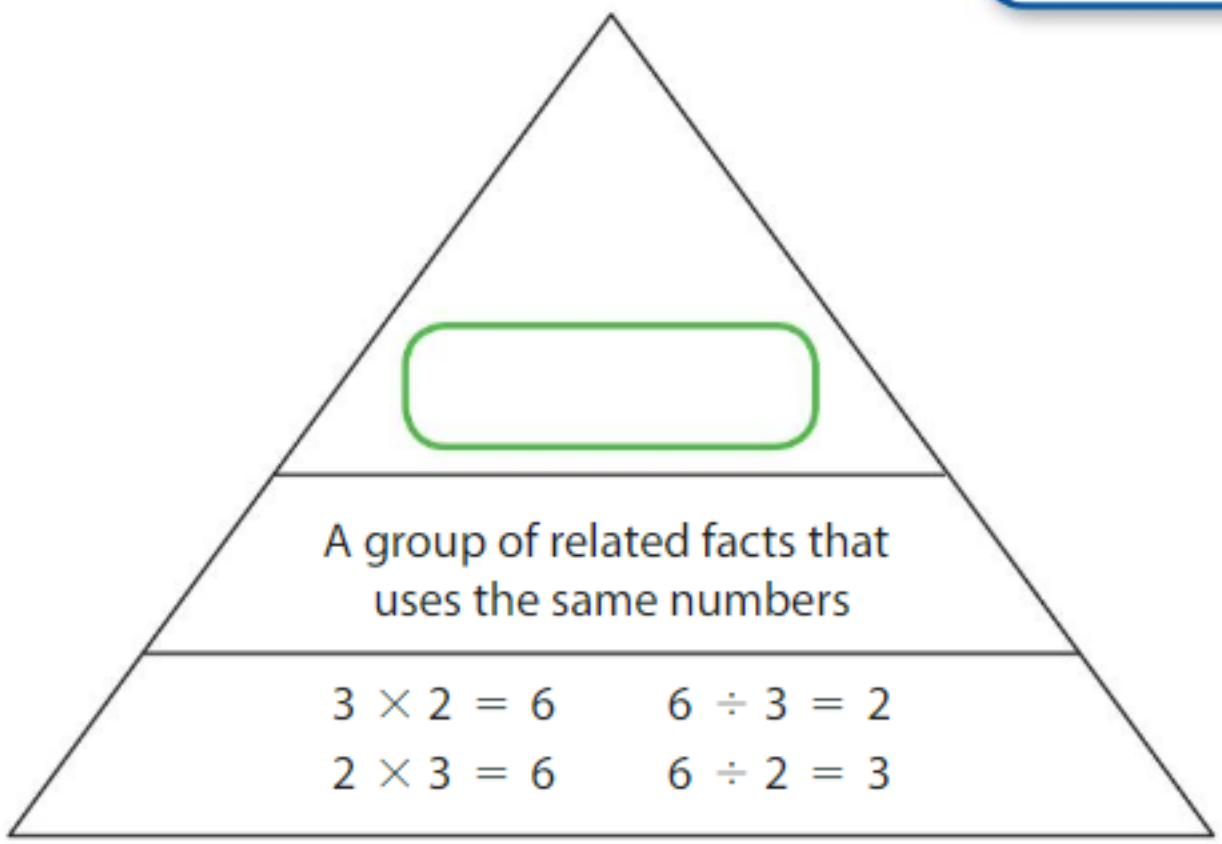
9 Vocabulary

Review Words

dividend
divisor
fact family
quotient

Organize It

Use a review word to complete the graphic organizer.



Define It

Identify the review word. Find the word in the word search.

1. The number of objects or the amount you want to divide
2. The number by which you divide
3. The answer when you divide one number by another number

V	R	E	S	K	B	D	Y
A	Z	D	Q	U	W	I	L
T	R	I	P	F	S	V	G
D	J	V	M	V	E	I	D
F	C	I	A	X	O	D	U
N	U	S	R	D	G	E	N
Q	U	O	T	I	E	N	T
E	S	R	O	V	T	D	Q

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Name _____

Use Number Lines to Multiply by Multiples of 10

9.1

Learning Target: Use number lines to multiply by multiples of 10.

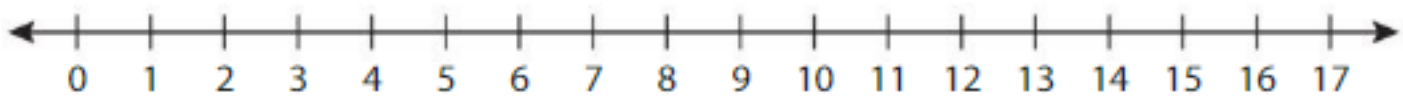
Success Criteria:

- I can use a number line to skip count by a multiple of 10.
- I can find the product of a one-digit number and a multiple of 10.

FLORIDA STANDARDS
MAFS.3.NBT.1.3

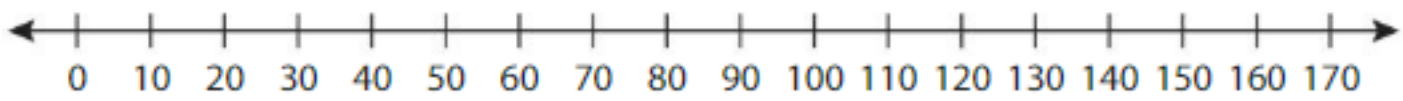
Explore and Grow

Show 5 jumps of 3. Write a multiplication equation shown by the number line.



_____ × _____ = _____

Show 5 jumps of 30. Write a multiplication equation shown by the number line.



_____ × _____ = _____

MP **Structure** Compare the models. How are they the same? How are they different?

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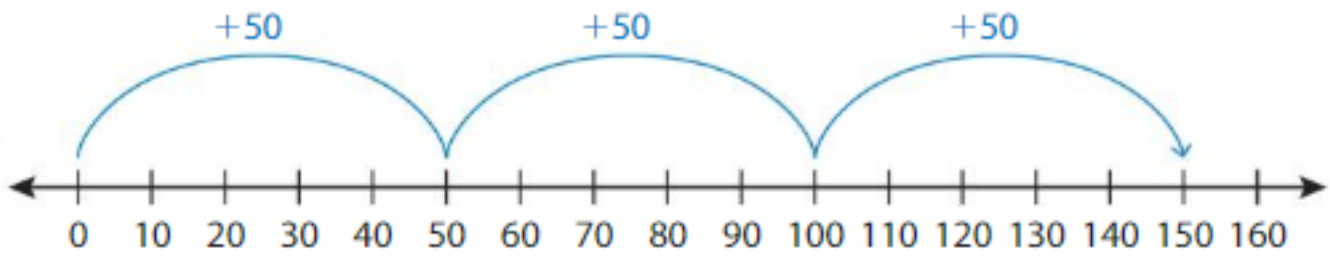
Think and Grow: Number Lines and Multiples of 10

Example Find 3×50.

3×50 means 3 groups of 50.

Number of jumps: _____ Size of each jump: _____

Start at 0. Skip count by 50 three times.

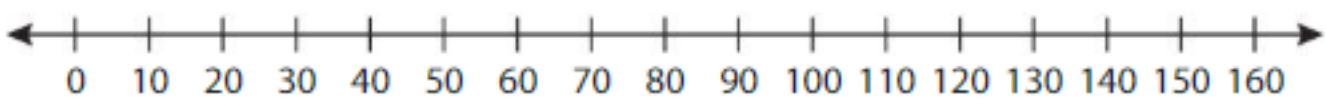


$3 \times 50 =$ _____

Show and Grow

1. Find 8×20.

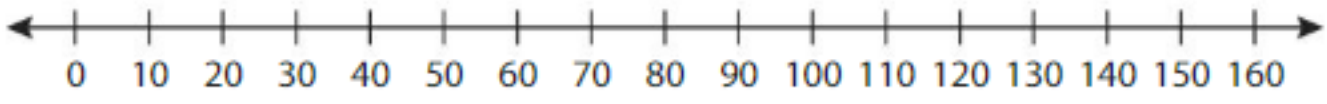
Number of jumps: _____ Size of each jump: _____



$8 \times 20 =$ _____

2. Find 4×30.

Number of jumps: _____ Size of each jump: _____



$4 \times 30 =$ _____

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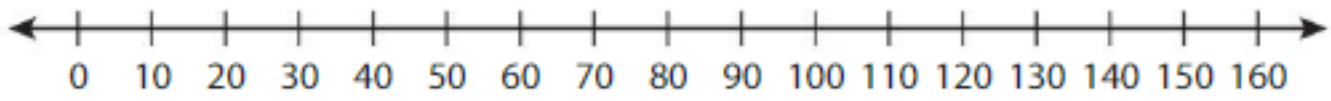
Name _____

Apply and Grow: Practice

3. Find 2×60.

Number of jumps: _____ Size of each jump: _____



$2 \times 60 =$ _____

4. Find 5×50.

$5 \times 50 =$ _____

5. Find 3×70.

$3 \times 70 =$ _____

6. Find 30×6.

$30 \times 6 =$ _____

7. MP **Structure** Show 2×40 on one number line and 4×20 on the other. What is the same about the number lines? What is different?

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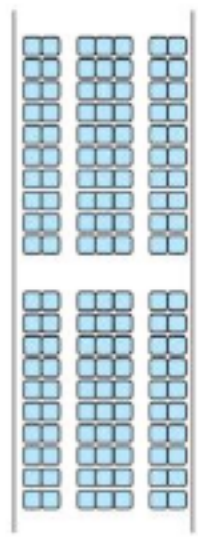
Think and Grow: Modeling Real Life

A section of an airplane has 20 rows of seats. Each row has 7 seats. Can the section seat more than 150 people? Explain.



Model:

The section _____ seat more than 150 people.

Explain:

Show and Grow

8. There are 9 rows of seats in an auditorium. Each row has 30 seats. Can the auditorium seat more than 250 people? Explain.

9. A mechanic installs new tires on 20 cars and 20 pickup trucks. How many new tires does the mechanic install in all?

10. DIG DEEPER! Newton saves $5 each week for 20 weeks. How much more money does he need to buy a new bike that costs $130? If he continues to save the same amount each week, how many more weeks does he need to save to buy the bike? Explain.

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English Spanish

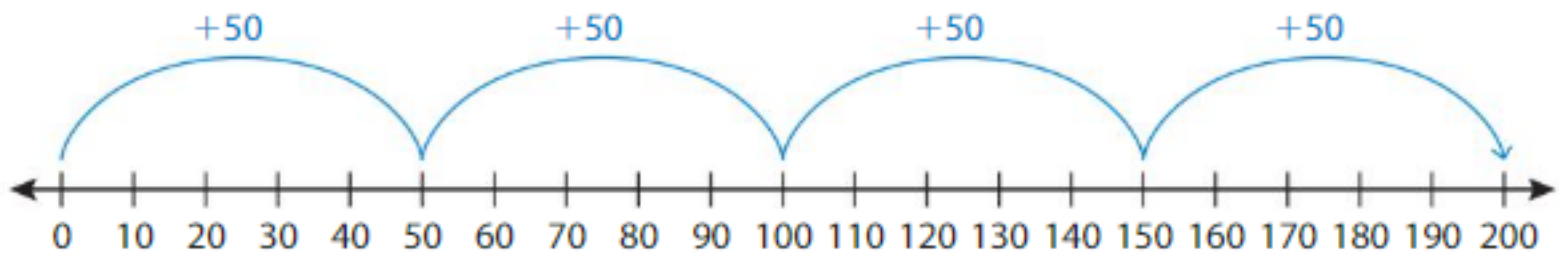
Name _____

Homework & Practice 9.1

Learning Target: Use number lines to multiply by multiples of 10.

Example Find 4×50.

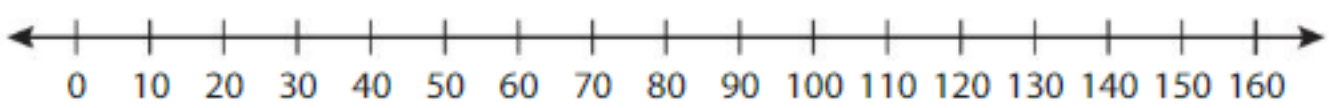
Number of jumps: 4 Size of each jump: 50



$4 \times 50 = 200$

1. Find 3×30.

Number of jumps: _____ Size of each jump: _____



$3 \times 30 =$ _____

2. Find 7×60.

$7 \times 60 =$ _____

3. Find 4×40.

$4 \times 40 =$ _____

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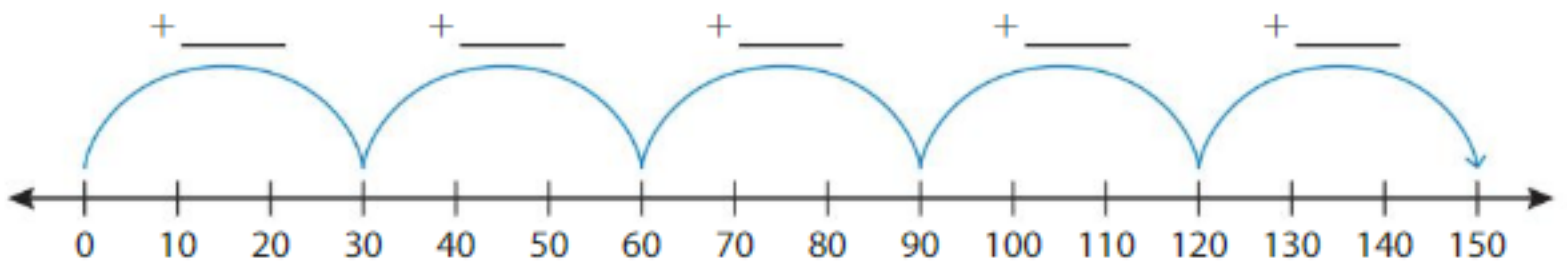
4. Find 80×3.

$80 \times 3 =$ _____

---

5. **Structure** Complete the number line. Then write the multiplication equation shown on the number line.



_____ $\times$ _____ = _____

---

6. **Modeling Real Life** A gymnasium has 9 rows of seats. Each row has 50 seats. Can the gymnasium seat more than 500 people? Explain.

---

7. **Modeling Real Life** Ten adults and 20 children fill their bike tires at a public pump. How many tires are filled in all?

Review & Refresh

8. There are 35 counters. The counters are in 7 equal rows. How many counters are in each row?

7 rows of _____

$35 \div 7 =$ _____

9. You have 32 counters. You arrange them with 8 counters in each row. How many rows of counters do you make?

_____ rows of 8

$32 \div 8 =$ _____

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English Spanish

Name _____

Use Place Value to Multiply by Multiples of 10

9.2

Learning Target: Use place value to multiply by multiples of 10.

Success Criteria:

- I can use a model to multiply by a multiple of 10.
- I can find the product of a one-digit number and a multiple of 10.
- I can describe a pattern when multiplying by multiples of 10.

FLORIDA STANDARDS
MAFS.3.NBT.1.3

Explore and Grow

Use models to find each product. Draw your models.

$4 \times 6 =$ _____

$4 \times 60 =$ _____

MP **Structure** Compare the models. How are they the same? How are they different?

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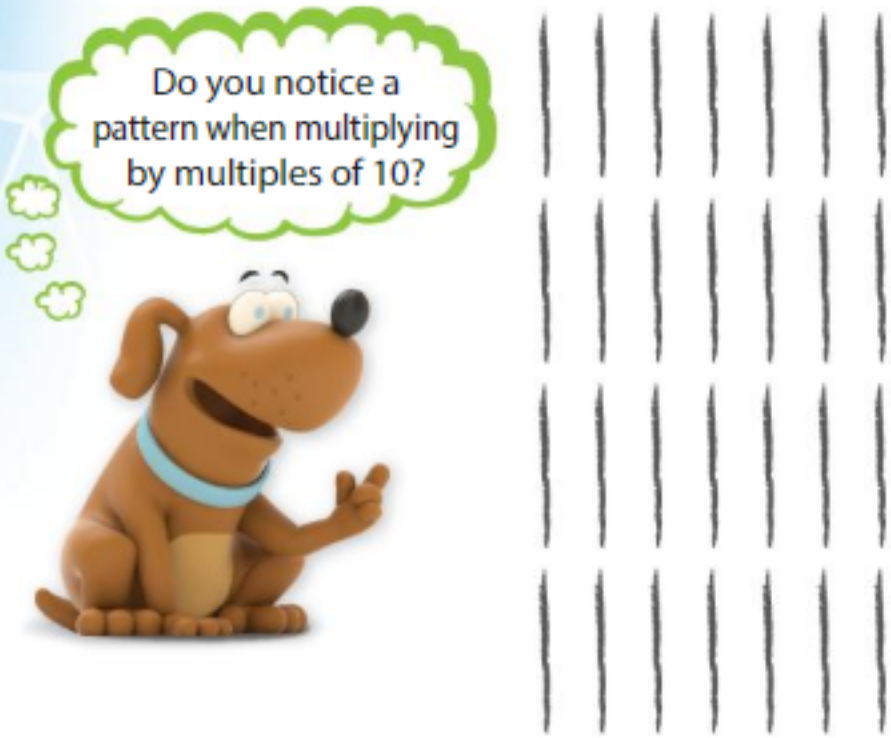
Think and Grow: Place Value and Multiples of 10

Example Find 4×70.

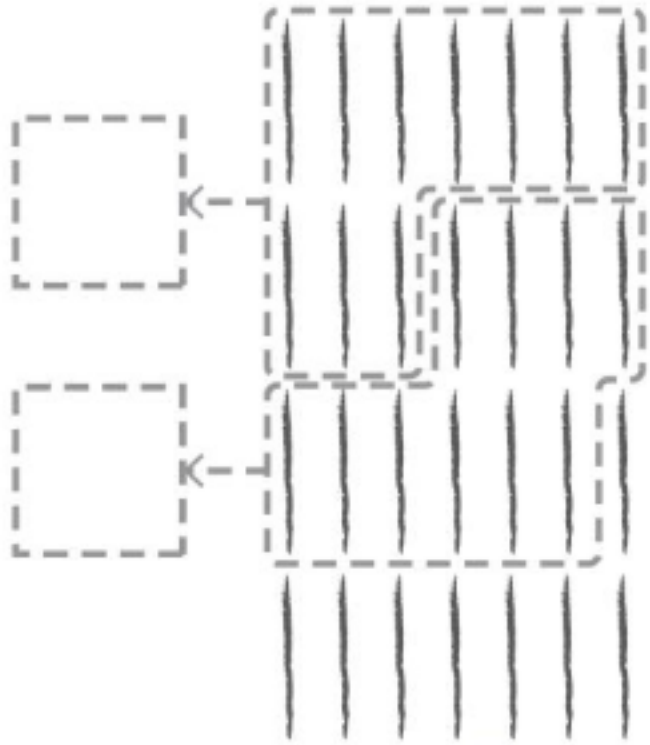
Step 1: Make a quick sketch to model the product. Think: 4 groups of 70, or 7 tens.



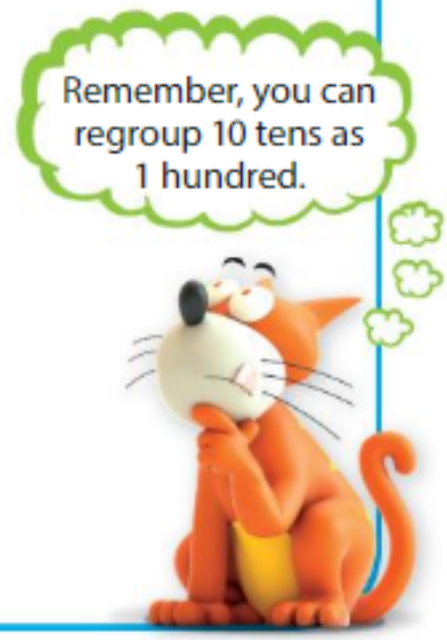
$4 \times 70 = 4 \times$ _____ tens

$4 \times 70 =$ _____ tens

Step 2: Regroup _____ tens.



There are _____ hundreds and _____ tens.



So, $4 \times 70 =$ _____.

Show and Grow

Make a quick sketch to find the product.

1. $3 \times 80 =$ _____

2. $5 \times 40 =$ _____

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Name _____

Apply and Grow: Practice

Use place value to find the product.

3. $3 \times 90 = 3 \times$ _____ tens

$3 \times 90 =$ _____ tens

$3 \times 90 =$ _____

4. $6 \times 60 = 6 \times$ _____ tens

$6 \times 60 =$ _____ tens

$6 \times 60 =$ _____

5. $2 \times 70 = 2 \times$ _____ tens

$2 \times 70 =$ _____ tens

$2 \times 70 =$ _____

6. $9 \times 20 = 9 \times$ _____ tens

$9 \times 20 =$ _____ tens

$9 \times 20 =$ _____

Find the product.

7. $3 \times 30 =$ _____

8. $6 \times 80 =$ _____

9. $4 \times 40 =$ _____

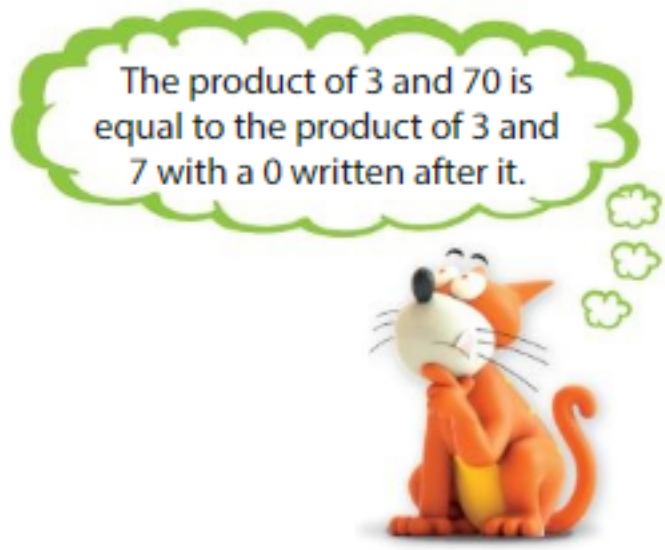
10. $7 \times 50 =$ _____

11. $8 \times 70 =$ _____

12. $5 \times 90 =$ _____

13. MP **Reasoning** Explain why the product of 6 and 30 has 1 zero and the product of 4 and 50 has 2 zeros.

14. **YOU BE THE TEACHER** Is Descartes correct? Explain.



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Think and Grow: Modeling Real Life

Newton saves $30 each month for 6 months. Does he have enough money to buy the drone? Explain.

Newton _____ have enough money to buy the drone.

Explain:

Show and Grow

15. Descartes saves $20 each month for 8 months. Does he have enough money to buy the remote control jeep? Explain.

16. You practice playing the guitar for 40 minutes every day. How many minutes do you practice in one week?

17. A box of snacks has 25 bags of pretzels and 25 bags of peanuts. How many bags are in 9 boxes?

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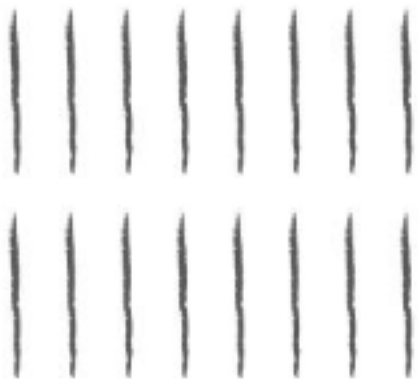
Name _____

Homework & Practice 9.2

Learning Target: Use place value to multiply by multiples of 10.

Example Find 2×80.

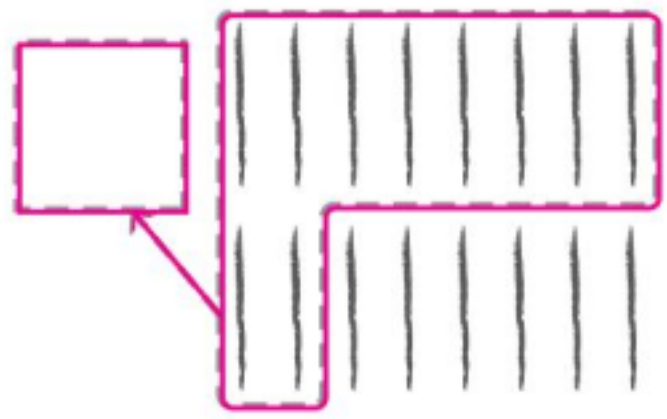
Step 1: Make a quick sketch to model the product. Think: 2 groups of 80, or 8 tens.



$2 \times 80 = 2 \times$ 8 tens

$2 \times 80 =$ 16 tens

Step 2: Regroup 10 tens.



There is 1 hundred and

6 tens.

So, $2 \times 80 =$ 160.

Make a quick sketch to find the product.

1. $5 \times 70 =$ _____

2. $3 \times 60 =$ _____

Use place value to find the product.

3. $8 \times 50 = 8 \times$ _____ tens

$8 \times 50 =$ _____ tens

$8 \times 50 =$ _____

4. $7 \times 60 = 7 \times$ _____ tens

$7 \times 60 =$ _____ tens

$7 \times 60 =$ _____

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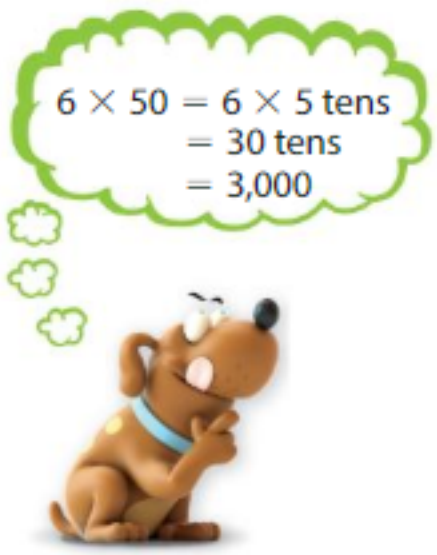
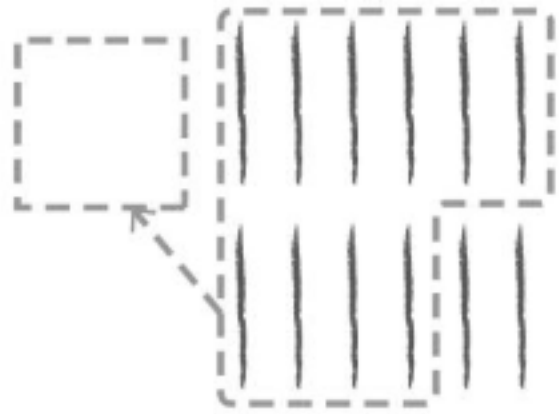
Find the product.

5. $6 \times 90 =$ _____ | **6.** $8 \times 30 =$ _____ | **7.** $5 \times 40 =$ _____

8. **YOU BE THE TEACHER** Is Newton correct? Explain.



9. **Structure** Write an equation for the quick sketch.



_____ × _____ = _____

10. **Modeling Real Life** Descartes saves $50 each month for 5 months. Does he have enough money to buy the game system? Explain.

11. **Modeling Real Life** A group of staff members packs coolers for a field trip. Each cooler has 15 peanut butter sandwiches and 15 turkey sandwiches. How many sandwiches are in 7 coolers?

Review & Refresh

12. Round 282 to the nearest ten and to the nearest hundred.

Nearest ten: _____ Nearest hundred: _____

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English Spanish

Name _____

Use Properties to Multiply by Multiples of 10

9.3

Learning Target: Use properties to multiply by multiples of 10.

Success Criteria:

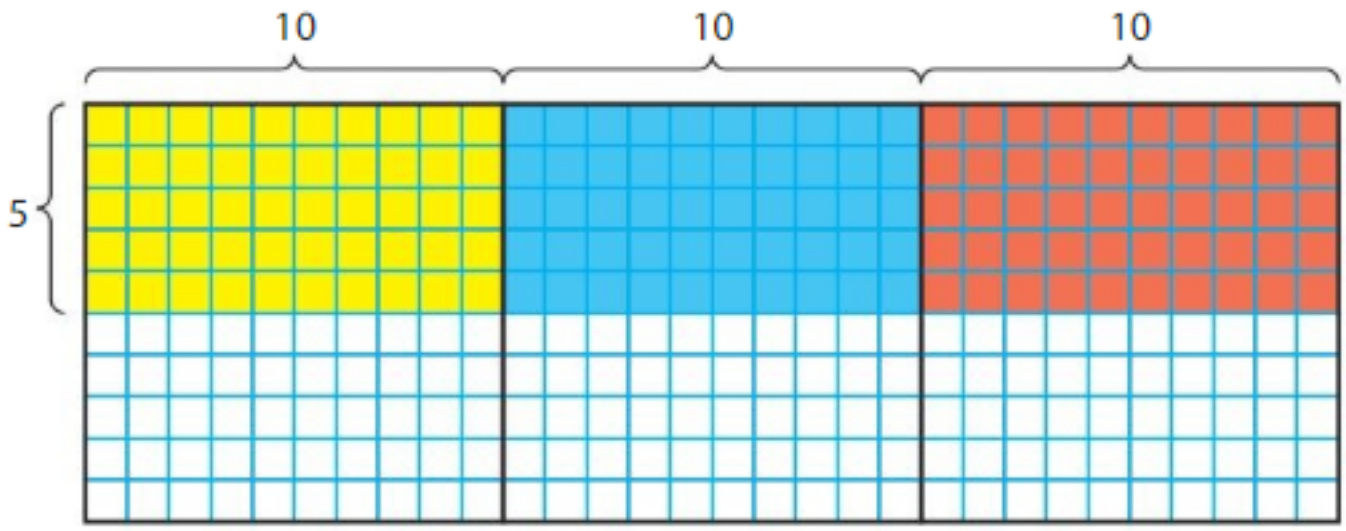
- I can use the Associative Property of Multiplication to multiply by a multiple of 10.
- I can use the Distributive Property to multiply by a multiple of 10.
- I can use properties to find the product of a one-digit number and a multiple of 10.

FLORIDA STANDARDS

MAFS.3.OA.2.5
MAFS.3.NBT.1.3

Explore and Grow

Use the colored rectangles to find 5×30.



____ × ____ = ____

____ × ____ = ____

____ × ____ = ____

____ + ____ + ____ = ____

So, $5 \times 30 =$ _____.

MP **Reasoning** How does this model relate to the Distributive Property?

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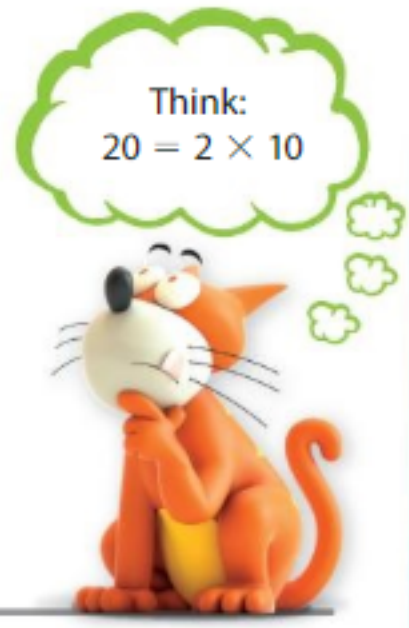
Think and Grow: Properties and Multiples of 10

Example Find 6×20.

One Way: Use the Associative Property of Multiplication.



$6 \times 20 = 6 \times (\_\_\_\_ \times 10)$ Rewrite 20 as $\_\_\_\_ \times 10$.

$6 \times 20 = (6 \times \_\_\_\_) \times 10$ Associative Property of Multiplication

$6 \times 20 = \_\_\_\_ \times 10$

$6 \times 20 = \_\_\_\_$

Another Way: Use the Distributive Property.

$6 \times 20 = 6 \times (10 + \_\_\_\_)$ Rewrite 20 as $10 + \_\_\_\_$.

$6 \times 20 = (6 \times 10) + (6 \times \_\_\_\_)$ Distributive Property

$6 \times 20 = \_\_\_\_ + \_\_\_\_$

$6 \times 20 = \_\_\_\_$

Show and Grow

1. Use the Associative Property of Multiplication to find 4×60.

$4 \times 60 = 4 \times (\_\_\_\_ \times 10)$

$4 \times 60 = (4 \times \_\_\_\_) \times 10$

$4 \times 60 = \_\_\_\_ \times 10$

$4 \times 60 = \_\_\_\_$

2. Use the Distributive Property to find 9×20.

$9 \times 20 = 9 \times (10 + \_\_\_\_)$

$9 \times 20 = (9 \times 10) + (9 \times \_\_\_\_)$

$9 \times 20 = \_\_\_\_ + \_\_\_\_$

$9 \times 20 = \_\_\_\_$

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Name _____

Apply and Grow: Practice

Use properties to find the product.

3. $7 \times 30 =$ _____

4. $5 \times 80 =$ _____

5. $5 \times 20 =$ _____

6. $3 \times 90 =$ _____

Find the missing factor.

7. $8 \times$ _____ $= 320$

8. _____ $\times 50 = 300$

9. _____ $\times 30 = 270$

10. MP **Number Sense** Use the Associative Property of Multiplication to show why $4 \times 20 = 8 \times 10$.

11. **Open-Ended** Write three expressions equal to 240.

_____ $\times$ _____ | _____ $\times$ _____ | _____ $\times$ _____

12. MP **Number Sense** Which equations show the Distributive Property?

$2 \times 20 = (2 \times 10) + (2 \times 10)$

$4 \times (3 \times 10) = (4 \times 3) \times 10$

$(7 \times 10) + (7 \times 10) = 7 \times 20$

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Think and Grow: Modeling Real Life

There are 8 tables in a classroom. There are 5 students at each table. Each student has 10 markers. How many markers do the students have in all?

There are _____ markers at each table.

The students have _____ markers in all.

Show and Grow

13. Your teacher buys 5 boxes of pens. Each box has 6 bundles of 10 pens. How many pens does your teacher buy in all?

14. **DIG DEEPER!** Newton earns $30 each work shift. He wants to buy Descartes a cat tree. The tree costs $150. After how many work shifts can Newton buy the tree?

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Name _____

Homework & Practice 9.3

Learning Target: Use properties to multiply by multiples of 10.

Example Find 8×20.

One Way: Use the Associative Property of Multiplication.

$8 \times 20 = 8 \times (\underline{2} \times 10)$ Rewrite 20 as $\underline{2} \times 10$.

$8 \times 20 = (8 \times \underline{2}) \times 10$ Associative Property of Multiplication

$8 \times 20 = \underline{16} \times 10$

$8 \times 20 = \underline{160}$

Another Way: Use the Distributive Property.

$8 \times 20 = 8 \times (10 + \underline{10})$ Rewrite 20 as $10 + \underline{10}$.

$8 \times 20 = (8 \times 10) + (8 \times \underline{10})$ Distributive Property

$8 \times 20 = \underline{80} + \underline{80}$

$8 \times 20 = \underline{160}$

1. Use the Associative Property of Multiplication to find 6×70.

$6 \times 70 = 6 \times (\_\_\_\_ \times 10)$

$6 \times 70 = (6 \times \_\_\_\_) \times 10$

$6 \times 70 = \_\_\_\_ \times 10$

$6 \times 70 = \_\_\_\_$

2. Use the Distributive Property to find 3×20.

$3 \times 20 = 3 \times (10 + \_\_\_\_)$

$3 \times 20 = (3 \times 10) + (3 \times \_\_\_\_)$

$3 \times 20 = \_\_\_\_ + \_\_\_\_$

$3 \times 20 = \_\_\_\_$

Use properties to find the product.

3. $9 \times 20 = \_\_\_\_$

4. $5 \times 30 = \_\_\_\_$

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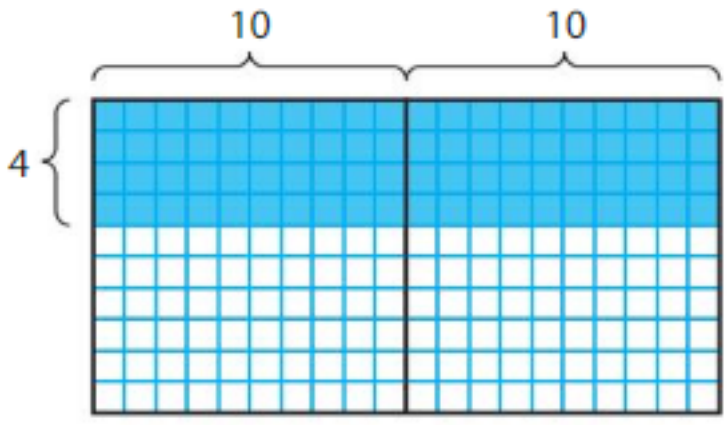
Find the missing factor.

5. $\_\_\_\_ \times 60 = 180$ | **6.** $6 \times \_\_\_\_ = 240$ | **7.** $\_\_\_\_ \times 80 = 720$

8. **YOU BE THE TEACHER** Your friend draws a model to find 4×20. Is your friend correct? Explain.



$4 \times 10 = 40$ $4 \times 10 = 40$

$40 + 40 = 80$

So, $4 \times 20 = 80$.

9. **Number Sense** How can you tell whether 7×40 or 8×70 is greater without finding the products?

10. **Modeling Real Life** There are 9 teams in a math competition. Each team has 6 students. Each student answers 10 questions. How many questions are answered in all?

11. **DIG DEEPER!** A soccer team earns $40 each week washing cars. The team wants to buy an inflatable field for $240. After how many weeks can the team buy the field?

Review & Refresh

Find the quotient.

12. $3\overline{)18}$ **13.** $4\overline{)32}$ **14.** $3\overline{)27}$ **15.** $4\overline{)16}$

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English Spanish

Name _____

Problem Solving: Multiplication and Division

9.4

Learning Target: Use the problem-solving plan to solve two-step multiplication and division word problems.

Success Criteria:

- I can understand a problem.
- I can make a plan to solve a problem using letters to represent the unknown numbers.
- I can solve a problem and check whether my answer is reasonable.

FLORIDA STANDARDS
MAFS.3.OA.4.8

Explore and Grow

Use any strategy to solve the problem.

Descartes uses 72 blocks to build ships. He uses 9 blocks for each ship. Each ship has 2 fabric sails. How many sails does Descartes use?

Descartes uses _____ fabric sails.

MP **Structure** What equations did you use to solve? How can you write the equations using a letter to represent the number of fabric sails?

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Think and Grow: Using the Problem-Solving Plan

Example A box of 8 burritos costs $9. How much does it cost a group of friends to buy 40 burritos?

Understand the Problem

What do you know?

- A box has _____ burritos.
- The box costs _____.
- A group of friends wants to buy _____ burritos.

What do you need to find?

- You need to find how much it costs to buy _____.

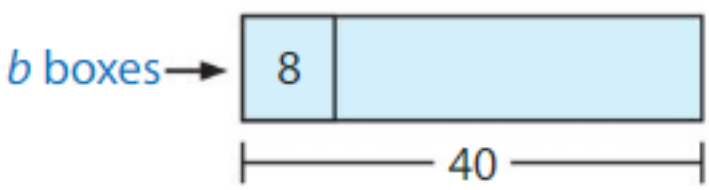
Make a Plan

How will you solve?

- Divide _____ by _____ to find how many _____ the group needs to buy.
- Then multiply the quotient by _____ to find the total cost.

Solve

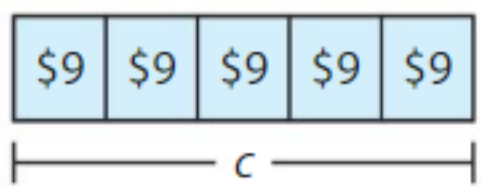
Step 1: How many boxes does the group need to buy?



b is the unknown quotient.

$b = 40 \div 8$ $b =$ ☐

Step 2: Use *b* to find the total cost.



c is the unknown product.

$c = 5 \times 9$ $c =$ ☐

It costs $_____ for 40 burritos.

Show and Grow

1. You make 9 shots in a basketball game. Each shot is worth 2 points. Your friend has the same number of points. All of her shots are worth 3 points. How many shots does your friend make?

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Name _____

Apply and Grow: Practice

Write equations to solve. Use letters to represent the unknown numbers. Check whether your answer is reasonable.

2. You read 3 chapters. Each chapter has 8 pages. Your friend reads the same number of pages. All of her chapters have 6 pages. How many chapters does your friend read?

3. There are 42 players in a basketball tournament. The players are divided into teams of 7 players. The teams are divided equally among 3 basketball courts. How many teams are at each basketball court?

4. You have 2 dream catcher kits. Each kit makes 4 dream catchers. You make all of the dream catchers and sell them for $9 each. How much money do you earn?

5. A box of 4 test tubes costs $6. How much does it cost to buy 20 test tubes?

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Think and Grow: Modeling Real Life

There are 4 crates of milk bottles. Each crate holds 20 bottles. You hand out an equal number of bottles to 10 tables of students. How many bottles of milk does each table of students get?

Understand the problem:

Make a plan:

Solve:

Each table of students gets _____ bottles of milk.

Show and Grow

6. Six groups of hikers have 2 cases of water to share equally. Each case has 30 bottles of water. How many bottles of water does each group get?

7. DIG DEEPER! Newton and Descartes decide to buy 2 pet toys that cost $20 each. Newton saves $5 each week. Descartes saves $3 each week. If they combine their money, how long does it take them to save enough money to buy the toys?

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Name _____

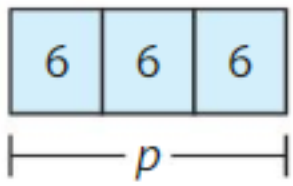
Homework & Practice 9.4

Learning Target: Use the problem-solving plan to solve two-step multiplication and division word problems.

Example There are 3 bags of pretzels with 6 pretzels in each bag. The pretzels are shared equally by 2 students. How many pretzels does each student get?

Think: What do you know? What do you need to find? How will you solve?

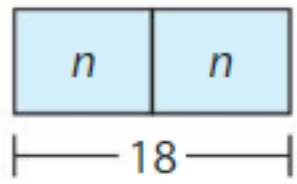
Step 1: How many pretzels are there?



The letter *p* is the unknown product.

$p = 3 \times 6$ $p =$ 18

Step 2: Use *p* to find how many pretzels each student gets.



18 pretzels are divided into 2 groups.

The letter *n* is the unknown quotient.

$n = 18 \div 2$ $n =$ 9

Each student gets 9 pretzels.

Write equations to solve. Use letters to represent the unknown numbers. Check whether your answer is reasonable.

1. Your friend saves $5 each week for 8 weeks. He spends all of the money on 4 toys that each cost the same amount. How much does each toy cost?

2. There are 3 trees. Each tree has 2 birdhouses. Each birdhouse has 4 birds. How many birds are there in all?

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3. There are 54 students at a field day who are divided equally into teams of 6 students. The teams are divided equally among 3 stations. How many teams are at each station?

4. MP **Number Sense** Newton runs an equal number of miles 2 days each week. He runs 8 miles each week. One mile is equal to 4 laps around the track. Which equation can you use to find how many laps Newton runs each day?

$r = 8 \div 4$ $r = 4 \times 4$

$r = 4 \div 4$ $r = 2 \times 4$

5. **Modeling Real Life** Ten classrooms have 3 boxes of whiteboards to share equally. Each box has 30 whiteboards. How many whiteboards does each classroom get?

6. DIG DEEPER! Newton and Descartes decide to buy 2 amusement park tickets that cost $30 each. Newton saves $2 each week. Descartes saves $4 each week. If they combine their money, how long does it take them to save enough money to buy the tickets?

Review & Refresh

Round to the nearest ten to estimate the difference.

7.
$$\begin{array}{r} 58 \\ -\ 27 \\ \hline \end{array} \quad \begin{array}{r} \square \\ -\ \square \\ \hline \square \end{array}$$

8.
$$\begin{array}{r} 763 \\ -\ 415 \\ \hline \end{array} \quad \begin{array}{r} \square \\ -\ \square \\ \hline \square \end{array}$$

9.
$$\begin{array}{r} 686 \\ -\ 24 \\ \hline \end{array} \quad \begin{array}{r} \square \\ -\ \square \\ \hline \square \end{array}$$

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Name _____

Problem Solving: All Operations

9.5

Learning Target: Use the problem-solving plan to solve two-step word problems involving different operations.

Success Criteria:

- I can understand a problem.
- I can make a plan to solve a problem using letters to represent the unknown numbers.
- I can solve a problem using one equation.

FLORIDA STANDARDS
MAFS.3.OA.4.8

Explore and Grow

Use any strategy to solve the problem.

You are making 6 fruit baskets. Each basket has 3 pieces of fruit in it to start. You buy 18 bananas and divide them equally among the baskets. How many pieces of fruit are in each fruit basket now?

There are _____ pieces of fruit in each fruit basket now.

MP **Structure** How can you solve this problem using one equation?

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Think and Grow: One Equation with Two Operations

Example Newton buys 3 DVDs for $4 each. He pays with a $20 bill. What is his change?

You can write one equation with two operations to solve this problem. The equation is shown.

$20 - 3 \times 4 = c$ ← c is the amount of change.

When solving a problem with more than one type of operation, use the rules below.

- First, multiply or divide as you read the equation from left to right.
- Then add or subtract as you read the equation from left to right.

Step 1: Multiply from left to right.

$20 - 3 \times 4 = c$

$20 - \_\_\_\_\_ = c$

Step 2: Subtract from left to right.

$20 - \_\_\_\_\_ = c$

$\_\_\_\_\_ = c$

His change is _____.

Show and Grow

1. There are 8 tomato plants. You pick 9 tomatoes from each plant. You give away 35 of them. Use the equation $8 \times 9 - 35 = p$ to find how many tomatoes you have left.

2. A family buys 5 tickets for a musical. Each ticket costs $9. They spend $28 at the musical on snacks. Write and solve an equation to find how much they spend in all at the musical. Use a to represent the total amount spent.

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Name _____

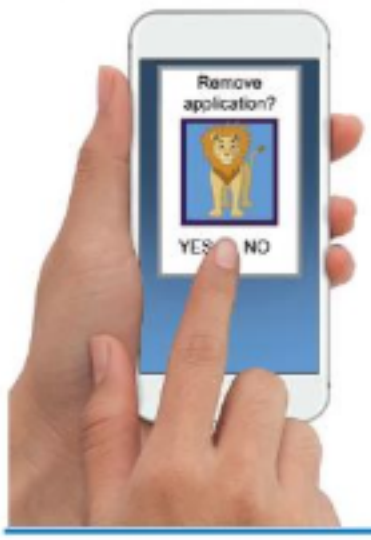
Apply and Grow: Practice

Write an equation to solve. Use a letter to represent the unknown number. Check whether your answer is reasonable.

3. Newton buys 2 movie tickets. Each ticket costs $7. Descartes spends $23 at the movie on snacks. How much money do they spend in all at the movie?

4. Newton has 28 cards. Descartes has 24 cards. Newton divides his cards into 4 equal stacks and gives Descartes one stack. How many cards does Descartes have now?

5. There are 12 apps divided into 3 equal rows on a smartphone. One row of apps is removed. How many apps are left?



6. It costs $240 each week to rent a car. Newton has a coupon that saves him $10 each day he rents the car. How much will it cost him to rent the car for a week with the coupon?

7. **YOU BE THE TEACHER** Your friend says $24 - 6 \div 2 = 9$. Is your friend correct? Explain.

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Think and Grow: Modeling Real Life

Newton has $135. He saves $20 each week for 8 weeks. How much money does he have now?

Understand the problem:

Make a plan:

Solve:

Newton now has _____ .

Show and Grow

8. Your teacher buys 3 packages of napkins for a class party. Each package has 50 napkins. The class uses 79 napkins. How many napkins are left?

9. There are 60 seconds in one minute. It takes you 2 minutes and 16 seconds to run from your home to your friend's home. How many seconds does it take you?

10. A store is selling comic books for $5 each. The store sells 33 superhero comic books and 57 science-fiction comic books. How much money does the store earn?

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Name _____

Homework & Practice 9.5

Learning Target: Use the problem-solving plan to solve two-step word problems involving different operations.

Example Newton has 36 stickers. He divides the stickers into 9 equal groups and gives Descartes one group. How many stickers does Newton have now?

You can write one equation with two operations to solve this problem. The equation is shown.

$36 - 36 \div 9 = n$ ← n is how many stickers Newton has now.

When solving a problem with more than one type of operation, use the rules below.

- First, multiply or divide as you read the equation from left to right.
- Then add or subtract as you read the equation from left to right.

Step 1: Divide from left to right.

$36 - 36 \div 9 = n$

$36 - \underline{4} = n$

Step 2: Subtract from left to right.

$36 - \underline{4} = n$

$\underline{32} = n$

Newton has 32 stickers now.

1. There are 20 math problems divided into 4 equal columns on a worksheet. Your teacher has you cross out one column of problems. Use the equation $20 - 20 \div 4 = p$ to find how many problems are left.

2. Newton has 42 blocks. Descartes has 48 blocks. Newton divides his blocks into 6 equal groups and gives Descartes one group. How many blocks does Descartes have now? Use d to represent how many blocks Descartes has now.

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3. There are 6 palm trees. An islander gathers 8 coconuts from each tree. She gives away 19 of them. How many coconuts does she have now? Write an equation to solve. Use a letter to represent the unknown number. Check whether your answer is reasonable.

4. DIG DEEPER! Find the number that makes $5 \times \_\_\_\_ - 15 = 5$ true. Explain.

5. MP **Number Sense** Which equations are true?

$3 + 5 \times 2 \stackrel{?}{=} 13$ $\quad 20 - 10 \times 2 \stackrel{?}{=} 20$

$36 \div 6 + 3 \stackrel{?}{=} 4$ $\quad 26 - 8 \div 2 \stackrel{?}{=} 22$

6. **Modeling Real Life** A school nurse orders 7 packages of bandages. Each package has 20 bandages. The nurse uses 53 bandages. How many bandages are left?

7. **Modeling Real Life** There are 60 seconds in one minute. You record a video that is 3 minutes and 48 seconds long. How many seconds long is the video?

Review & Refresh

Estimate. Then find the sum. Check whether your answer is reasonable.

8. Estimate: ____

$$\begin{array}{r} 23 \\ 358 \\ +\ 172 \\ \hline \end{array}$$

9. Estimate: ____

$$\begin{array}{r} 202 \\ 64 \\ +\ 545 \\ \hline \end{array}$$

10. Estimate: ____

$$\begin{array}{r} 21 \\ 15 \\ +\ 837 \\ \hline \end{array}$$

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Name _____

Performance Task 9

1. a. You read 120 minutes from Monday through Thursday this week. How many minutes do you read on Thursday? Complete the picture graph for Thursday.

Minutes Read	
Monday	★★★
Tuesday	★★★★
Wednesday	★★
Thursday	
Friday	

Each ★ = 10 minutes.

b. Last week you read 30 minutes each day for 5 days. Your goal this week is to read the same number of minutes as last week. How many minutes do you need to read on Friday to reach your goal? Complete the picture graph for Friday.

2. Write equations to solve. Use letters to represent the unknown numbers. Check whether your answer is reasonable.

a. There are 60 minutes in one hour. Your friend reads 2 hours and 38 minutes during the week. How many minutes does your friend read in all?

b. Your cousin earns 2 stars on her graph each day for 5 days. How many minutes does your cousin read in all?

3. Use the information above. Order the numbers of minutes you, your friend, and your cousin read from least to greatest. The person with the least number of minutes wants to read the same amount as the person with the greatest number of minutes. How many more minutes does the person need to read?

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Multiplication Flip and Find

Directions:

1. Place the Multiplication Flip and Find Cards facedown in the boxes.
2. Players take turns flipping two cards.
3. If your cards show a matching expression and product, then keep the cards. If your cards do not show a matching expression and product, then flip the cards back over.
4. Play until all matches are made.
5. The player with the most matches wins!

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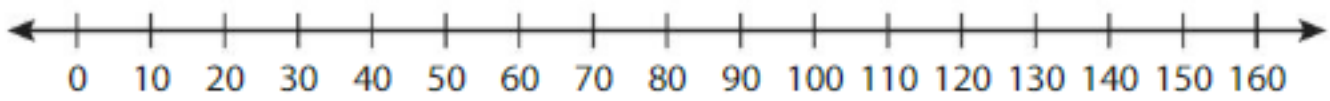
Name _____

Chapter Practice 9

9.1 Use Number Lines to Multiply by Multiples of 10

1. Find 8×20.

Number of jumps: _____ Size of each jump: _____



$8 \times 20 =$ _____

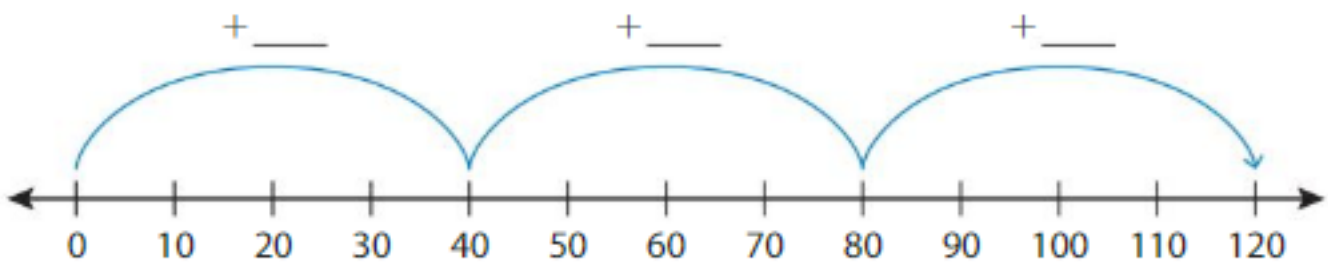
2. Find 7×40.

$7 \times 40 =$ _____

3. Find 30×9.

$30 \times 9 =$ _____

4. MP **Structure** Complete the number line. Then write the multiplication equation for the number line.



_____ × _____ = _____

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9.2 Use Place Value to Multiply by Multiples of 10

Make a quick sketch to find the product.

5. $6 \times 40 =$ _____

6. $5 \times 20 =$ _____

Use place value to find the product.

7. $4 \times 50 = 4 \times$ _____ tens

$4 \times 50 =$ _____ tens

$4 \times 50 =$ _____

8. $3 \times 60 = 3 \times$ _____ tens

$3 \times 60 =$ _____ tens

$3 \times 60 =$ _____

9. $7 \times 70 = 7 \times$ _____ tens

$7 \times 70 =$ _____ tens

$7 \times 70 =$ _____

10. $9 \times 80 = 9 \times$ _____ tens

$9 \times 80 =$ _____ tens

$9 \times 80 =$ _____

Find the product.

11. $2 \times 60 =$ _____

12. $8 \times 40 =$ _____

13. $5 \times 90 =$ _____

14. **Modeling Real Life** You practice ballet for 30 minutes every day. How many minutes do you practice in one week?

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9.3 Use Properties to Multiply by Multiples of 10

15. Use the Associative Property of Multiplication to find 4×90.

$4 \times 90 = 4 \times (\_\_\_\_ \times 10)$

$4 \times 90 = (4 \times \_\_\_\_) \times 10$

$4 \times 90 = \_\_\_\_ \times 10$

$4 \times 90 = \_\_\_\_$

16. Use the Distributive Property to find 8×20.

$8 \times 20 = 8 \times (10 + \_\_\_\_)$

$8 \times 20 = (8 \times 10) + (8 \times \_\_\_\_)$

$8 \times 20 = \_\_\_\_ + \_\_\_\_$

$8 \times 20 = \_\_\_\_$

Use properties to find the product.

17. $7 \times 20 = \_\_\_\_$

18. $5 \times 70 = \_\_\_\_$

Find the missing factor.

19. $\_\_\_\_ \times 20 = 180$

20. $7 \times \_\_\_\_ = 350$

21. $\_\_\_\_ \times 80 = 240$

22. **Open-Ended** Write three expressions equal to 120.

$\_\_\_\_ \times \_\_\_\_$

$\_\_\_\_ \times \_\_\_\_$

$\_\_\_\_ \times \_\_\_\_$

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English Spanish

9.4 Problem Solving: Multiplication and Division

Write equations to solve. Use letters to represent the unknown numbers.
Check whether your answer is reasonable.

23. There are 2 bookcases. Each bookcase has 3 shelves of 5 books. How many books are there in all?

24. Four veterinarians share 2 boxes of ear wipes. Each box has 20 packs of ear wipes. How many packs of ear wipes does each veterinarian get?

9.5 Problem Solving: All Operations

Write an equation to solve. Use a letter to represent the unknown number.
Check whether your answer is reasonable.

25. Newton has 30 beads. Descartes has 22 beads. Newton divides his beads into 3 equal groups and gives Descartes one group. How many beads does Descartes have now?

26. It costs $166 to rent a bounce house for 7 hours. Descartes has a coupon that saves him $5 each hour he rents the bounce house. How much will it cost him to rent the bounce house for 7 hours with the coupon?

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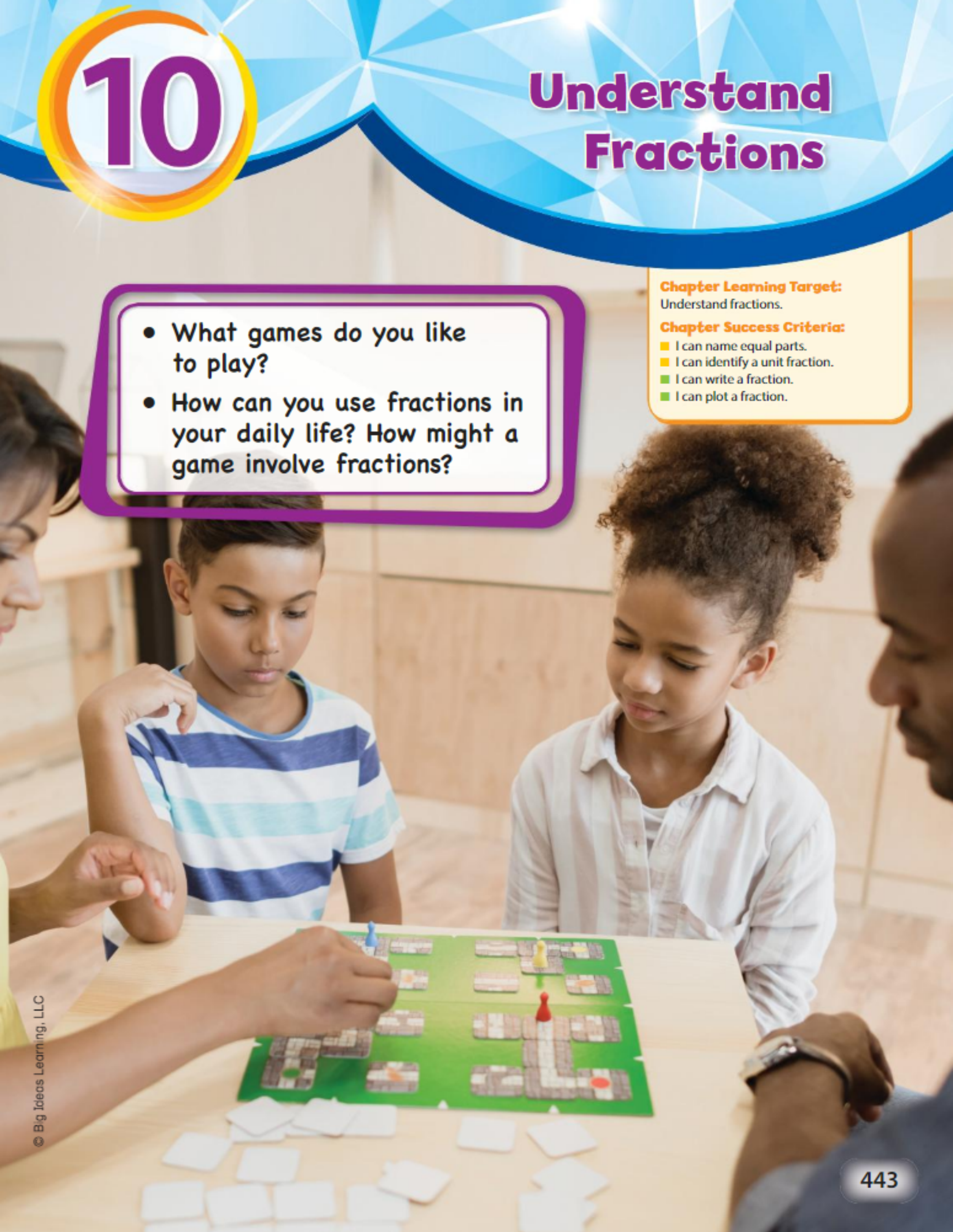
English Spanish

10 Understand Fractions

- What games do you like to play?
- How can you use fractions in your daily life? How might a game involve fractions?

Chapter Learning Target:
Understand fractions.

Chapter Success Criteria:
- I can name equal parts.
- I can identify a unit fraction.
- I can write a fraction.
- I can plot a fraction.



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Name _____

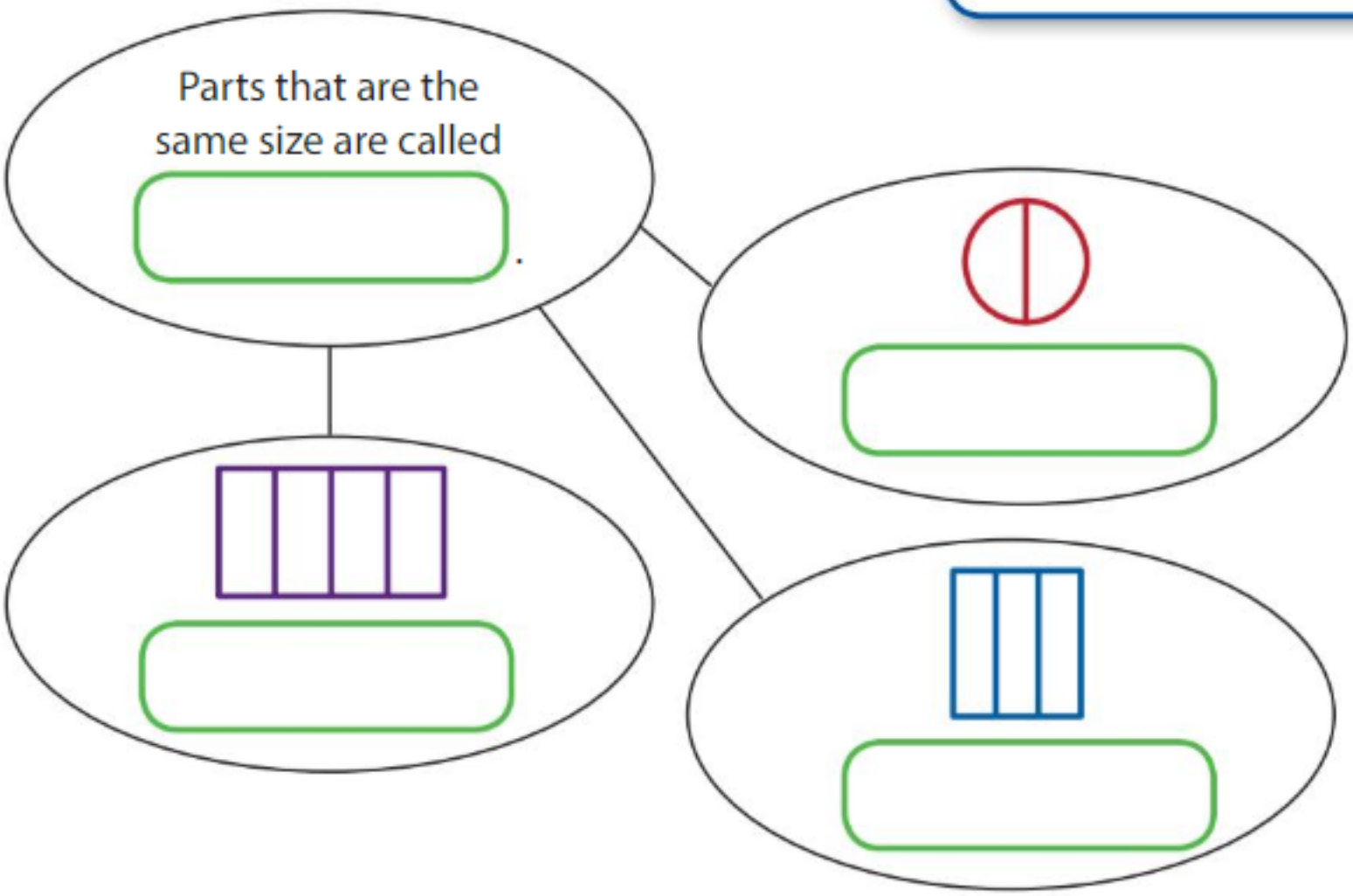
10 Vocabulary

Review Words

equal shares
fourths
halves
thirds

Organize It

Use the review words to complete the graphic organizer.



Define It

Use your vocabulary cards to complete the definition.

1. numerator: tells how many _____ parts are being _____
2. denominator: tells how many _____ parts are in a _____
3. eighths: There are _____ equal _____ in the whole.
4. sixths: There are _____ equal _____ in the whole.

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Chapter 10 Vocabulary Cards

denominator

eighths

fraction

numerator

sixths

unit fraction

whole

whole numbers

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The whole is divided into eight equal parts, or **eighths**.

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The part of a fraction that represents how many equal parts are in a whole.

$\frac{1}{6}$ ← denominator

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The part of a fraction that represents how many equal parts are being counted.

$\frac{1}{6}$ ← numerator

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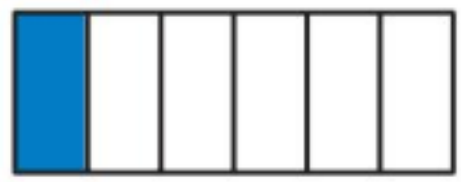
A number that represents part of a whole

$\frac{1}{6}$



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Represents one equal part of a whole

The fraction $\frac{1}{6}$ is a unit fraction.

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The whole is divided into six equal parts, or **sixths**.

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The numbers 0, 1, 2, 3, and so on

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All of the parts of one shape or group

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English Spanish

Name _____

Equal Parts of a Whole 10.1

Learning Target: Identify equal parts of a whole and name them.

Success Criteria:

- I can tell whether shapes show equal or unequal parts.
- I can name equal parts.
- I can divide a shape into equal parts.

FLORIDA STANDARDS
MAFS.3.NF.1.1
MAFS.3.G.1.2

Explore and Grow

Use the name of the equal parts to divide each rectangle. Write the number of equal parts for each rectangle.

halves

_____ equal parts

thirds

_____ equal parts

fourths

_____ equal parts

sixths

_____ equal parts

MP **Repeated Reasoning** How many equal parts are in a rectangle that is divided into eighths? Explain.

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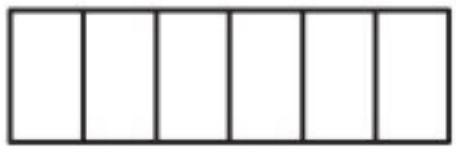
Think and Grow: Equal Parts of a Whole

The rectangle represents a whole. A **whole** is all of the parts of one shape or group.

2 equal parts, or halves

3 equal parts, or thirds

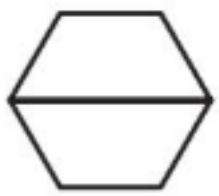
4 equal parts, or fourths



6 equal parts, or **sixths**

8 equal parts, or **eighths**

Example Tell whether the shape shows equal parts or unequal parts. If the shape shows equal parts, then name them.



_____ parts

_____

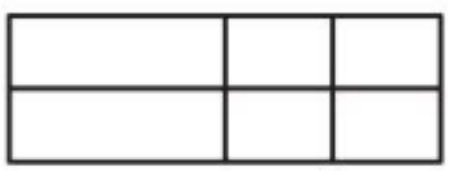
_____ parts

_____

Show and Grow

Tell whether the shape shows equal parts or unequal parts. If the shape shows equal parts, then name them.

1.



_____ parts

_____

2.

_____ parts

_____

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Name _____

Apply and Grow: Practice

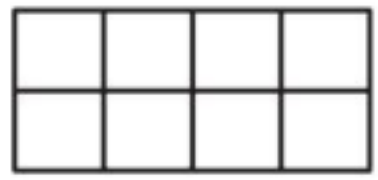
Tell whether the shape shows equal parts or unequal parts. If the shape shows equal parts, then name them.

3.

_____ parts

_____

4.



_____ parts

_____

5.

_____ parts

_____

6.

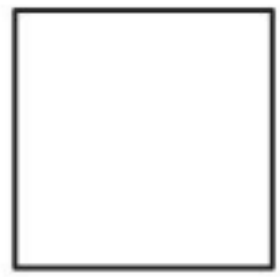
_____ parts

_____

7. Divide the rectangle into 2 equal parts. Then name the equal parts.

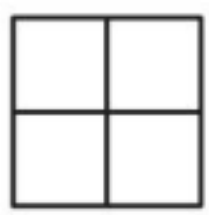
_____

8. Divide the square into 6 equal parts. Then name the equal parts.



_____

9. YOU BE THE TEACHER Newton says he divided each shape into fourths. Is he correct? Explain.



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Think and Grow: Modeling Real Life

Three students want to share a whiteboard to solve math problems. Each student wants to use an equal part of the board. Should the students divide the whiteboard into halves, thirds, or fourths?

Draw to show:

The students should divide the whiteboard into _____ .

Show and Grow

10. Six friends want to share an egg casserole. Each friend wants an equal part. Should the friends cut the casserole into halves, fourths, or sixths?

11. Eight students need to sit around two tables. Each student needs an equal part of a table. Should the tables be divided into thirds, fourths, or sixths?

12. DIG DEEPER! Ten friends want to share five rectangular sheets of paper. Each friend wants an equal part. Should the friends cut the sheets of paper into halves or thirds? Explain.

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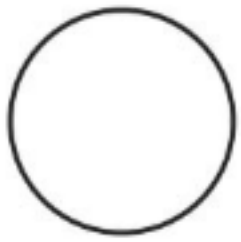
Name _____

Homework & Practice 10.1

Learning Target: Identify equal parts of a whole and name them.



1 equal part, or whole

2 equal parts, or halves

3 equal parts, or thirds

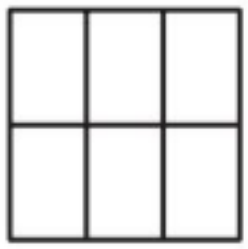
4 equal parts, or fourths

6 equal parts, or sixths

8 equal parts, or eighths

Tell whether the shape shows equal parts or unequal parts. If the shape shows equal parts, then name them.

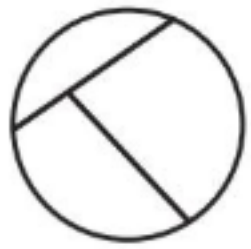
1.



_____ parts

_____

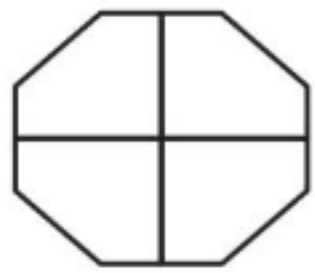
2.



_____ parts

_____

3.



_____ parts

_____

4.

_____ parts

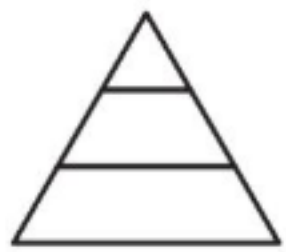
_____

5.

_____ parts

_____

6.



_____ parts

_____

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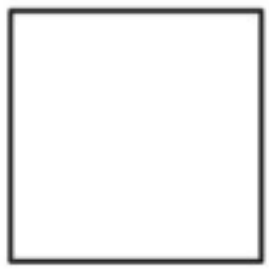
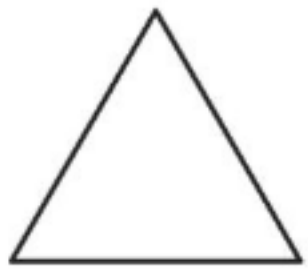
7. Divide the square into 3 equal parts. Then name the equal parts.



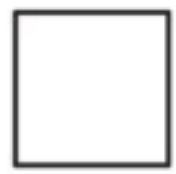
_____

8. Divide the triangle into 2 equal parts. Then name the equal parts.



_____

9. MP **Patterns** Use the pattern to divide the square into equal parts. Name the equal parts.



_____

10. **Modeling Real Life** Eight friends want to share a lasagna. Each friend wants an equal part. Should the friends cut the lasagna into fourths, sixths, or eighths?

11. DIG DEEPER! Twelve friends want to pull weeds from three community gardens. Each friend wants to pull weeds from an equal part. Should the friends divide each garden into thirds, fourths, or sixths?

Review & Refresh

Find the product.

12. $2 \times (3 \times 3) =$ _____

13. $(4 \times 2) \times 9 =$ _____

14. $2 \times (8 \times 5) =$ _____

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English Spanish

Name _____

Understand a Unit Fraction 10.2

Learning Target: Identify and write a unit fraction.

Success Criteria:

- I can identify a unit fraction.
- I can write a unit fraction.
- I can explain what a unit fraction is.
- I can explain what the numerator and denominator are in a fraction.

FLORIDA STANDARDS

MAFS.3.NF.1.1
MAFS.3.G.1.2

Explore and Grow

Match each shaded part to its name.

one-sixth

one-fourth

one-half

MP **Precision** What is the same about each shape? What is different?

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Think and Grow: Understand a Unit Fraction

A **fraction** is a number that represents part of a whole.

$\frac{1}{4}$

The **numerator** represents how many equal parts are being counted.

The **denominator** represents how many equal parts are in a whole.

A **unit fraction** represents one equal part of a whole.

Example What fraction of the whole is shaded?

There are _____ equal parts in the whole.

_____ of the equal parts is shaded.

$\frac{\square}{\square}$ is shaded.

Show and Grow

What fraction of the whole is shaded?

1.

There are _____ equal parts in the whole.

_____ of the equal parts is shaded.

$\frac{\square}{\square}$ is shaded.

2.

$\frac{\square}{\square}$ is shaded.

3.

$\frac{\square}{\square}$ is shaded.

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English Spanish

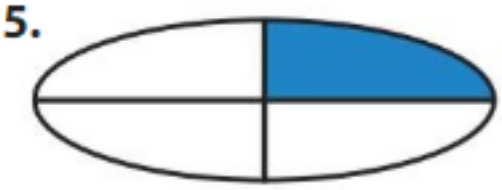
Name _____

Apply and Grow: Practice

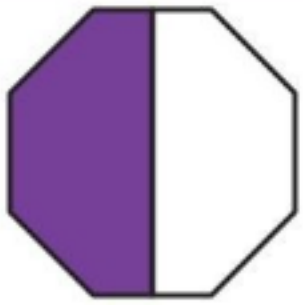
What fraction of the whole is shaded?

4.

$\frac{\square}{\square}$ is shaded.

5. 

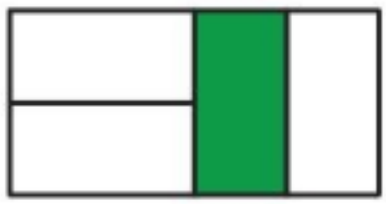
$\frac{\square}{\square}$ is shaded.

6. 

$\frac{\square}{\square}$ is shaded.

7.

$\frac{\square}{\square}$ is shaded.

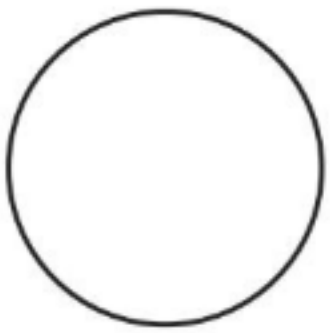
8. 

$\frac{\square}{\square}$ is shaded.

9.

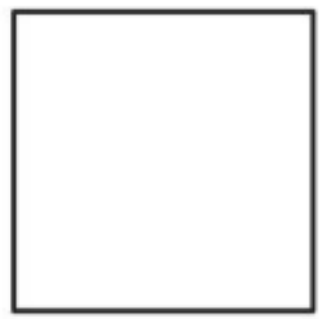
$\frac{\square}{\square}$ is shaded.

10. Divide the circle into 4 equal parts. Shade one part. What fraction of the whole is shaded?



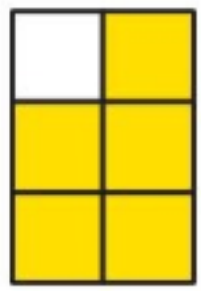
$\frac{\square}{\square}$ is shaded.

11. Divide the square into 3 equal parts. Shade one part. What fraction of the whole is shaded?



$\frac{\square}{\square}$ is shaded.

12. **YOU BE THE TEACHER** Descartes says the part he shaded can be represented by a unit fraction. Is he correct? Explain.



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Think and Grow: Modeling Real Life

For which nation's flag can you use a unit fraction to represent the amount of green? Explain.

Flag of _____

Explain:

Nation	Flag
Nigeria	
Mauritius	
Seychelles	

Show and Grow

13. For which nation's flag can you use a unit fraction to represent the amount of red? Explain.

Nation	Flag
Bahrain	
Austria	
France	

14. You paint a plate that has 4 equal parts. You paint two parts orange and one part red. You paint the rest of the plate yellow. What fraction of the plate is yellow?

15. DIG DEEPER! Draw a quilt square that has blue, red, and white parts, but only the blue part can be represented by a unit fraction.

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English Spanish

Name _____

Homework & Practice 10.2

Learning Target: Identify and write a unit fraction.

Example What fraction of the whole is shaded?

There are 4 equal parts in the whole.

1 of the equal parts is shaded.

$\frac{1}{4}$ is shaded.

What fraction of the whole is shaded?

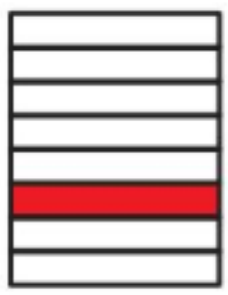
1.

There are _____ equal parts in the whole.

_____ of the equal parts is shaded.

$\frac{\square}{\square}$ is shaded.

2.



$\frac{\square}{\square}$ is shaded.

3.

$\frac{\square}{\square}$ is shaded.

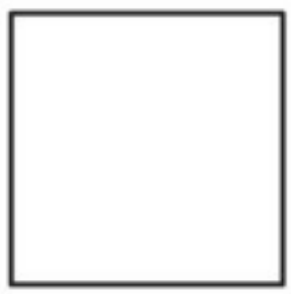
4.

$\frac{\square}{\square}$ is shaded.

5.

$\frac{\square}{\square}$ is shaded.

6. Divide the square into 6 equal parts. Shade one part. What fraction of the whole is shaded?



$\frac{\square}{\square}$ is shaded.

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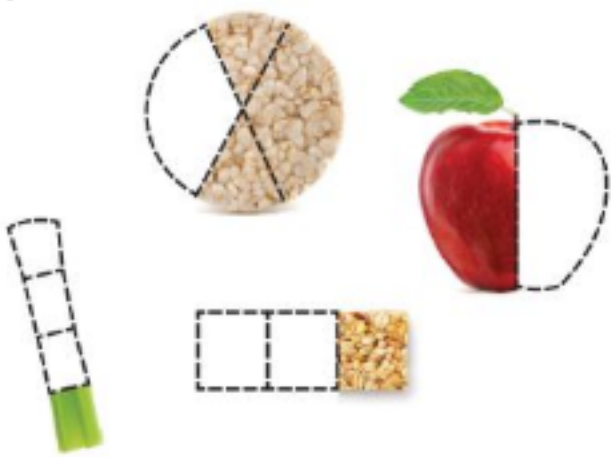
7. MP **Precision** Did Descartes label the shaded part correctly? Explain.

8. DIG DEEPER! You want to make a card. You fold a sheet of paper in half, then in half again. What fraction of the sheet of paper represents the front of the card?

9. **Writing** Explain how you know Newton ate $\frac{1}{3}$ of his taco.

10. **Modeling Real Life** For which foods can you use a unit fraction to represent the amount eaten? Explain.



11. **Modeling Real Life** You prepare a rectangular dip tray that has 6 equal parts. Three parts are hummus, one part is *queso*, and one part is guacamole. The rest of the tray is salsa. What fraction of the tray is salsa?

Review & Refresh

Compare.

12. $4 \times 6 \bigcirc 6 \times 6$

13. $6 \times 5 \bigcirc 4 \times 5$

14. $42 \bigcirc 6 \times 7$

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English Spanish

Name _____

Write Fractions of a Whole

10.3

Learning Target: Identify and write a fraction.

Success Criteria:

- I can identify a fraction.
- I can write a fraction.

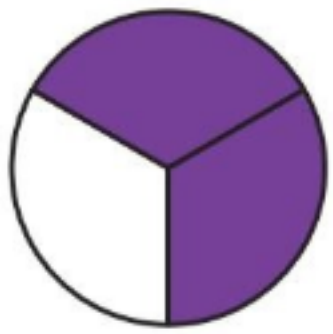
FLORIDA STANDARDS

MAFS.3.NF.1.1
MAFS.3.G.1.2

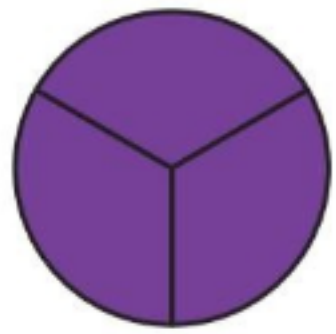
Explore and Grow

Write a fraction for the shaded part of each whole.

$\frac{\square}{\square}$



$\frac{\square}{\square}$



$\frac{\square}{\square}$

MP **Reasoning** All of the equal parts of a shape are shaded. What do you know about the numerator and denominator of the fraction that describes the shaded parts?

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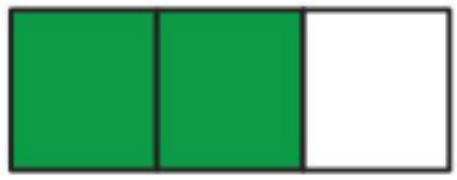
Think and Grow: Fractions of a Whole

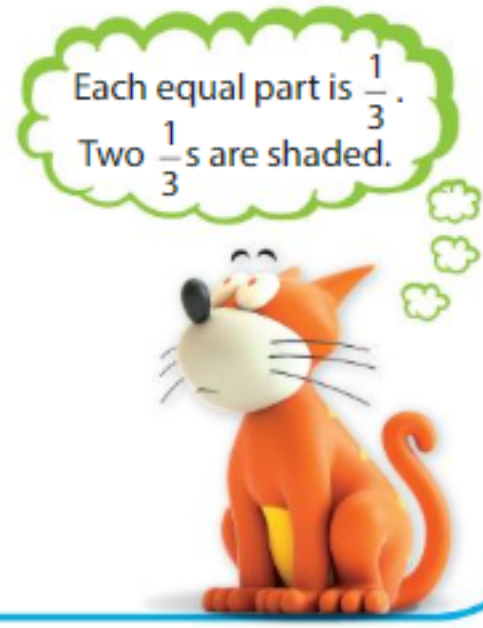
Example What fraction of the whole is shaded?



There are _____ equal parts in the whole.

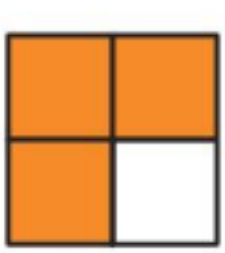
_____ of the equal parts are shaded.

$\frac{\square}{\square}$ is shaded.



Show and Grow

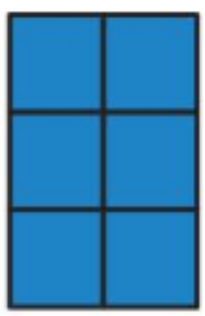
What fraction of the whole is shaded?

1. 

There are _____ equal parts in the whole.

_____ of the equal parts are shaded.

$\frac{\square}{\square}$ is shaded.

2. 

There are _____ equal parts in the whole.

_____ of the equal parts are shaded.

$\frac{\square}{\square}$ is shaded.

3.

$\frac{\square}{\square}$ is shaded.

4.

$\frac{\square}{\square}$ is shaded.

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English Spanish

Name _____

Apply and Grow: Practice

What fraction of the whole is shaded?

5.

□/□ is shaded.

6.

□/□ is shaded.

7.

□/□ is shaded.

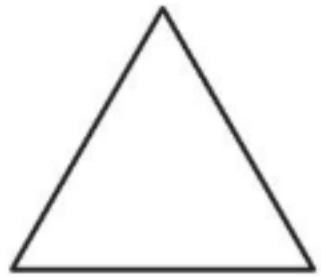
8.

□/□ is shaded.

9. Divide the rectangle into eighths. Shade three of the equal parts. What fraction of the whole is shaded?

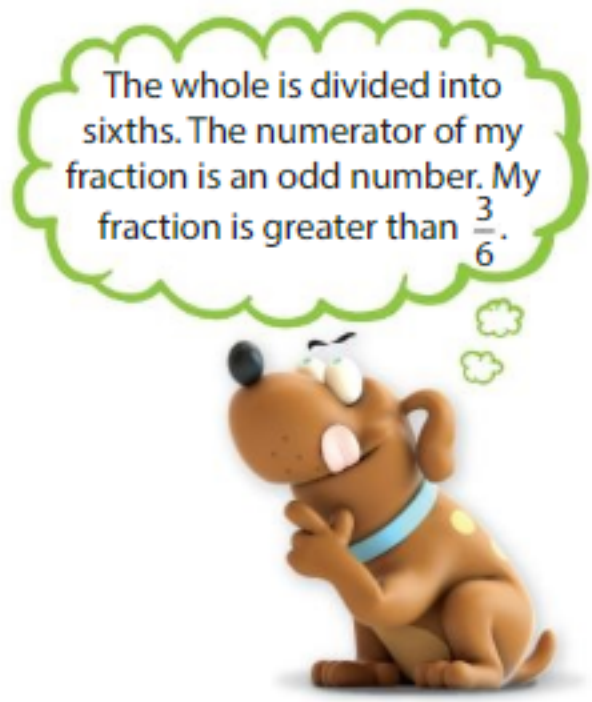
□/□ is shaded.

10. Divide the triangle in half. Shade two of the equal parts. What fraction of the whole is shaded?



□/□ is shaded.

11. DIG DEEPER! Newton is thinking of a fraction. What is his fraction?



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Think and Grow: Modeling Real Life

You are making a stained glass window that has 6 equal parts. You finish 1 part of the window. What fraction of the window do you have left to finish?

Draw to show:

You have $\frac{\square}{\square}$ of the window left to finish.

Show and Grow

12. You color 8 equal parts of a banner for a school play. You write the title in 4 of the parts. What fraction of the banner does *not* have the title?

13. A fruit tray has 4 equal parts. One part of the tray has grapes. Another part of the tray has pineapple. The rest of the tray has watermelon. What fraction of the tray has watermelon?

14. DIG DEEPER! You divide a flower bed into equal parts. You plant sunflowers in 1 part. You plant daisies in the other 2 parts. What fraction of the flower bed has sunflowers?

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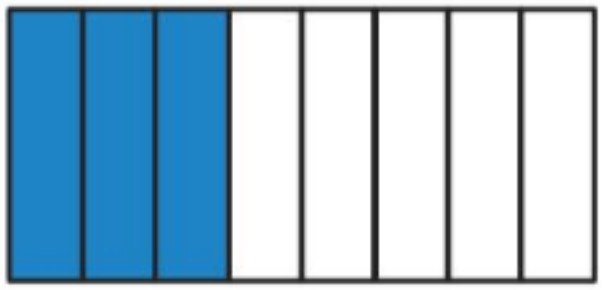
Name _____

Homework & Practice 10.3

Learning Target: Identify and write a fraction.

Example What fraction of the whole is shaded?



There are 8 equal parts in the whole.

3 of the equal parts are shaded.

$\frac{3}{8}$ is shaded.

What fraction of the whole is shaded?

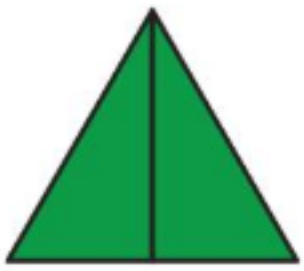
1.

There are _____ equal parts in the whole.

_____ of the equal parts are shaded.

$\frac{\square}{\square}$ is shaded.

2.



$\frac{\square}{\square}$ is shaded.

3.

$\frac{\square}{\square}$ is shaded.

4.

$\frac{\square}{\square}$ is shaded.

5.

$\frac{\square}{\square}$ is shaded.

6. Divide the rectangle into sixths. Shade 2 of the equal parts. What fraction of the whole is shaded?

$\frac{\square}{\square}$ is shaded.

7. Divide the square into thirds. Shade 2 of the equal parts. What fraction of the whole is shaded?

$\frac{\square}{\square}$ is shaded.

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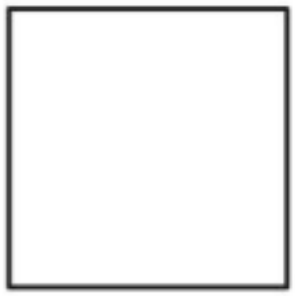
8. Open-Ended Divide and shade the square to show more than $\frac{4}{8}$, but less than $\frac{8}{8}$. What fraction of the whole is shaded?



$\frac{\square}{\square}$ is shaded.

9. Reasoning A pool has 4 swim lanes. Swimmers are using all of the lanes. Draw and shade a model that represents the lanes being used. Then write a fraction for your model.

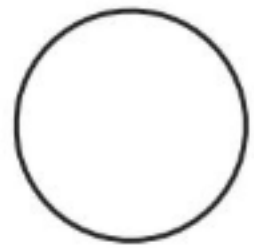
$\frac{\square}{\square}$ is shaded.

10. Patterns What fraction of each circle is shaded? Think: What do you notice about the numerators? Model and write the next fraction.

$\frac{\square}{6}$

$\frac{\square}{6}$

$\frac{\square}{6}$



$\frac{\square}{6}$

11. Modeling Real Life A vegetable tray has 8 equal parts. Three parts have peppers. One part has broccoli. Another part has tomatoes. The rest of the tray has carrots. What fraction of the tray has carrots?

12. DIG DEEPER! You divide an art canvas into equal parts. You paint 1 part blue, 2 parts orange, and the last part yellow. What fraction of the canvas is painted orange?

Review & Refresh

Complete the fact family.

13. $6 \times \_\_\_\_ = 42$ $\quad 42 \div 7 = \_\_\_\_$

$\_\_\_\_ \times 6 = 42$ $\quad 42 \div \_\_\_\_ = 7$

14. $9 \times \_\_\_\_ = 9$ $\quad 9 \div 1 = \_\_\_\_$

$\_\_\_\_ \times 9 = 9$ $\quad 9 \div \_\_\_\_ = 1$

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Name _____

10.4 Fractions on a Number Line: Less Than 1

Learning Target: Plot fractions less than 1 on a number line.

Success Criteria:

- I can divide a number line into equal parts.
- I can label fractions on a number line.
- I can plot a fraction.

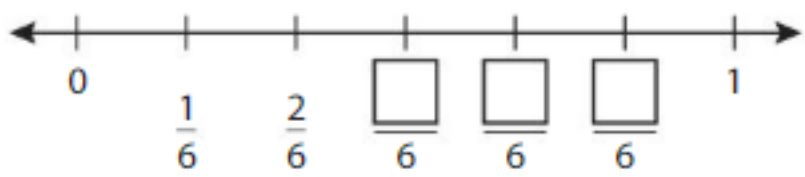
FLORIDA STANDARDS

MAFS.3.NF.1.1
MAFS.3.NF.1.2a
MAFS.3.NF.1.2b

Explore and Grow

Use the $\frac{1}{6}$ Fraction Strips to complete the fractions on the number line.

Then plot $\frac{3}{6}$ on the number line.



MP **Precision** Plot $\frac{6}{6}$ on the number line. What do you notice? Explain.

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Think and Grow: Fractions on a Number Line: Less Than 1

Every number on a number line represents a distance from 0. The distance from 0 to 1 is one whole. A number line can be divided into any number of equal parts or distances.

Example Plot $\frac{3}{4}$ on the number line.

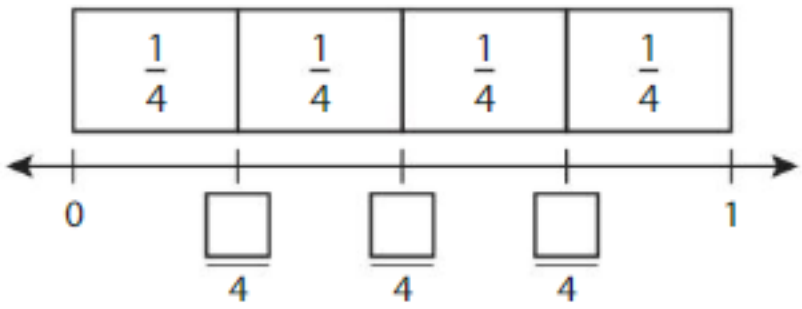
Step 1: Divide the length from 0 to 1 into _____ equal parts.

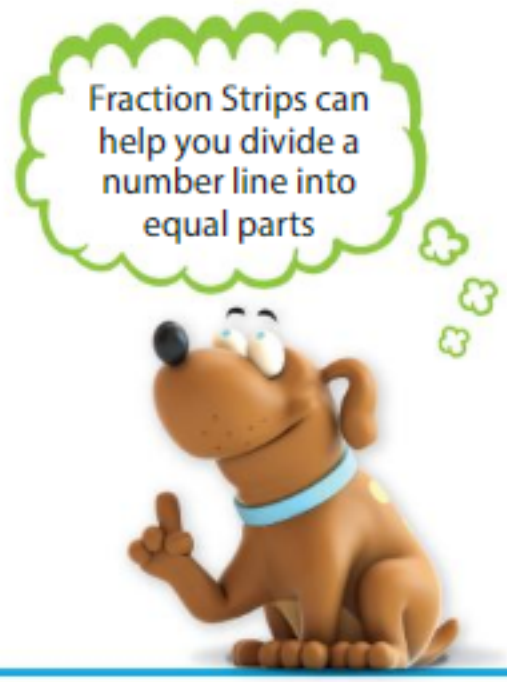
Step 2: Label each tick mark on the number line.

Think: One $\frac{1}{4}$ is $\frac{1}{4}$. Two $\frac{1}{4}$s are $\frac{2}{4}$.

Step 3: Plot $\frac{3}{4}$ on the number line.

Think: _____ $\frac{1}{4}$s are $\frac{3}{4}$.



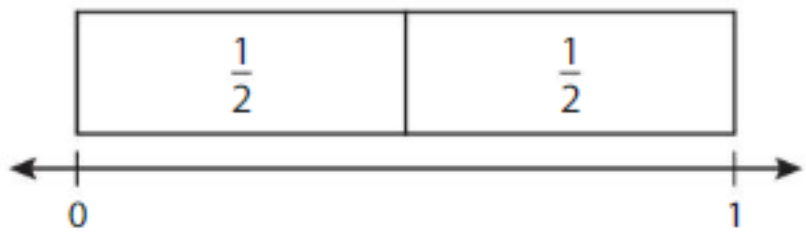


Show and Grow

Plot the fraction on the number line.

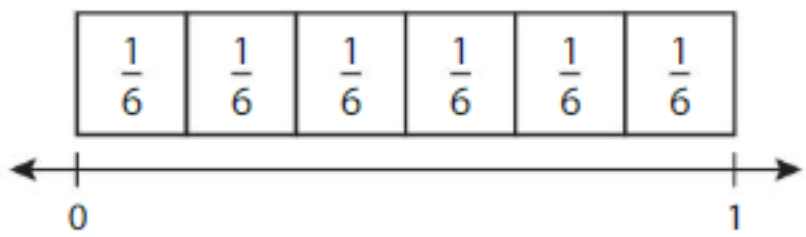
1. $\frac{1}{2}$

_____ $\frac{\square}{\square}$ is $\frac{1}{2}$.



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

_____ $\frac{\square}{\square}$ s are $\frac{2}{6}$.



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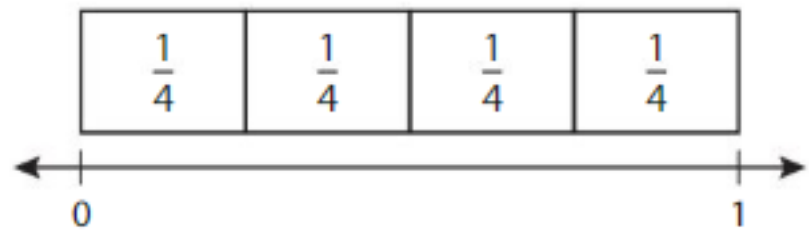
Name _____

Apply and Grow: Practice

Plot the fraction on a number line.

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

_____ $\frac{\square}{\square}$s are $\frac{2}{4}$.



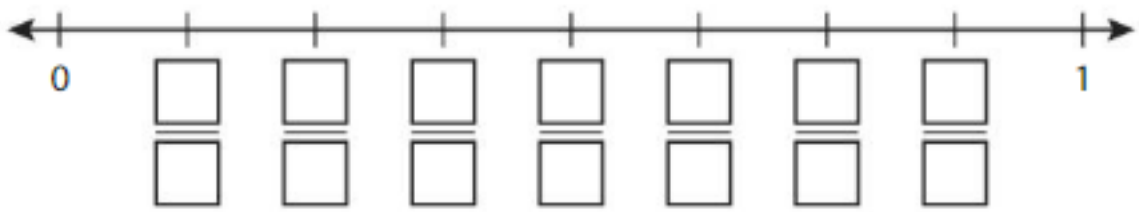
4. $\frac{5}{6}$

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

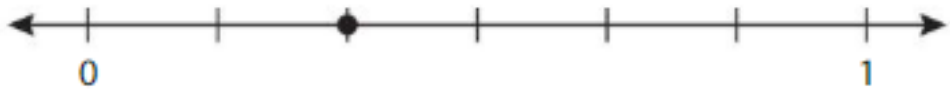
6. $\frac{6}{8}$

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

8. MP **Structure** Complete the number line.



9. **Writing** How are the number lines the same? How are they different?



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Think and Grow: Modeling Real Life

Three laps around a walking trail is 1 mile. How many laps does it take you to walk $\frac{2}{3}$ mile?

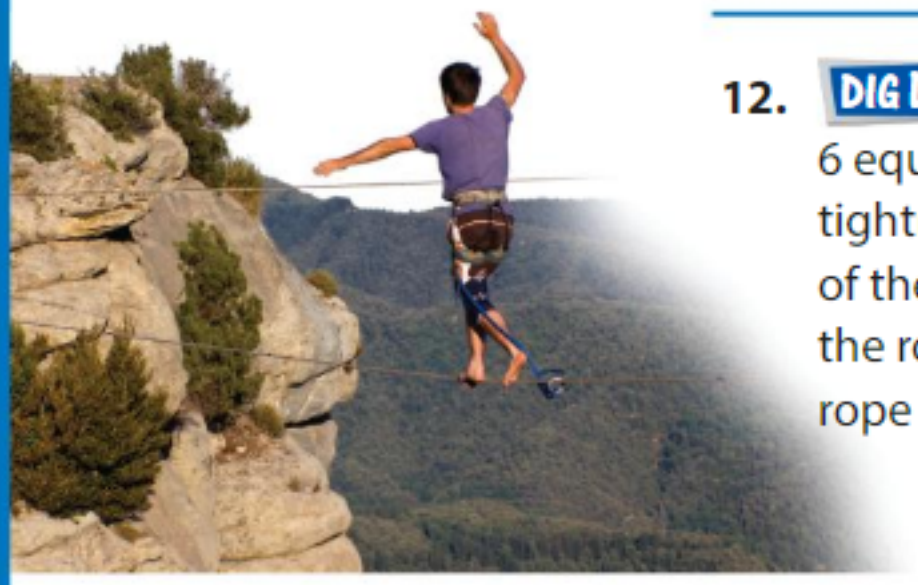
Model:

You need to walk _____ laps to walk $\frac{2}{3}$ mile.

Show and Grow

10. You follow a recipe and make four servings. How many servings can you make using $\frac{1}{4}$ of each ingredient in the recipe?

11. **DIG DEEPER!** A gymnast needs to take 8 equal-sized steps to get from one end of a balance beam to the other. She starts on the left end of the beam and takes 6 steps. What fraction of the beam is behind her? What fraction of the beam is in front of her?



12. **DIG DEEPER!** A tightrope walker needs to take 6 equal-sized steps to get from one end of a tightrope to the other. He starts on the left side of the rope and takes 5 steps. What fraction of the rope is behind him? What fraction of the rope is in front of him?

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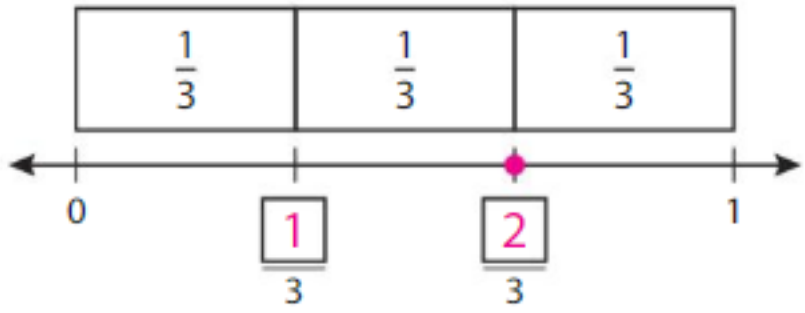
Name _____

Homework & Practice 10.4

Learning Target: Plot fractions less than 1 on a number line.

Example Plot $\frac{2}{3}$ on the number line.

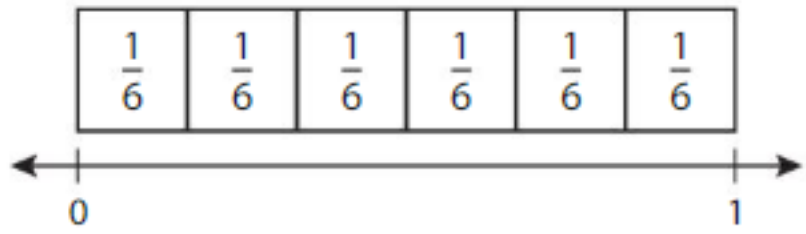
2 $\frac{1}{3}$s are $\frac{2}{3}$.



Plot the fraction on a number line.

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

___ $\frac{\square}{\square}$s are $\frac{4}{6}$.



2. $\frac{3}{8}$

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

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

5. $\frac{5}{8}$

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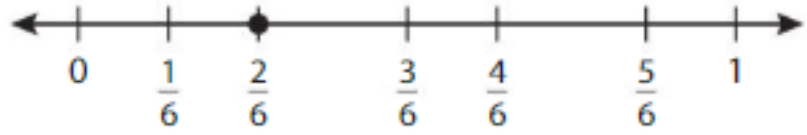
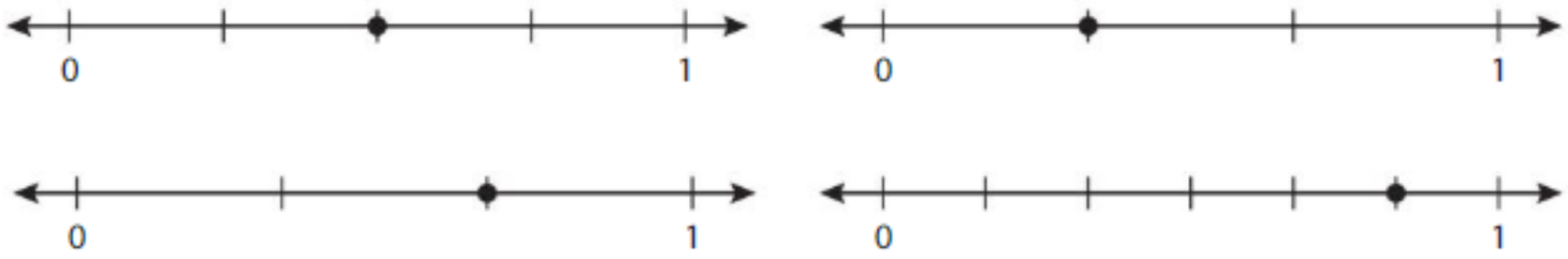
6. **Logic** What fraction is located halfway between 0 and 1?

7. **YOU BE THE TEACHER** Your friend draws a number line and plots $\frac{2}{6}$. Is your friend correct? Explain.



8. **Structure** Which number line shows $\frac{2}{3}$?



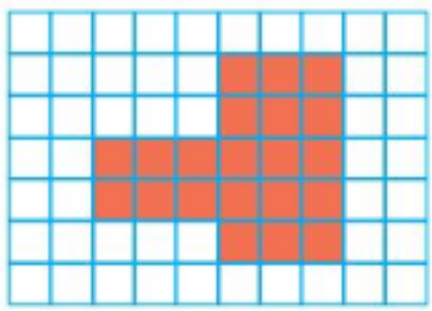
9. **Modeling Real Life** Four laps around a soccer field is 1 mile. How many laps does it take you to run $\frac{3}{4}$ mile?

10. **DIG DEEPER!** A diver needs to take 8 equal-sized steps before diving into the pool. She starts at the beginning of the diving board and takes 6 steps. What fraction of the diving board is behind the diver? What fraction of the diving board is in front of the diver?

Review & Refresh

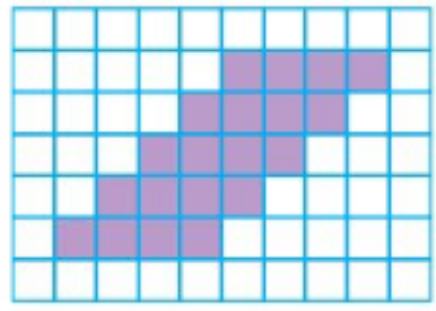
Find the area of the shape.

11.



Area = _____ square units

12.



Area = _____ square units

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Name _____

Fractions on a Number Line: Greater Than 1

10.5

Learning Target: Plot fractions greater than 1 on a number line.

Success Criteria:

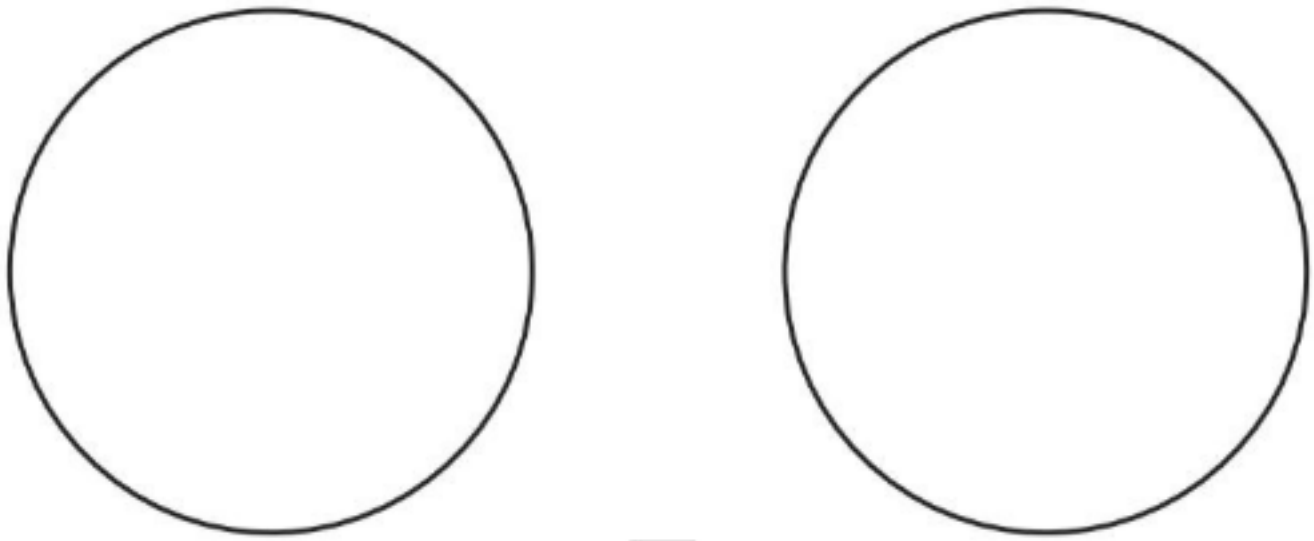
- I can divide a number line into equal parts.
- I can label fractions on a number line.
- I can plot a fraction.

FLORIDA STANDARDS

MAFS.3.NF.1.1
MAFS.3.NF.1.2a
MAFS.3.NF.1.2b

Explore and Grow

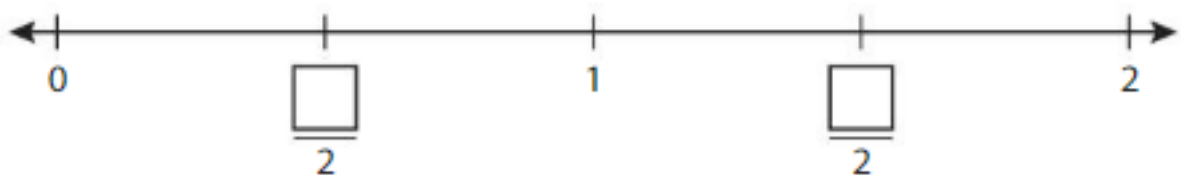
Divide each circle into halves. Shade three halves. Write the fraction.



$\frac{\square}{\square}$

Precision Complete the fractions on the number line.

Plot $\frac{3}{2}$ on the number line. What do you notice? Explain.



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Think and Grow: Fractions on a Number Line: Greater Than 1

When the numerator is greater than the denominator, the fraction is greater than one whole.

Each square is one whole. Six $\frac{1}{4}$s are shaded.
So, $\frac{6}{4}$ is shaded.

You can show fractions greater than one whole on a number line.

Example Plot $\frac{6}{4}$ on the number line.

The numbers 0, 1, 2, 3, and so on are called **whole numbers**.

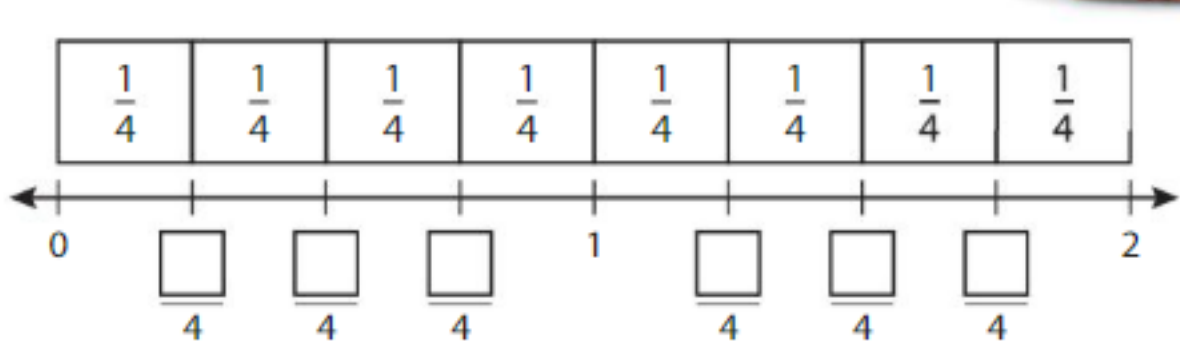
Step 1: Divide each whole into _____ equal parts.

Step 2: Label each tick mark on the number line.

Think: One $\frac{1}{4}$ is $\frac{1}{4}$. Two $\frac{1}{4}$s are $\frac{2}{4}$.

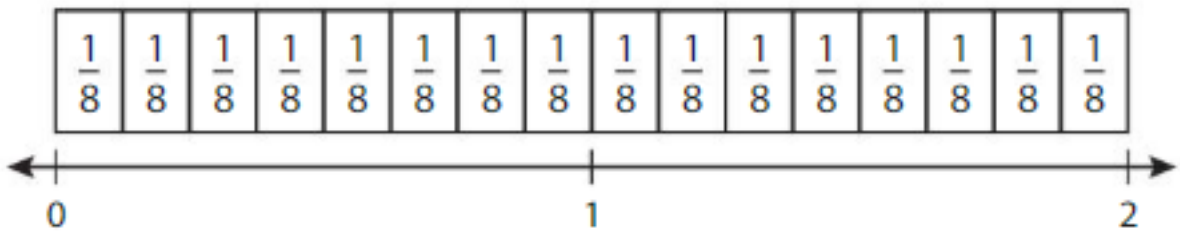
Step 3: Plot $\frac{6}{4}$.

Think: _____ $\frac{1}{4}$s are $\frac{6}{4}$.



Show and Grow

1. Plot $\frac{15}{8}$ on the number line.



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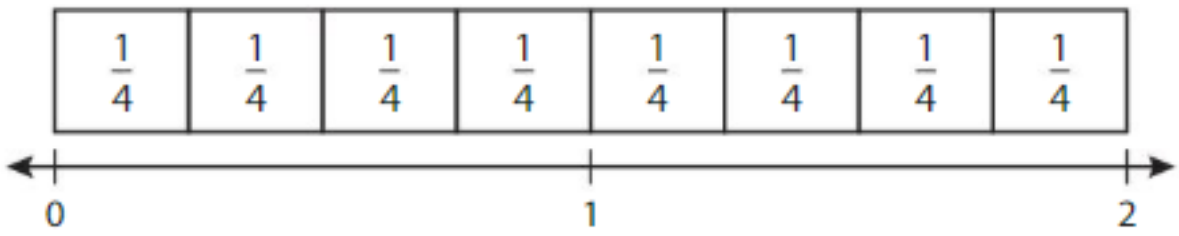
Name _____

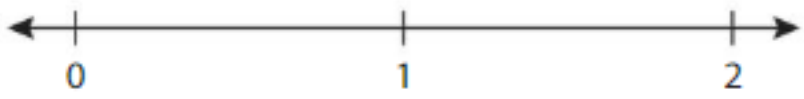
Apply and Grow: Practice

Plot the fraction on the number line.

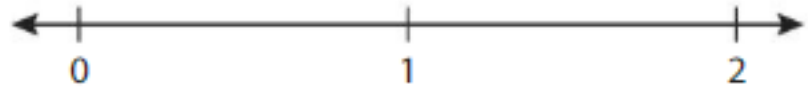
2. $\frac{7}{4}$



3. $\frac{9}{6}$

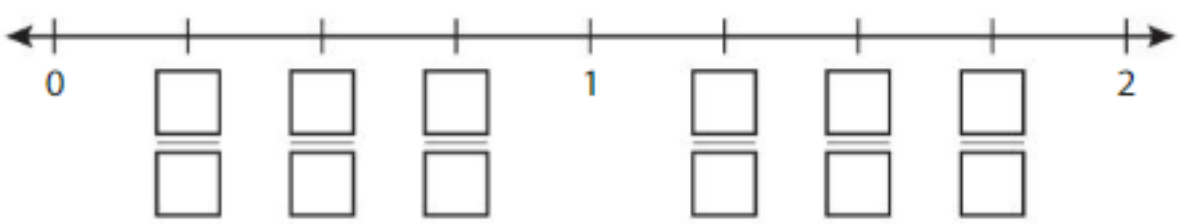


4. $\frac{5}{3}$

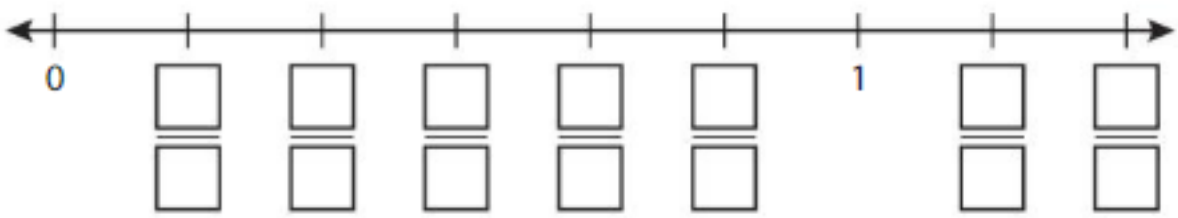


Structure Complete the number line.

5.

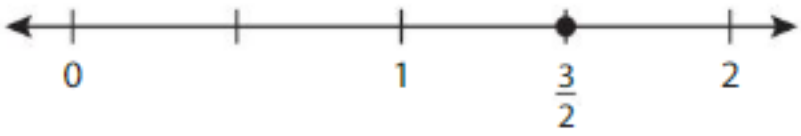


6.

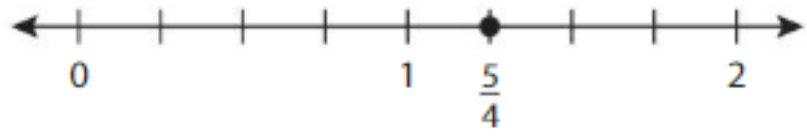


Number Sense Draw and shade a model for the plotted fraction.

7.



8.



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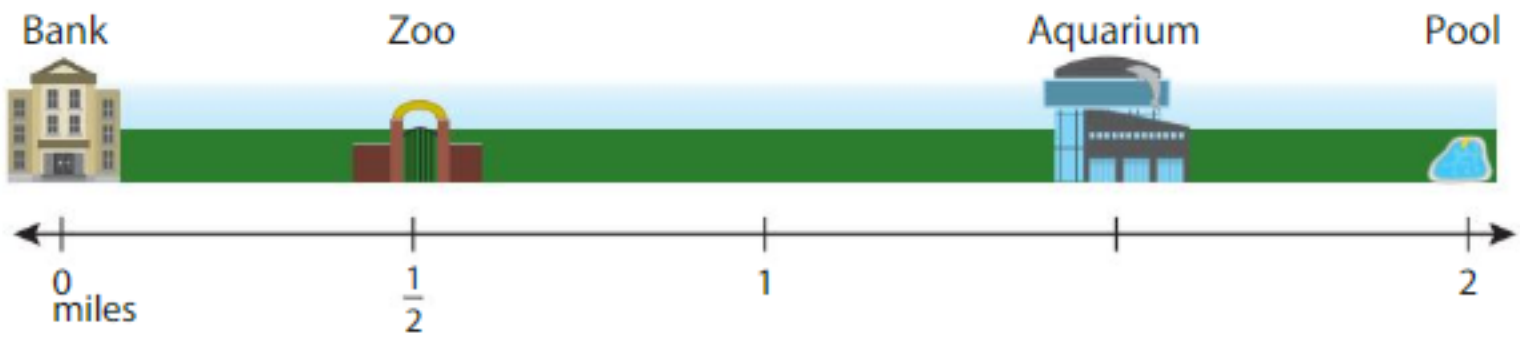
Think and Grow: Modeling Real Life

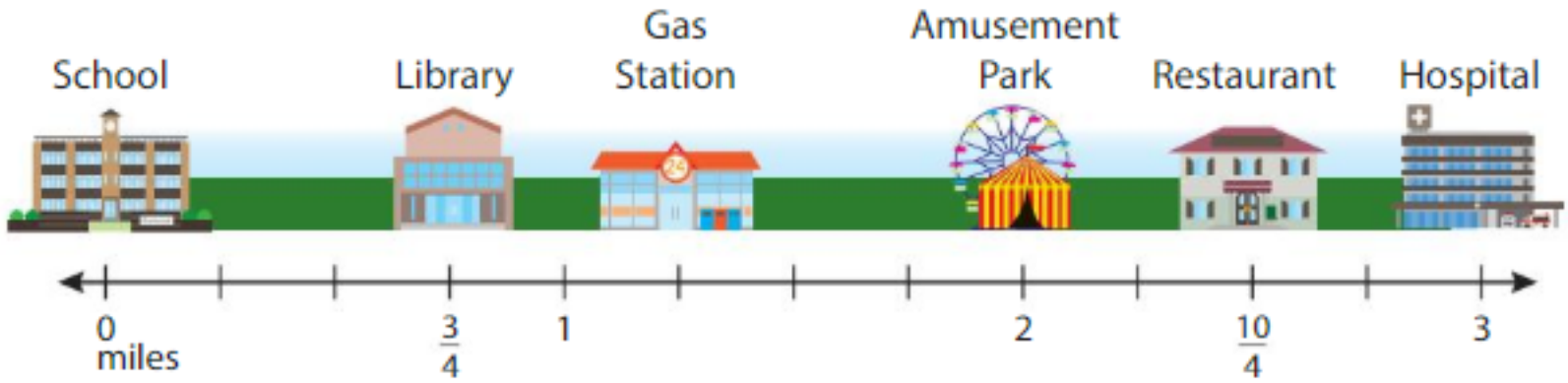
How far is the aquarium from the bank?



The aquarium is _____ miles from the bank.

Show and Grow

Use the number line to answer the questions.



9. How far is the gas station from the school?

10. A post office is the same distance from the restaurant as it is from the hospital. How far is the post office from the school?

11. DIG DEEPER! How far is the gas station from the hospital?

12. DIG DEEPER! How far is the library from the amusement park?

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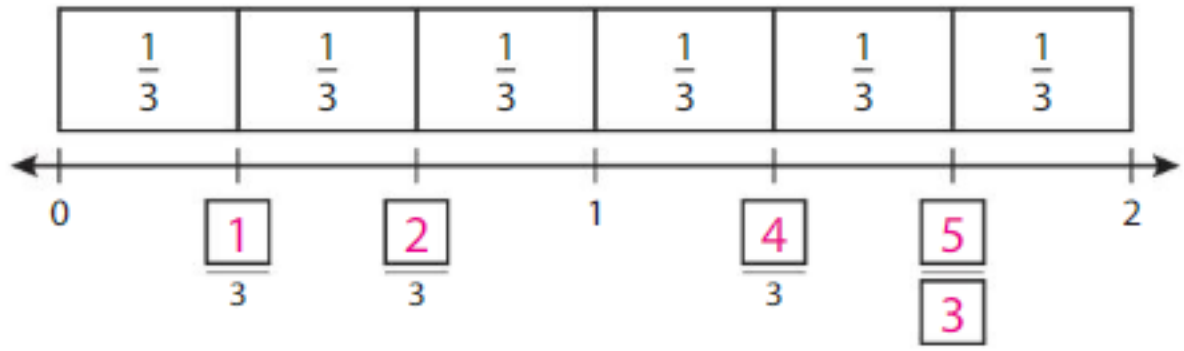
English Spanish

Name _____

Homework & Practice 10.5

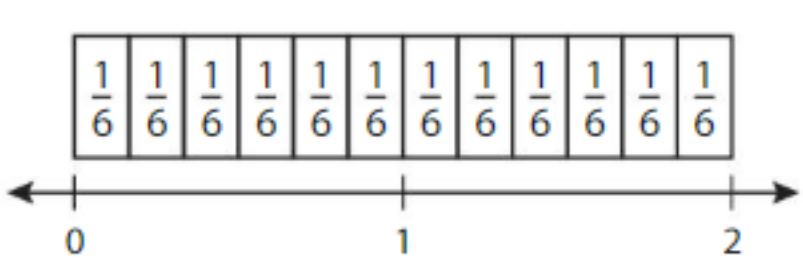
Learning Target: Plot fractions greater than 1 on a number line.

Example Plot $\frac{5}{3}$ on the number line.

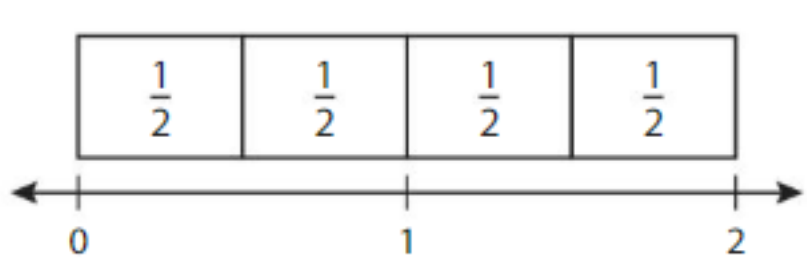


Plot the fraction on a number line.

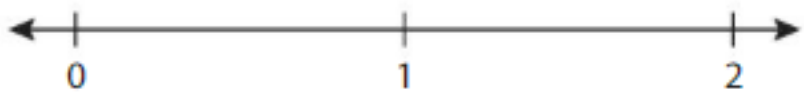
1. $\frac{8}{6}$



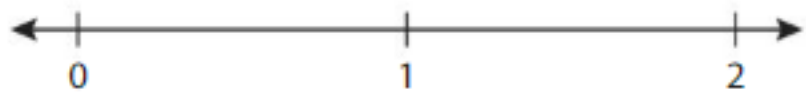
2. $\frac{3}{2}$



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



4. $\frac{7}{6}$



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

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

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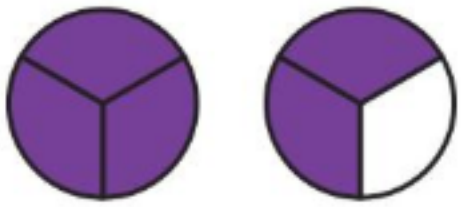
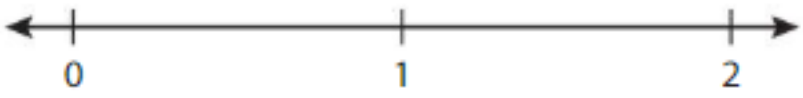
7. **YOU BE THE TEACHER** Newton says 2 is between 1 and $\frac{9}{8}$ on a number line. Is he correct? Explain.

8. **Writing** Explain what the numerator of the fraction $\frac{7}{4}$ represents.

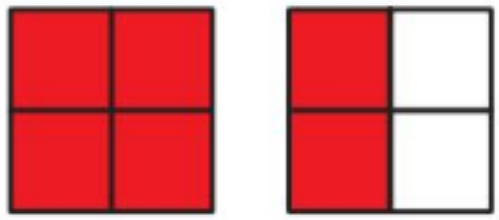
DIG DEEPER! What fraction is shaded? Plot the fraction on the number line.

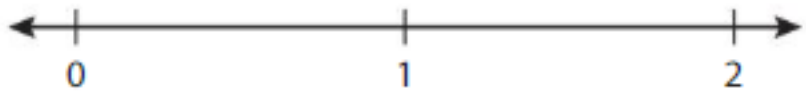
9.



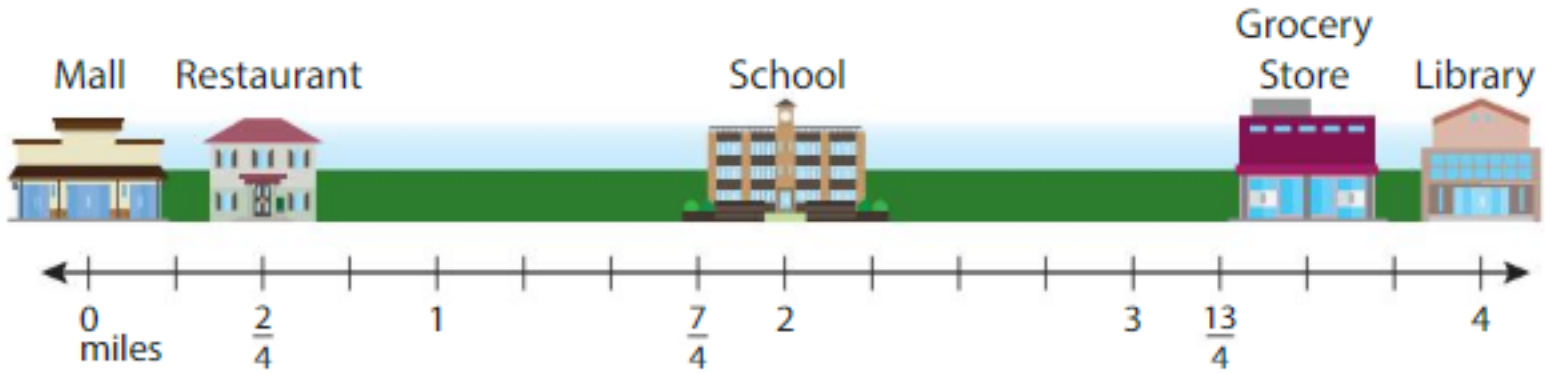


10.





Modeling Real Life Use the number line to answer the questions.



11. How far is the grocery store from the school?

12. A playground is the same distance from the grocery store as it is from the library. How far is the playground from the mall?

Review & Refresh

Round.

13. 25 Nearest ten: _____

14. 182 Nearest hundred: _____

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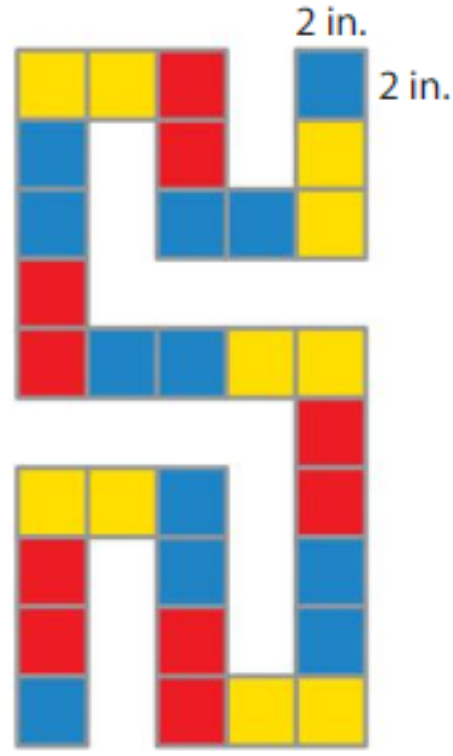
Name _____

Performance Task 10

1. You, your friend, and your cousin are making spinners for a board game.

a. You design a spinner with 3 equal parts for your game. Draw the equal parts.



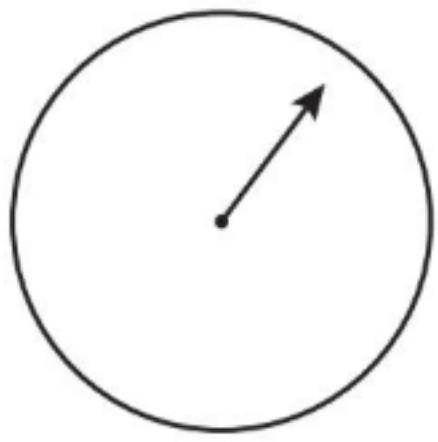
b. Your friend designs a spinner that is split into sixths. Does this spinner work for your game?

c. Your cousin wants to design a spinner that is $\frac{1}{3}$ blue, $\frac{2}{3}$ yellow, and $\frac{1}{3}$ red. Is your cousin correct? Explain.

2. Use the game board above to find the area of each color in square inches. Which color has the greatest area?

3. Design a spinner that has 8 equal parts. One part is red, two parts are blue, one part is yellow, and the rest is green.

a. What fraction of the spinner is green?



b. Which color are you most likely to spin? Explain.

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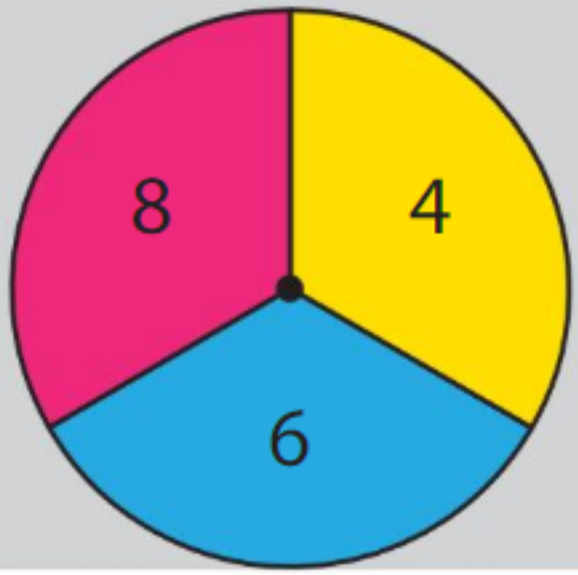
Fraction Spin and Cover

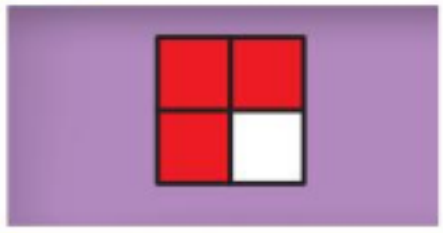
Directions:

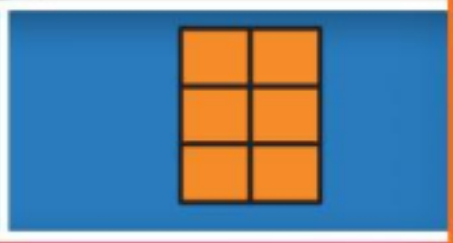
1. Take turns using the spinners to find which fraction model to cover.
2. Use a counter to cover the fraction model.
3. Repeat this process until you cover all of the models.
4. The player with the most fraction models covered wins!

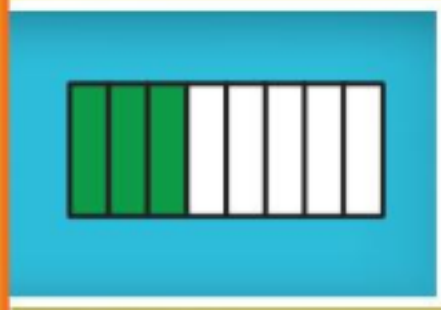
Spinner A: Numerator

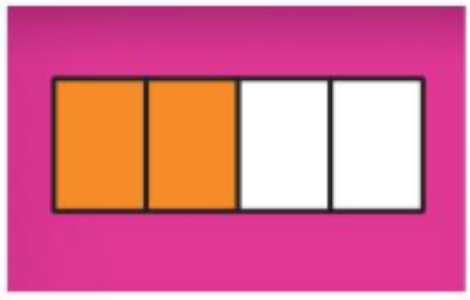
Spinner B: Denominator

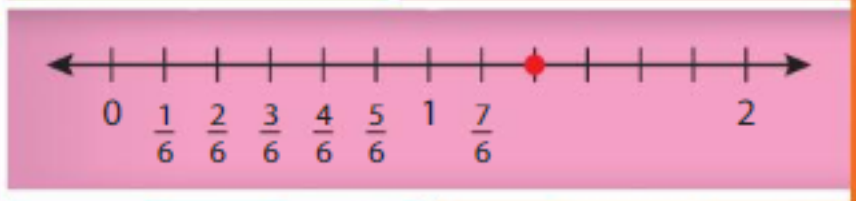


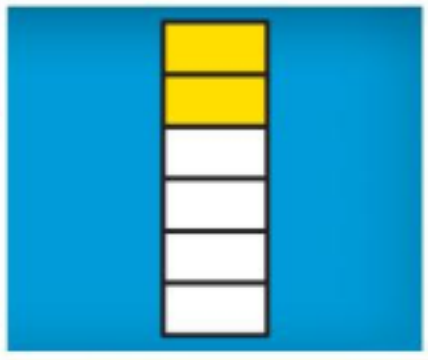


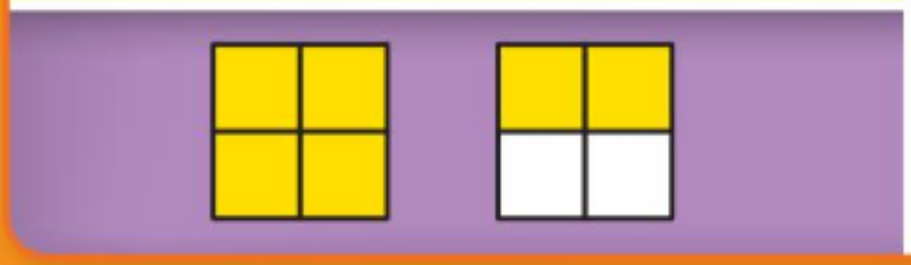












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Name _____

Chapter Practice 10

10.1 Equal Parts of a Whole

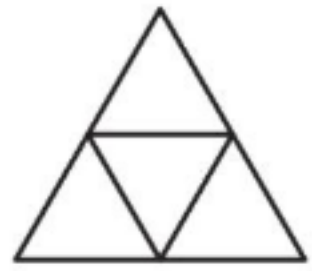
Tell whether the shape shows equal parts or unequal parts. If the shape shows equal parts, then name them.

1.

_____ parts

_____

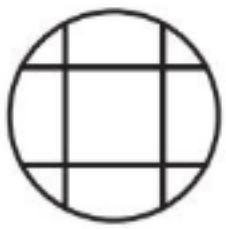
2.



_____ parts

_____

3.



_____ parts

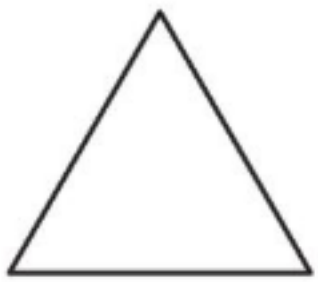
_____

4.

_____ parts

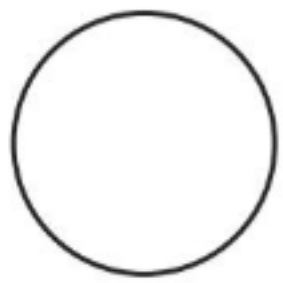
_____

5. Divide the triangle into two equal parts. Then name the equal parts.



_____

6. Divide the circle into eight equal parts. Then name the equal parts.



_____

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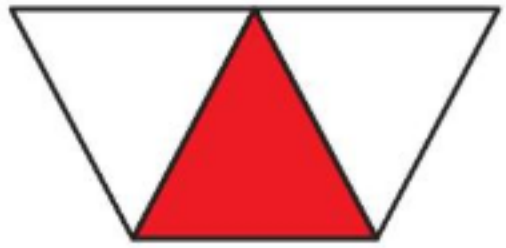
10.2 Understand a Unit Fraction

What fraction of the whole is shaded?

7.

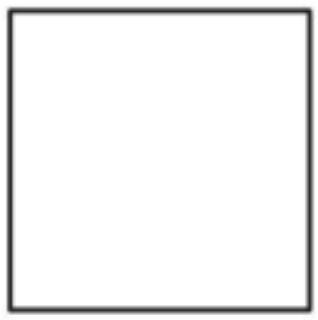
$\frac{\square}{\square}$ is shaded.

8.



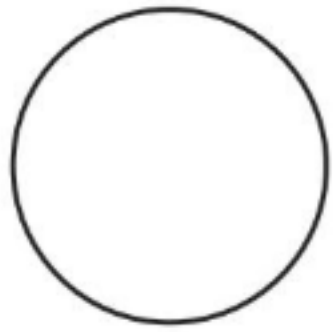
$\frac{\square}{\square}$ is shaded.

9. Divide the square into four equal parts. Shade one part. What fraction of the whole is shaded?



$\frac{\square}{\square}$ is shaded.

10. Divide the circle into eight equal parts. Shade one part. What fraction of the whole is shaded?



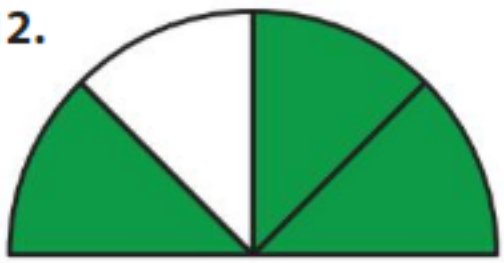
$\frac{\square}{\square}$ is shaded.

11. Modeling Real Life Descartes arranges his bedroom into four equal parts. His bed takes up two parts. His dresser takes up one part. The rest of his bedroom is free space. What fraction of Descartes's bedroom is free space?

10.3 Write Fractions of a Whole

What fraction of the whole is shaded?

12.



$\frac{\square}{\square}$ is shaded.

13.

$\frac{\square}{\square}$ is shaded.

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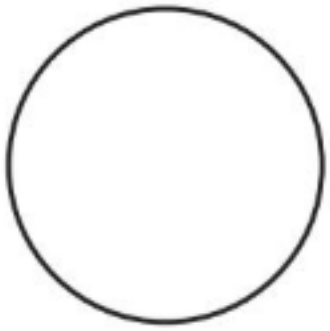
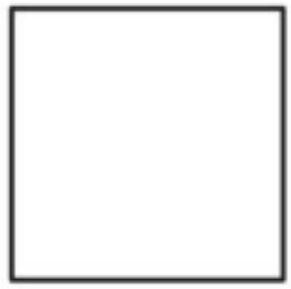
14. Divide the circle into sixths. Shade 4 of the equal parts. Then write a fraction for the shaded parts.



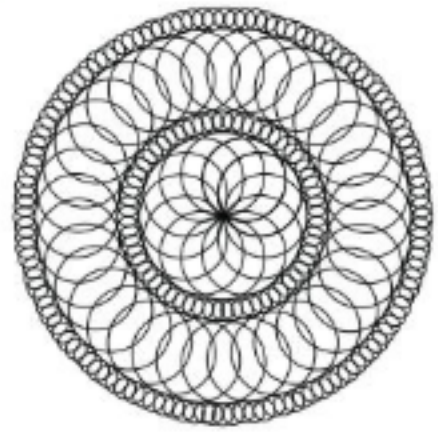
$\frac{\square}{\square}$ is shaded.

15. Divide the square into thirds. Shade 2 of the equal parts. Then write a fraction for the shaded parts.



$\frac{\square}{\square}$ is shaded.

16. **Modeling Real Life** A circular mandala poster is divided into eight equal parts. You color one part red, three parts green, and two parts yellow. What fraction of the poster do you have left to color?



10.4 Fractions on a Number Line: Less Than 1

Plot the fraction on the number line.

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

$\frac{\square}{\square}$s are $\frac{3}{4}$.

18. $\frac{5}{6}$

19. $\frac{2}{3}$

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Plot the fraction on a number line.

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

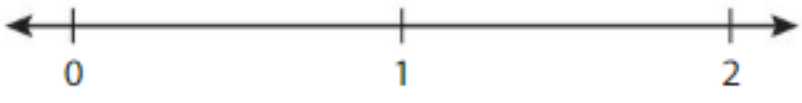
21. $\frac{5}{8}$

22. Modeling Real Life You follow a recipe and make three servings. How many servings can you make using $\frac{1}{3}$ of each ingredient in the recipe?

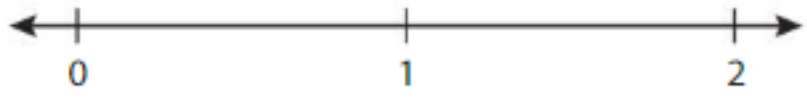
10.5 Fractions on a Number Line: Greater Than 1

Plot the fraction on the number line.

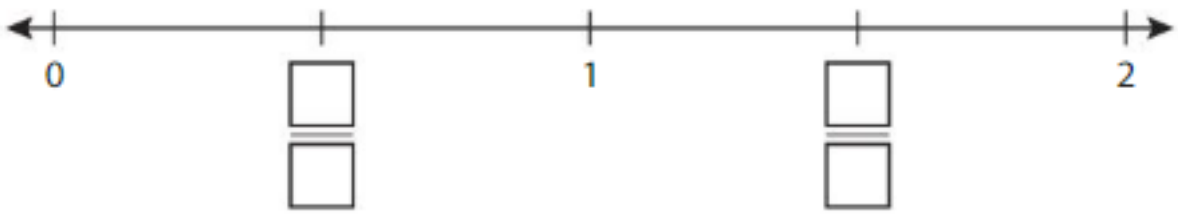
23. $\frac{4}{3}$



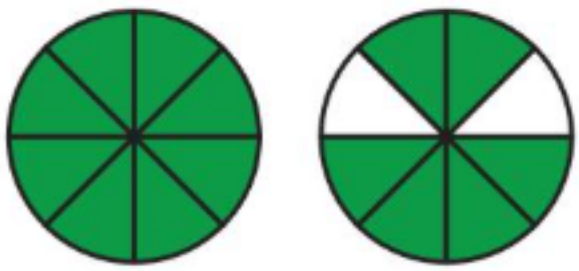
24. $\frac{9}{6}$

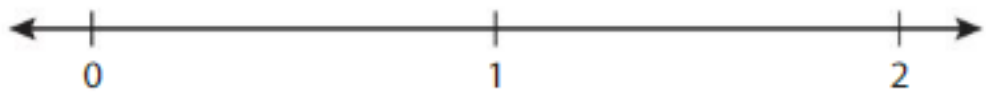


25. Structure Complete the number line.



26. Number Sense What fraction is shaded? Plot the fraction on the number line.





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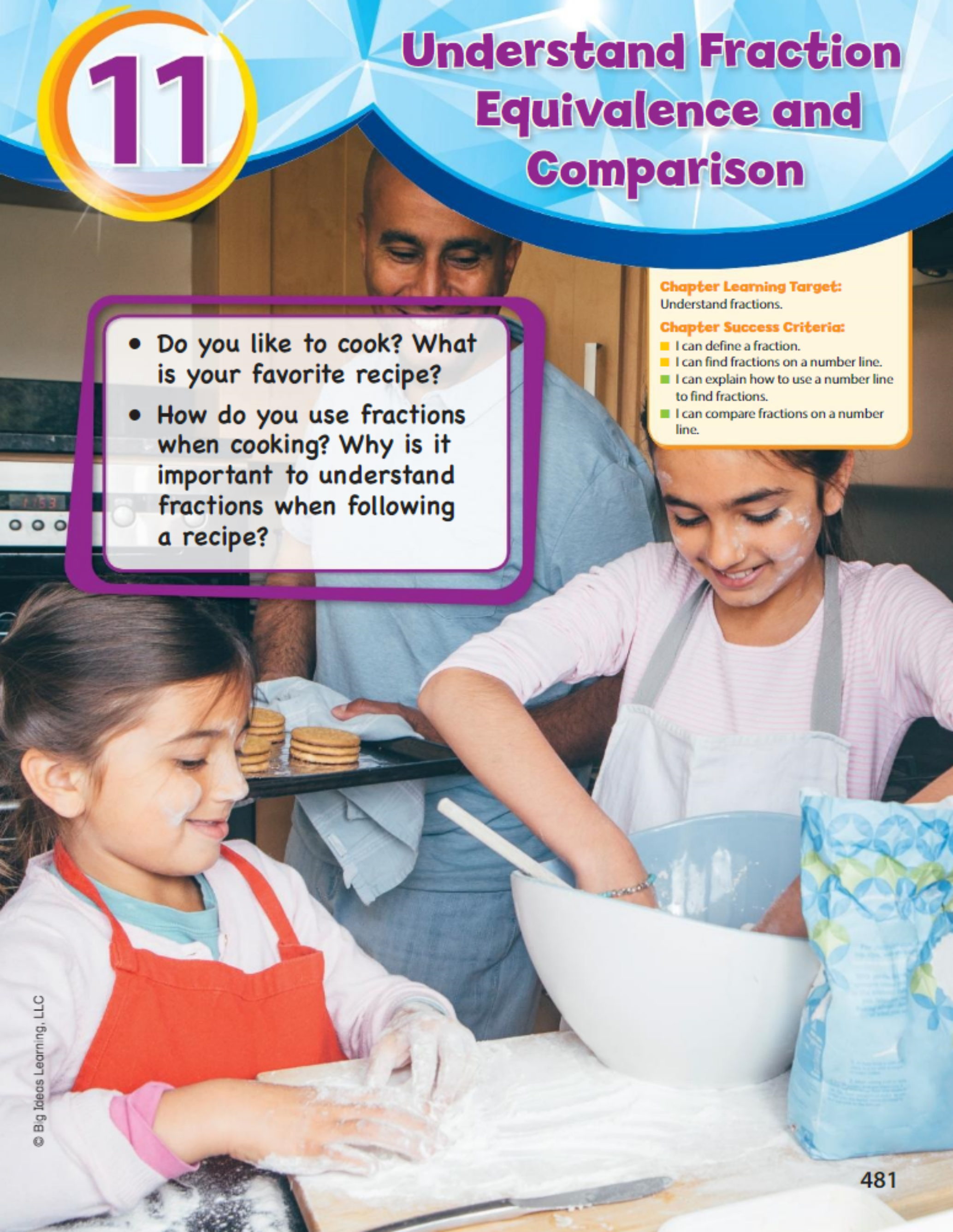
11 Understand Fraction Equivalence and Comparison



- Do you like to cook? What is your favorite recipe?
- How do you use fractions when cooking? Why is it important to understand fractions when following a recipe?

Chapter Learning Target:
Understand fractions.

Chapter Success Criteria:
- I can define a fraction.
- I can find fractions on a number line.
- I can explain how to use a number line to find fractions.
- I can compare fractions on a number line.

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Name _____

11 Vocabulary

Review Words

eighths
sixths
unit fraction
whole

Organize It

Use the review words to complete the graphic organizer.

Fraction

A number that represents

part of a _____

- _____ $\frac{1}{3}$
- _____ $\frac{2}{6}$
- _____ $\frac{6}{8}$

Define It

Use your vocabulary cards to complete the definitions.

1. equivalent: Having the same _____
2. equivalent fractions: Two or more _____ that name the same _____ of a _____

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Chapter 11 Vocabulary Cards

equivalent

equivalent fractions

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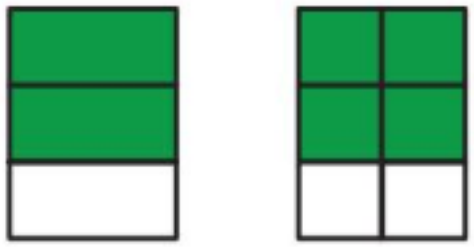
Two or more fractions that name the same part of a whole



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

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Having the same value

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

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

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

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Name _____

Equivalent Fractions 11.1

Learning Target: Model and write equivalent fractions.

Success Criteria:

- I can model equivalent fractions.
- I can write equivalent fractions.

FLORIDA STANDARDS
MAFS.3.NF.1.3a
MAFS.3.NF.1.3b

Explore and Grow

Use the model to write fractions that are the same size as $\frac{1}{2}$.

1 whole							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$	
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$		$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

MP **Reasoning** Can you write a fraction with a denominator of 8 that is the same size as $\frac{3}{4}$? Explain.

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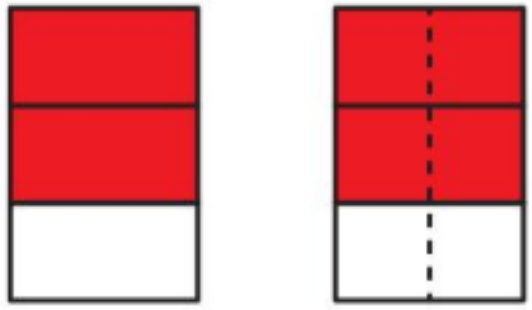
Think and Grow: Model Equivalent Fractions

Two or more numbers that have the same value are **equivalent**. Two or more fractions that name the same part of a whole are **equivalent fractions**.

Example Use the models to find an equivalent fraction for $\frac{2}{3}$.

Both models show the same whole.



The shaded parts show the same part of the whole.

$\frac{2}{3}$ $\qquad$ $\frac{\square}{6}$

$\frac{2}{3}$ and $\frac{\square}{6}$ are equivalent fractions. So, $\frac{2}{3} = \frac{\square}{6}$.

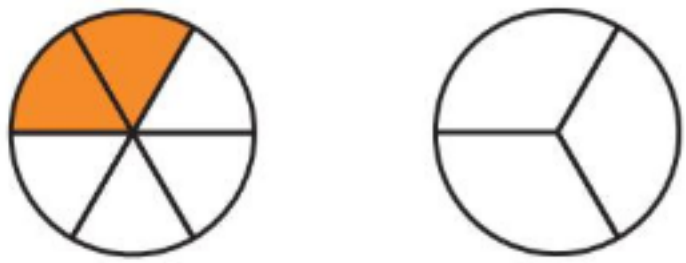
Show and Grow

Use the models to find an equivalent fraction. Both models show the same whole.

1.

$\frac{1}{4} = \frac{\square}{\square}$

2.



$\frac{2}{6} = \frac{\square}{\square}$

3. Shade 1 part of the model. Then divide the model into 4 equal parts. Write the equivalent fraction.

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

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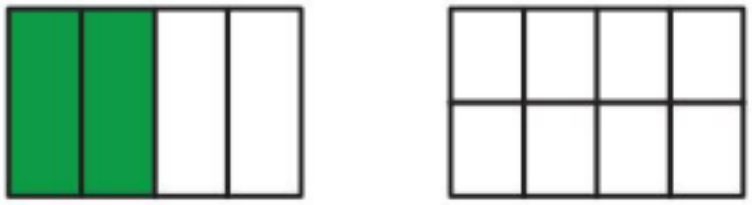
English Spanish

Name _____

Apply and Grow: Practice

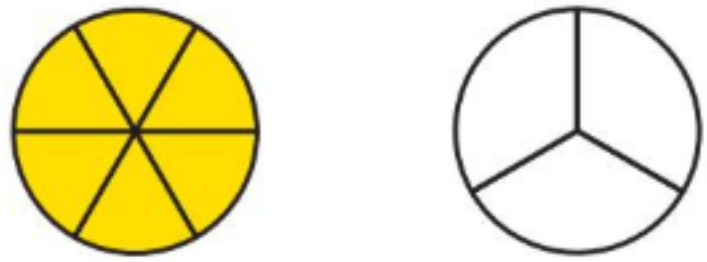
Use models to find an equivalent fraction. Both models show the same whole.

4.



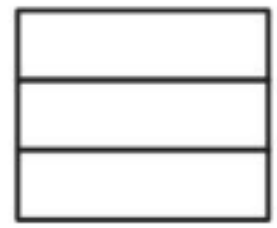
$\frac{2}{4} = \frac{\square}{\square}$

5.



$\frac{6}{6} = \frac{\square}{\square}$

6. Shade 1 part of the model. Then divide the model into 6 equal parts. Write the equivalent fraction.



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

Find the equivalent fraction.

7. $\frac{1}{2} = \frac{\square}{8}$

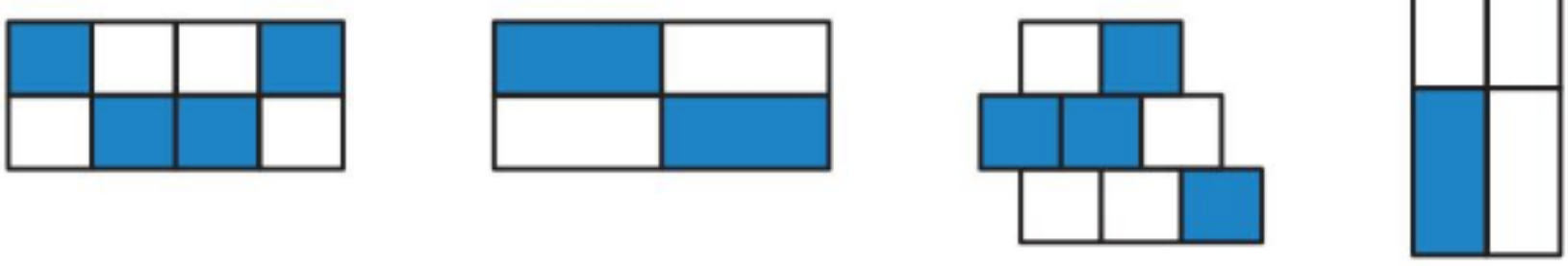
8. $\frac{4}{4} = \frac{\square}{2}$

9. $\frac{2}{3} = \frac{\square}{6}$

10. $\frac{3}{6} = \frac{\square}{2}$

11. **Structure** Descartes shades $\frac{3}{4}$ of a rectangle. Divide and shade the model to show an equivalent fraction for $\frac{3}{4}$.

12. **Which One Doesn't Belong?** Which model does *not* belong with the other three?



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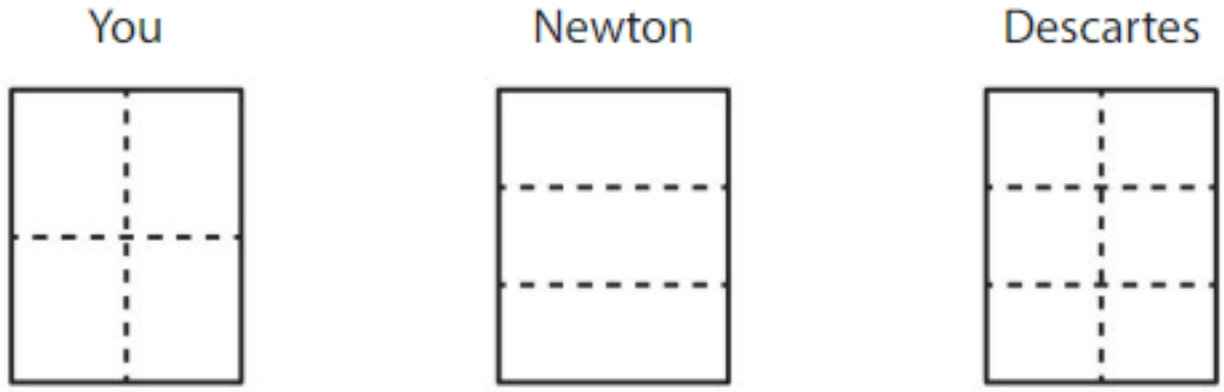
English Spanish

Think and Grow: Modeling Real Life

You, Newton, and Descartes divide your posters for a science fair as shown. You finish 3 parts, Newton finishes 2 parts, and Descartes finishes 4 parts. Who has finished the same amount?

Model:



Fraction finished: $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$

_____ and _____ finish the same amount.

Show and Grow

13. You, Newton, and Descartes divide your submarine sandwiches as shown. You eat 1 part, Newton eats 2 parts, and Descartes eats 2 parts. Who eats the same amount?

14. DIG DEEPER! You and your friend have small pizzas. You cut your pizza into sixths. Your friend cuts her pizza into eighths. You eat $\frac{3}{6}$ of your pizza. Your friend eats the same amount of her pizza. What fraction of her pizza does your friend eat? How many slices does your friend eat? Explain.

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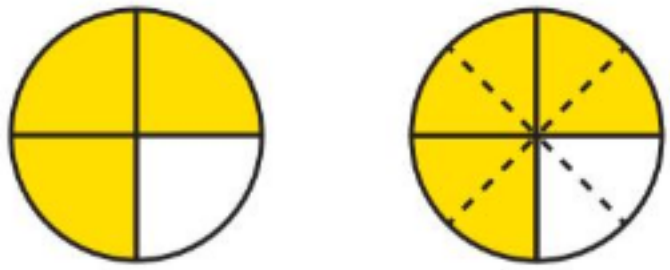
Name _____

Homework & Practice 11.1

Learning Target: Model and write equivalent fractions.

Example Use the models to find an equivalent fraction for $\frac{3}{4}$.

Both models show the same whole.



$\frac{3}{4}$ $\quad$ $\frac{\boxed{6}}{8}$

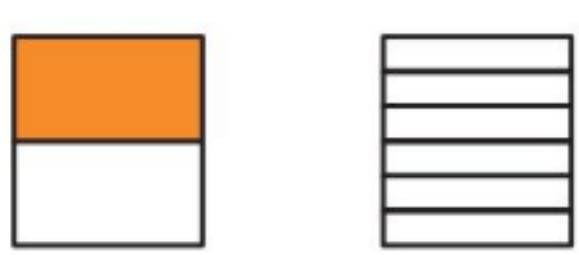
$\frac{3}{4}$ and $\frac{\boxed{6}}{8}$ are equivalent fractions. So, $\frac{3}{4} = \frac{\boxed{6}}{8}$.

Use models to find an equivalent fraction. Both models show the same whole.

1.

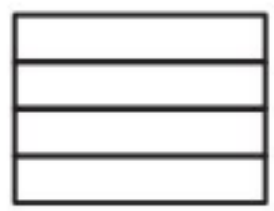
$\frac{4}{6} = \frac{\square}{\square}$

2.



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

3. Shade 1 part of the model. Then divide the model into 8 equal parts. Write the equivalent fraction.



$\frac{1}{4} = \frac{\square}{\square}$

Find the equivalent fraction.

4. $\frac{2}{2} = \frac{\square}{8}$

5. $\frac{6}{8} = \frac{\square}{4}$

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

7. $\frac{2}{4} = \frac{\square}{2}$

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8. Open-Ended Divide one model into an odd number of equal parts and the other model into an even number of equal parts. Then model and write two equivalent fractions.

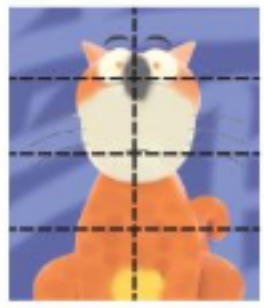
$\frac{\square}{\square} = \frac{\square}{\square}$

9. Modeling Real Life You, Newton, and Descartes divide your portrait canvases as shown. You paint 2 parts, Newton paints 2 parts, and Descartes paints 8 parts. Who paints the same amount of the portrait canvas?

You

Newton

Descartes



10. DIG DEEPER! You and your friend paint 2 roundabouts for a park. You divide your roundabout into thirds. Your friend divides his roundabout into sixths. You paint $\frac{1}{3}$ of your roundabout. Your friend paints the same amount of his roundabout. What fraction does your friend paint? Explain.

Review & Refresh

11. Round to the nearest ten to estimate the sum.

$$\begin{array}{r} 431 \\ +\ 109 \\ \hline \end{array} \qquad \begin{array}{r} \square \\ +\ \square \\ \hline \square \end{array}$$

12. Round to the nearest hundred to estimate the sum.

$$\begin{array}{r} 551 \\ +\ 268 \\ \hline \end{array} \qquad \begin{array}{r} \square \\ +\ \square \\ \hline \square \end{array}$$

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Name _____

Equivalent Fractions on a Number Line

11.2

Learning Target: Use a number line to find equivalent fractions.

Success Criteria:

- I can plot fractions on a number line.
- I can find equivalent fractions on a number line.
- I can explain how to use a number line to find equivalent fractions.

FLORIDA STANDARDS
MAFS.3.NF.1.3a
MAFS.3.NF.1.3b

Explore and Grow

Use Fraction Strips to label thirds on the number line.

Use Fraction Strips to label sixths on the number line.

Use the number lines to complete the equivalent fraction.

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

MP **Structure** How can you tell whether fractions are equivalent using a number line?

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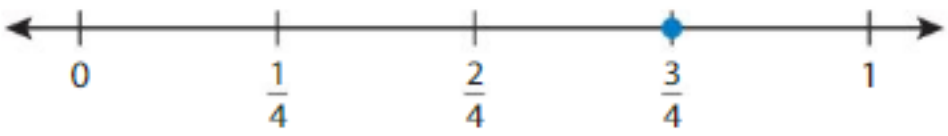
Think and Grow: Equivalent Fractions on a Number Line

You can use a number line to find equivalent fractions. Equivalent fractions represent the same point on a number line.

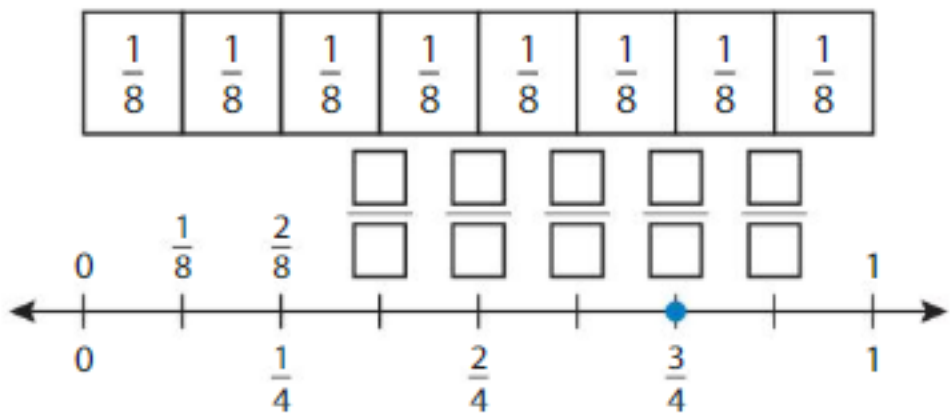
Example Use a number line to find an equivalent fraction for $\frac{3}{4}$.

Step 1: Plot $\frac{3}{4}$ on a number line.



Remember that a number line can be divided into any number of equal parts.

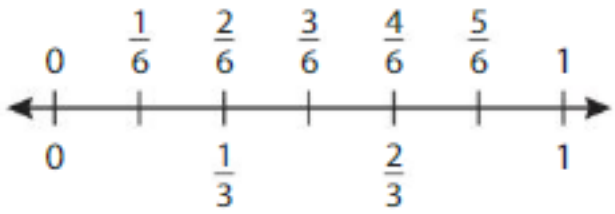
Step 2: Divide the number line into eighths. Label each tick mark to show eighths.



The fractions that name the same point are $\frac{3}{4}$ and $\frac{\square}{\square}$. So, $\frac{3}{4} = \frac{\square}{\square}$.

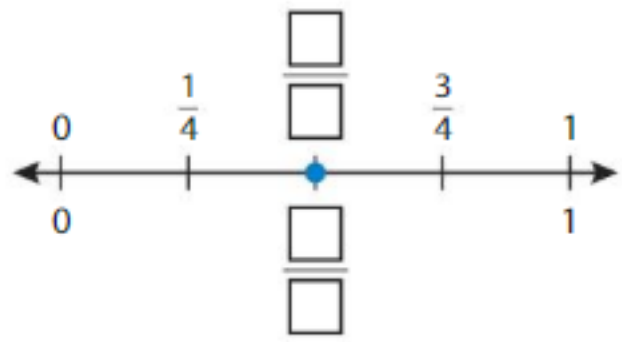
Show and Grow

1. Use the number line to find an equivalent fraction.



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

2. Write two fractions that name the point shown.



$\frac{\square}{\square} = \frac{\square}{\square}$

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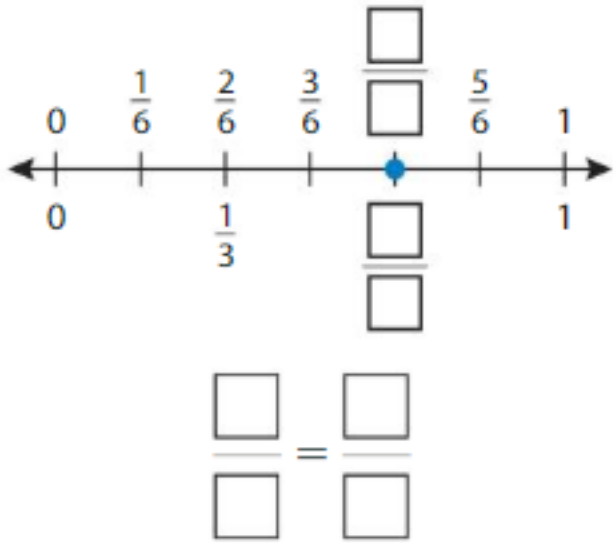
Name _____

Apply and Grow: Practice

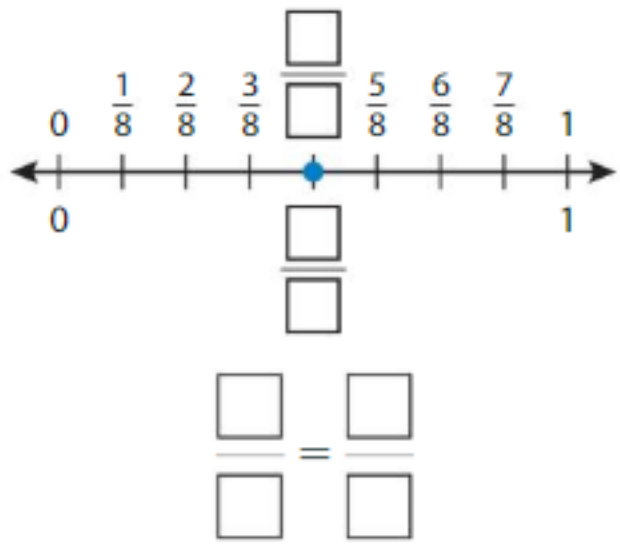
Write two fractions that name the point shown.

3.



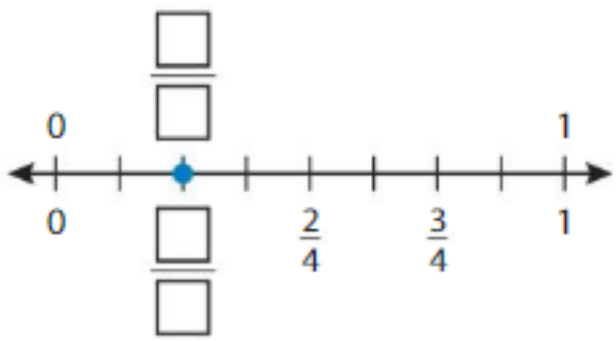
$\frac{\square}{\square} = \frac{\square}{\square}$

4.



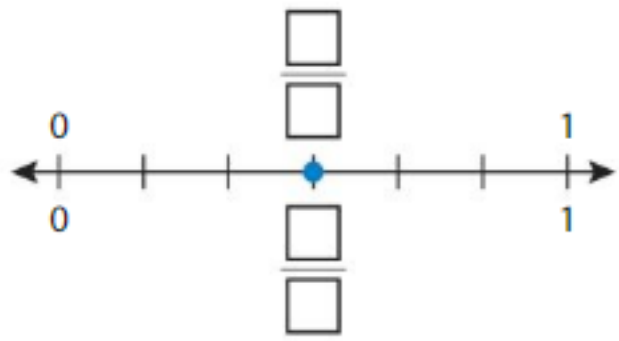
$\frac{\square}{\square} = \frac{\square}{\square}$

5.



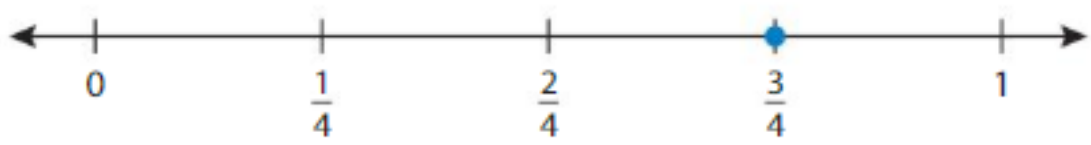
$\frac{\square}{\square} = \frac{\square}{\square}$

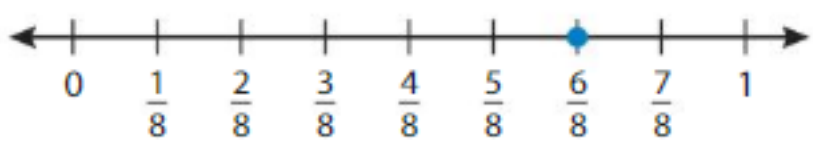
6.



$\frac{\square}{\square} = \frac{\square}{\square}$

7. YOU BE THE TEACHER Your friend says $\frac{3}{4}$ and $\frac{6}{8}$ are *not* equivalent because they are not the same distance from 0. Is your friend correct? Explain.





8. MP Reasoning Explain why $\frac{1}{3}$ is equal to two $\frac{1}{6}$s.

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Think and Grow: Modeling Real Life

Newton rests after biking $\frac{2}{3}$ of a race. Descartes rests after biking $\frac{2}{6}$ of the same race. Do they rest at the same point along the race path?

Model:

They _____ rest at the same point.

Explain:

Show and Grow

9. Newton hikes $\frac{7}{8}$ of a trail. Descartes hikes $\frac{3}{4}$ of the same trail. Do they hike the same distance along the trail?

10. Newton chases Descartes for $\frac{3}{6}$ mile. Descartes turns around and chases Newton an equal distance. Write two equivalent fractions that can describe how far Descartes chases Newton.

11. **DIG DEEPER!** You cut a quiche into 8 equal slices. Your family eats $\frac{1}{2}$ of the quiche. How many slices does your family eat? Explain.

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English Spanish

Name _____

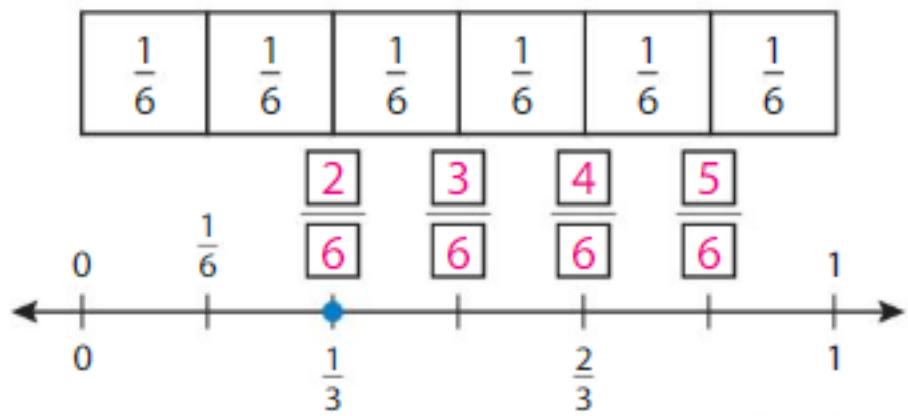
Homework & Practice 11.2

Learning Target: Use a number line to find equivalent fractions.

Example Use a number line to find an equivalent fraction for $\frac{1}{3}$.

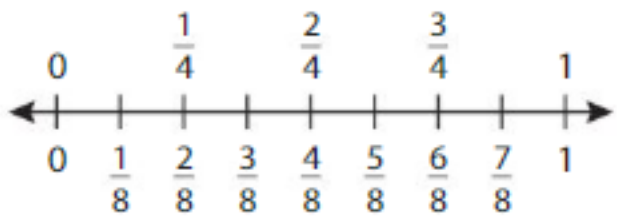
Step 1: Plot $\frac{1}{3}$ on the number line.

Step 2: Divide the number line into sixths. Label each tick mark to show sixths.



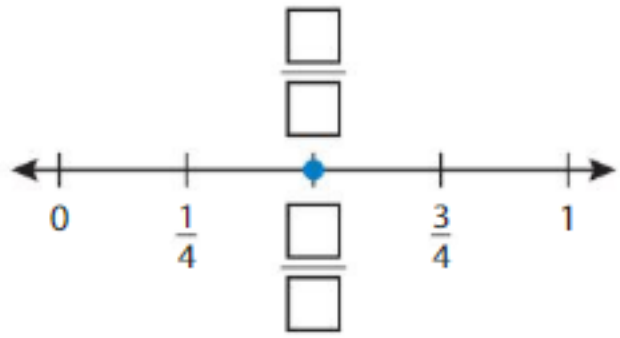
The fractions that name the same points are $\frac{1}{3}$ and $\frac{2}{6}$. So, $\frac{1}{3} = \frac{2}{6}$.

1. Use the number line to find an equivalent fraction.



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

2. Write two fractions that name the point shown.



$\frac{\square}{\square} = \frac{\square}{\square}$

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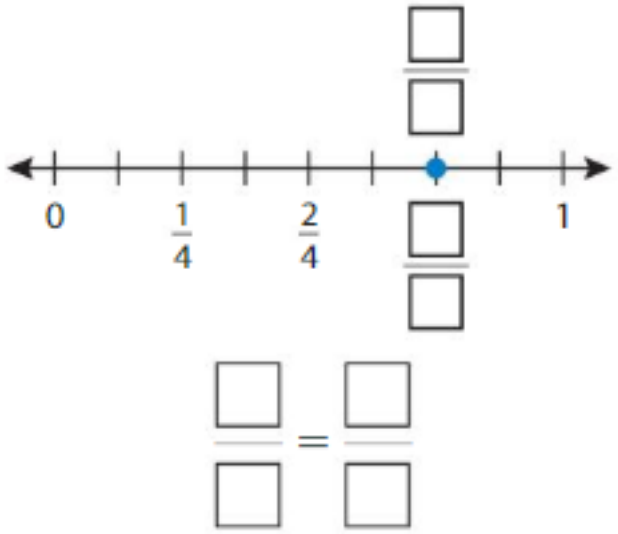
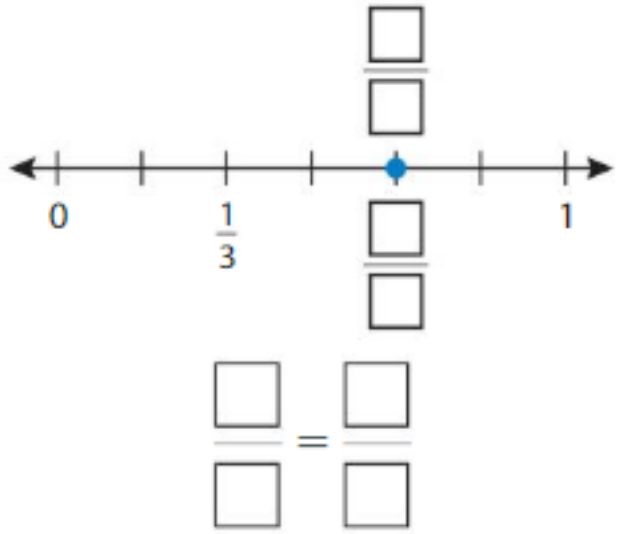
Write two fractions that name the same point shown.

3.



4.



5. Which One Doesn't Belong? Which fraction does *not* belong with the other three? Explain.

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

6. Reasoning How do you know that $\frac{3}{8}$ and $\frac{3}{4}$ are *not* equivalent when plotting the fractions on a number line?

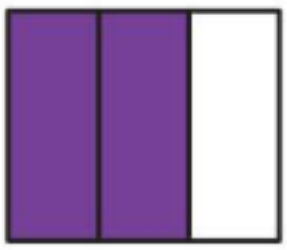
7. Modeling Real Life You run $\frac{6}{8}$ of a race. Your friend runs $\frac{3}{4}$ of the same race. Do you and your friend run the same distance?

8. DIG DEEPER! You have a frame that holds 8 pictures. You fill $\frac{1}{4}$ of the frame. How many pictures do you put in the frame? Explain.

Review & Refresh

What fraction of the whole is shaded?

9.



$\frac{\square}{\square}$ is shaded.

10.

$\frac{\square}{\square}$ is shaded.

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Name _____

Relate Fractions and Whole Numbers

11.3

Learning Target: Relate fractions and whole numbers.

Success Criteria:

- I can label fractions on a number line.
- I can write whole numbers as fractions.
- I can use a number line to relate fractions and whole numbers.

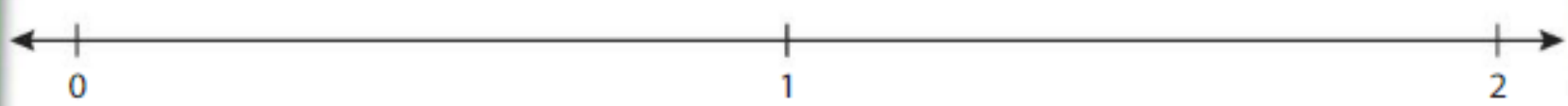
FLORIDA STANDARDS

MAFS.3.NF.1.3a
MAFS.3.NF.1.3c

Explore and Grow

Use Fraction Strips to complete the fractions. Draw to show your models.

$$1 = \frac{\square}{4}$$



$$2 = \frac{\square}{4}$$

MP **Repeated Reasoning** How many more fourths did you use to model 2 than you did to model 1? How many more fourths would you need to model 3? Complete the fraction.

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

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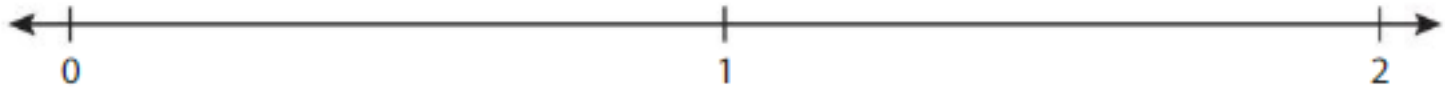
Think and Grow: Equivalent Fractions and Whole Numbers

Example Write the numbers 1 and 2 as fractions.

The number line shows 2 wholes. Each whole is divided into 1 equal part.

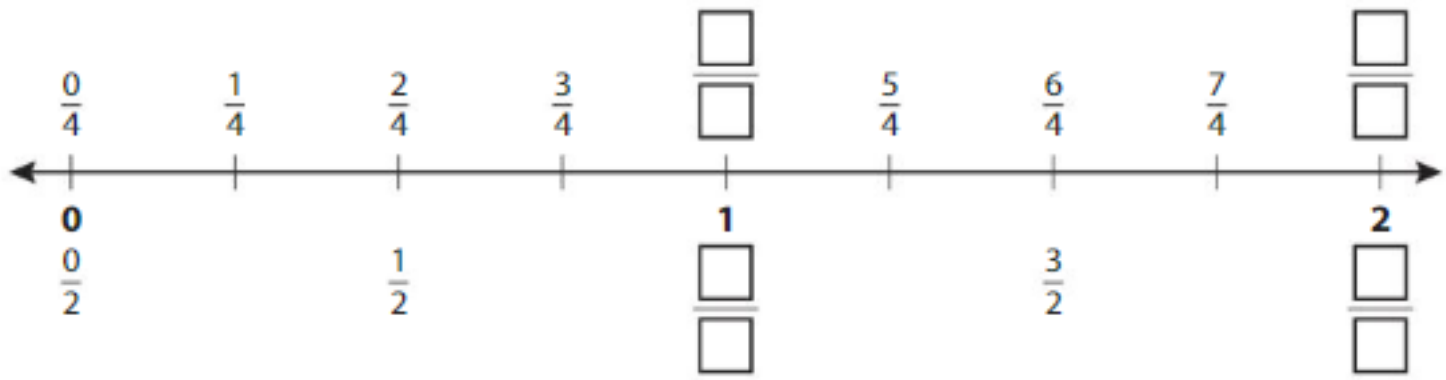


1 whole divided into 1 equal part can be written as $\frac{\square}{1}$.

2 wholes each divided into 1 equal part can be written as $\frac{\square}{1}$.

So, $1 = \frac{\square}{1}$ and $2 = \frac{\square}{1}$.

Example Write equivalent fractions for the numbers 1 and 2.

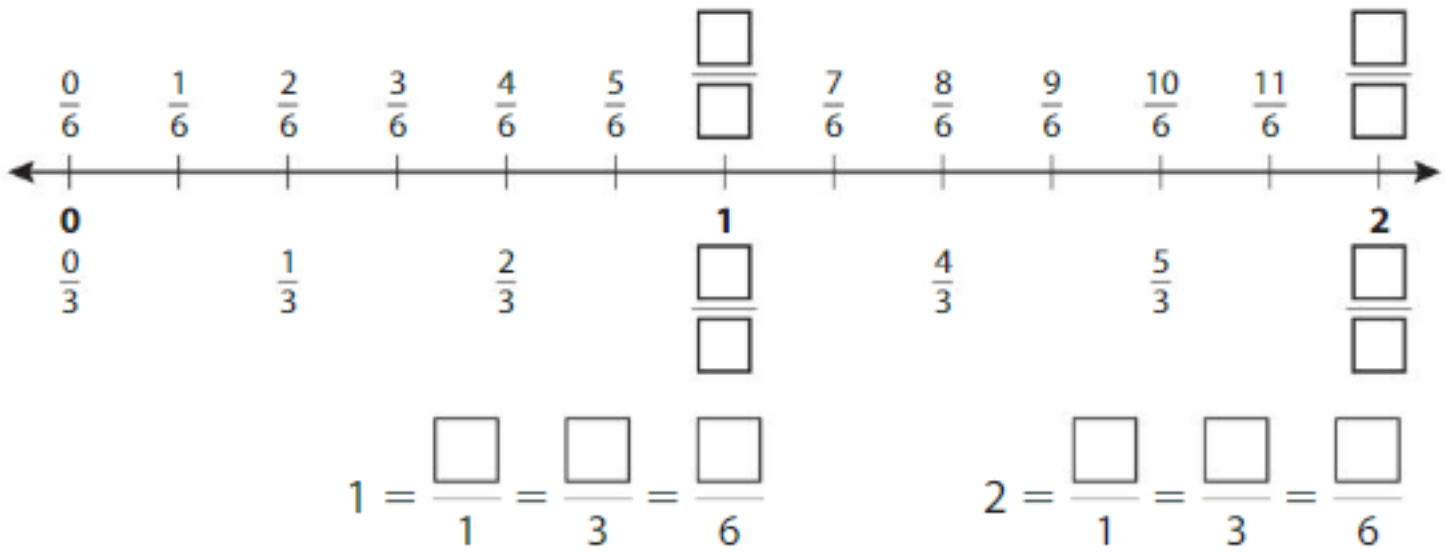


$1 = \frac{\square}{1} = \frac{\square}{2} = \frac{\square}{4}$

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

Show and Grow

1. Complete the number line. Then complete the statements.



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

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

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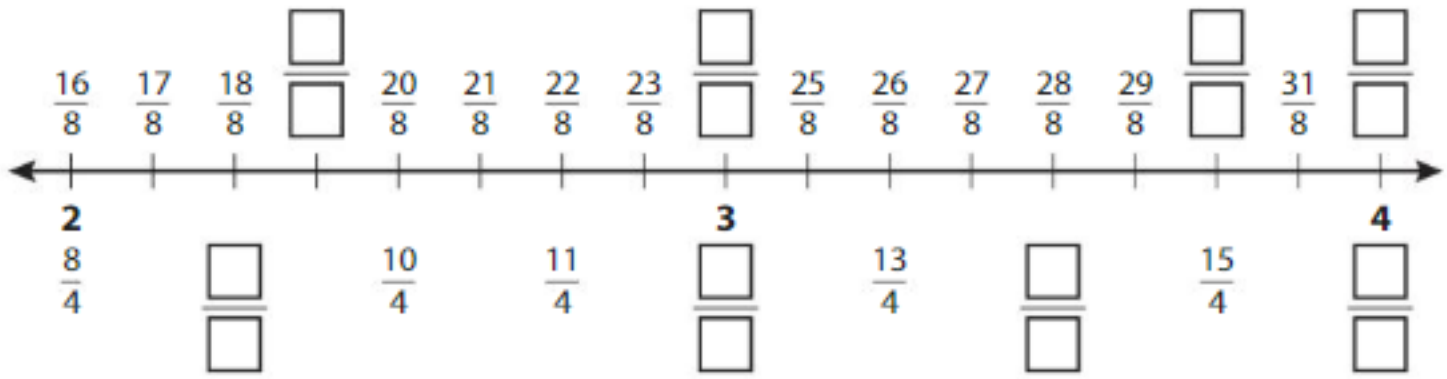
Name _____

Apply and Grow: Practice

2. Complete the number line. Then write equivalent fractions for the numbers 3 and 4.



$3 = \frac{\square}{1} = \frac{\square}{4} = \frac{\square}{8}$

$4 = \frac{\square}{1} = \frac{\square}{4} = \frac{\square}{8}$

Write two equivalent fractions for the whole number.

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

4. $1 = \frac{\square}{2} = \frac{\square}{3}$

5. $3 = \frac{\square}{1} = \frac{\square}{2}$

Write the equivalent whole number.

6. $\frac{16}{2} = \frac{8}{1} = \square$

7. $\frac{4}{4} = \frac{6}{6} = \square$

8. $\frac{16}{4} = \frac{12}{3} = \square$

9. You cut a sandwich into 4 pieces. You eat the whole sandwich. What fraction of the sandwich do you eat?

10. MP **Number Sense** Write three fractions that are equivalent to 6 using the denominators 1, 2, and 6.

11. MP **Structure** Use a number line to show $\frac{5}{5} = 1$.

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English Spanish

Think and Grow: Modeling Real Life

You run around a track 12 times. Each lap is $\frac{1}{4}$ mile. How many miles do you run? Write your answer as a whole number and as a fraction.

Model:

You run _____ or _____ miles.

Show and Grow

12. You ride your bike around a city block 24 times. Each time around is $\frac{1}{6}$ mile. How many miles do you ride? Write your answer as a whole number and as a fraction.

13. There are 5 Great Lakes: Lake Erie, Lake Huron, Lake Michigan, Lake Ontario, and Lake Superior. You complete a project and use 1 whole poster for each lake. Write a fraction that gives the number of posters you use in all.

14. DIG DEEPER! You and your friends order 3 pizzas. Each pizza is cut into 8 slices. You and your friends eat $\frac{16}{8}$ of the pizzas. Write a fraction that shows the number of eighths that are left.

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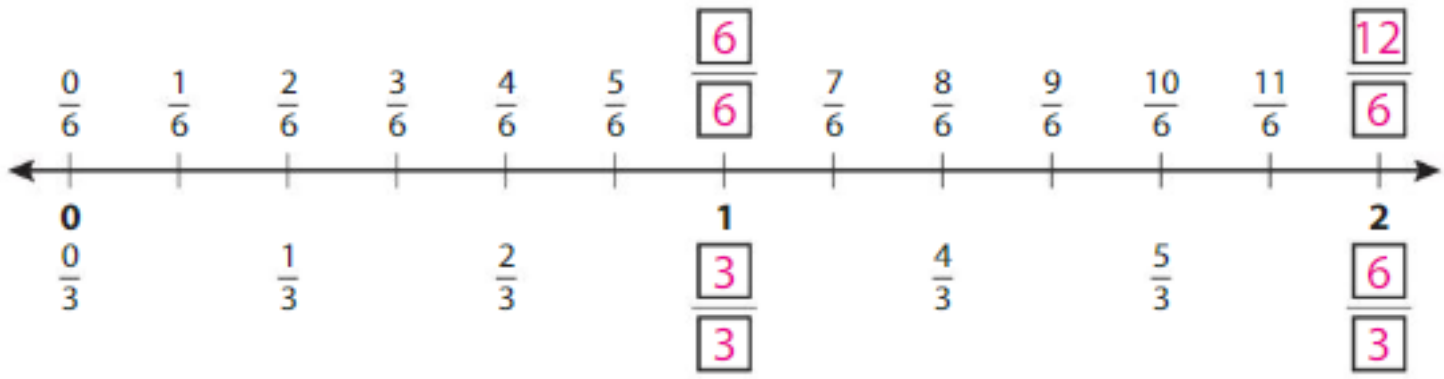
Name _____

Homework & Practice 11.3

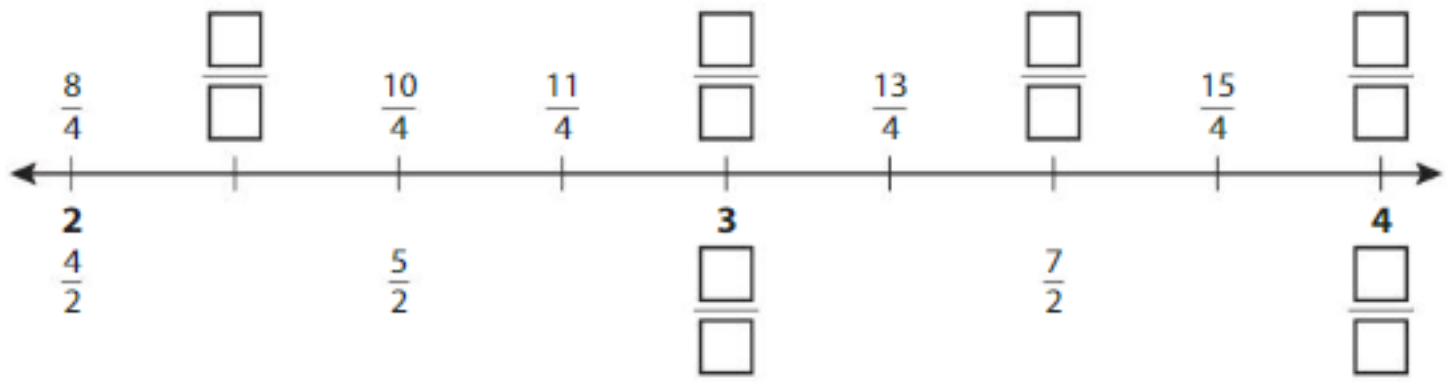
Learning Target: Relate fractions and whole numbers.

Example Write equivalent fractions for the numbers 1 and 2.



$1 = \frac{1}{1} = \frac{3}{3} = \frac{6}{6}$ $\quad 2 = \frac{2}{1} = \frac{6}{3} = \frac{12}{6}$

1. Complete the number line. Then write equivalent fractions for the numbers 3 and 4.



$3 = \frac{\square}{1} = \frac{\square}{2} = \frac{\square}{4}$ $\quad 4 = \frac{\square}{1} = \frac{\square}{2} = \frac{\square}{4}$

Write two equivalent fractions for the whole number.

2. $1 = \frac{\square}{3} = \frac{\square}{8}$

3. $4 = \frac{\square}{1} = \frac{\square}{2}$

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

Write the equivalent whole number.

5. $\frac{4}{2} = \frac{2}{1} = \square$

6. $\frac{3}{3} = \frac{8}{8} = \square$

7. $\frac{18}{3} = \frac{12}{2} = \square$

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8. **Precision** Match each whole number to its equivalent fractions.

4	$\frac{8}{2}$ and $\frac{4}{1}$
1	$\frac{9}{3}$ and $\frac{6}{2}$
3	$\frac{6}{6}$ and $\frac{3}{3}$

9. **YOU BE THE TEACHER** Descartes says a fraction equivalent to 3 has a 3 in the denominator and a 1 in the numerator. Is Descartes correct? Explain.

10. **Patterns** Describe and complete the pattern.

$$\frac{8}{8}, \frac{16}{8}, \frac{24}{8}, \frac{\square}{8}, \frac{\square}{8}$$

11. **Modeling Real Life** You run around a park 18 times. Each lap is $\frac{1}{6}$ mile. How many miles do you run? Write your answer as a whole number and as a fraction.

12. **Modeling Real Life** Christopher Columbus had 3 ships on his first voyage: the *Niña*, the *Pinta*, and the *Santa Maria*. You complete a project and use 1 whole poster for each ship. Write a fraction that gives the number of posters you use in all.

13. **DIG DEEPER!** A teacher has 4 tables. Each table is divided into 4 sections. $\frac{12}{4}$ of the tables have supplies on them. Write a fraction that shows the number of fourths that do *not* have supplies on them.

Review & Refresh

Estimate. Then find the sum. Check whether your answer is reasonable.

14. Estimate: _____

$$\begin{array}{r} 837 \\ +\ 46 \\ \hline \end{array}$$

15. Estimate: _____

$$\begin{array}{r} 396 \\ +\ 108 \\ \hline \end{array}$$

16. Estimate: _____

$$\begin{array}{r} 551 \\ +\ 279 \\ \hline \end{array}$$

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English Spanish

Name _____

Compare Fractions with the Same Denominator

11.4

Learning Target: Compare fractions that have the same denominator.

Success Criteria:

- I can model fractions that have the same denominator.
- I can use the numerators to compare fractions.
- I can explain how to compare fractions that have the same denominator.

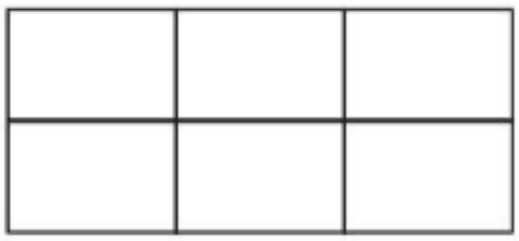
FLORIDA STANDARDS
MAFS.3.NF.1.3d

Explore and Grow

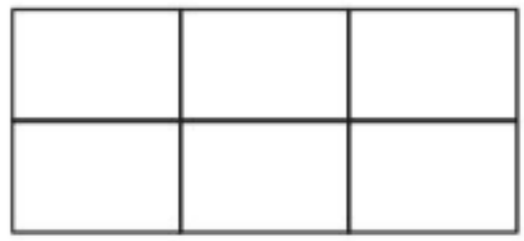
Color to show each fraction. Circle the greater fraction.

$\frac{1}{4}$

$\frac{3}{4}$



$\frac{5}{6}$



$\frac{2}{6}$

MP **Construct Arguments** Explain to your partner how you can compare fractions with the same denominator.

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English Spanish

Think and Grow: Compare Fractions That Have the Same Denominator

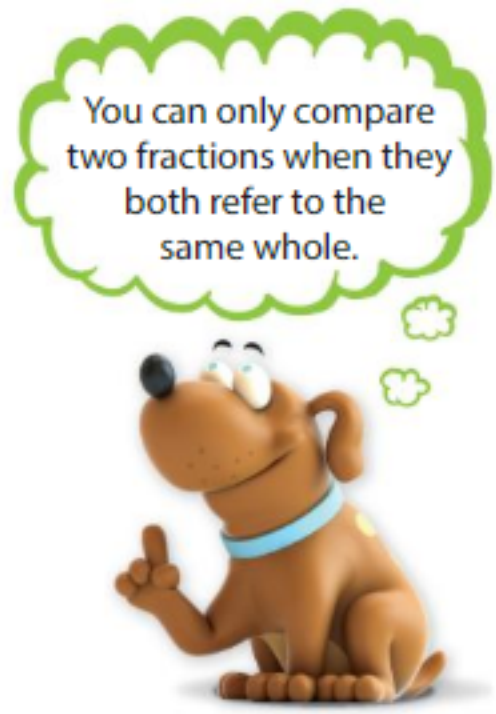
Example Compare $\frac{3}{8}$ and $\frac{7}{8}$.

One Way: Use Fraction Strips.

The fractions have the same denominator, 8.

Three $\frac{1}{8}$s is $\frac{3}{8}$. Seven $\frac{1}{8}$s is $\frac{7}{8}$. Shade the Fraction Strips.

	1							
$\frac{3}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
$\frac{7}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$



More $\frac{1}{8}$s are shaded to show $\frac{7}{8}$.

So, $\frac{3}{8}$ is _____ $\frac{7}{8}$, and $\frac{3}{8}$ ◯ $\frac{7}{8}$.

Another Way: When the denominators are the same, the whole is divided into the same number of equal parts. So, look at the numerators 3 and 7 to compare. The fraction with the greater numerator is the greater fraction.

Because 3 ◯ 7, $\frac{3}{8}$ ◯ $\frac{7}{8}$.

Show and Grow

Shade to compare the fractions.

1.

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

$\frac{5}{6}$ ◯ $\frac{2}{6}$

2.

1		
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

$\frac{1}{3}$ ◯ $\frac{3}{3}$

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English Spanish

Name _____

Apply and Grow: Practice

Shade to compare the fractions.

3.

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

$\frac{5}{8} \bigcirc \frac{3}{8}$

4.

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

$\frac{2}{4} \bigcirc \frac{2}{4}$

Compare.

5. $\frac{2}{3} \bigcirc \frac{3}{3}$

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

7. $\frac{3}{8} \bigcirc \frac{1}{8}$

8. $\frac{4}{6} \bigcirc \frac{2}{6}$

9. $\frac{5}{8} \bigcirc \frac{6}{8}$

10. $\frac{0}{4} \bigcirc \frac{1}{4}$

11. MP **Number Sense** Which statements are true?

$\frac{2}{3} \stackrel{?}{<} \frac{3}{3}$ $\quad$ $\frac{5}{6} \stackrel{?}{>} \frac{1}{6}$

$\frac{3}{4} \stackrel{?}{>} \frac{2}{4}$ $\quad$ $\frac{2}{2} \stackrel{?}{<} \frac{1}{2}$

12. **Writing** How can you show that $\frac{3}{8}$ is less than $\frac{6}{8}$?

13. MP **Structure** Which statement correctly compares the fraction of circles shaded in Group A to the fraction of circles shaded in Group B?

Group A

Group B

$\frac{3}{10} > \frac{6}{10}$ $\quad$ $\frac{6}{10} > \frac{3}{10}$ $\quad$ $\frac{5}{10} > \frac{8}{10}$ $\quad$ $\frac{5}{10} < \frac{3}{10}$

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English Spanish

Think and Grow: Modeling Real Life

Newton and Descartes have the same number of chores. Newton finishes $\frac{2}{3}$ of his chores. Descartes finishes $\frac{1}{3}$ of his chores. Who finishes more of his chores?

Model:

_____ finishes more of his chores.

Explain:

Show and Grow

14. At the pet store, a green lizard is $\frac{5}{6}$ foot long. A brown lizard is $\frac{6}{6}$ foot long. You pick up the longer lizard. Which lizard do you pick up?

15. You and a friend each have a burrito. The burritos are the same size. You eat $\frac{3}{4}$ of your burrito. Your friend eats $\frac{1}{4}$ of his burrito. Who has less burrito left to eat? Explain.

16. DIG DEEPER! You walk $\frac{5}{8}$ of the distance to the library from your home. Your friend walks $\frac{5}{8}$ of the distance to school from his home. You walk a greater distance than your friend. Explain how this is possible.

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English Spanish

Name _____

Homework & Practice 11.4

Learning Target: Compare fractions that have the same denominator.

Example Compare $\frac{4}{6}$ and $\frac{1}{6}$.

One Way: Use Fractions Strips.

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

More $\frac{1}{6}$s are shaded to show $\frac{4}{6}$.

So, $\frac{4}{6}$ is greater than $\frac{1}{6}$ and $\frac{4}{6} > \frac{1}{6}$.

Another Way:

When the denominators are the same, the whole is divided into the same number of equal parts. So, look at the numerators to compare. The fraction with the greater numerator is the greater fraction.

Because $4 > 1$, $\frac{4}{6} > \frac{1}{6}$.

Shade to compare the fractions.

1.

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

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

2.

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

$\frac{1}{2} \bigcirc \frac{2}{2}$

Compare.

3. $\frac{5}{8} \bigcirc \frac{7}{8}$

4. $\frac{6}{6} \bigcirc \frac{5}{6}$

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

6. $\frac{2}{4} \bigcirc \frac{4}{4}$

7. $\frac{0}{3} \bigcirc \frac{1}{3}$

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

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English Spanish

9. **YOU BE THE TEACHER** Your friend says $\frac{3}{4} > \frac{2}{4}$. Is your friend correct? Explain.

10. **Logic** Two fractions are equivalent and have the same denominator. What must be true about the numerators of the fractions?

Open-Ended Write a number to make the statement true.

11. $\frac{\square}{8} < \frac{6}{8}$

$\square$ = _____

12. $\frac{\blacktriangle}{4} > \frac{2}{4}$

$\blacktriangle$ = _____

13. $\frac{\bullet}{6} < \frac{4}{6}$

$\bullet$ = _____

14. **Modeling Real Life** You and your friend had the same number of baby teeth. You have lost $\frac{3}{4}$ of your baby teeth. Your friend has lost $\frac{2}{4}$ of her baby teeth. Who has lost more teeth?

15. **Modeling Real Life** Two classes each paint a mural. The murals are the same size. The third-grade class paints $\frac{5}{8}$ of one mural. The fourth-grade class paints $\frac{7}{8}$ of the other mural. Which class has less left to paint? Explain.

Review & Refresh

Find the product.

16. $9 \times 80 =$ _____

17. $5 \times 30 =$ _____

18. $6 \times 40 =$ _____

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English Spanish

Name _____

Compare Fractions with the Same Numerator

11.5

Learning Target: Compare fractions that have the same numerator.

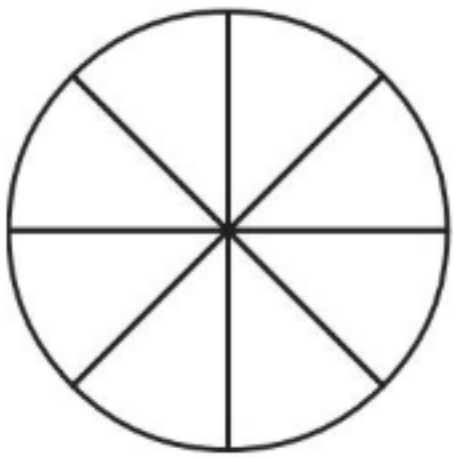
Success Criteria:

- I can model fractions that have the same numerator.
- I can use the denominators to compare fractions.
- I can explain how to compare fractions that have the same numerator.

FLORIDA STANDARDS
MAFS.3.NF.1.3d

Explore and Grow

Color to show each fraction. Circle the greater fraction.



$\frac{1}{8}$

$\frac{1}{3}$

MP **Precision** How can you use Fraction Strips to check your answer? Draw to show.

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English Spanish

Think and Grow: Compare Fractions That Have the Same Numerator

Example Compare $\frac{2}{4}$ and $\frac{2}{6}$.

One Way: Use Fraction Strips.

Both fractions have the same numerator, 2. Two $\frac{1}{4}$s is $\frac{2}{4}$. Two $\frac{1}{6}$s is $\frac{2}{6}$.

Shade the Fraction Strips. Compare the parts.

Think: $\frac{1}{6}$ is not as long as $\frac{1}{4}$.

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

So, $\frac{2}{4}$ is _____ $\frac{2}{6}$, and $\frac{2}{4}$ ◯ $\frac{2}{6}$.

Another Way: When the numerators are the same, look at the denominators 4 and 6 to compare the sizes of the parts.

- The more parts the whole is divided into, the smaller the parts are.
- The fewer parts the whole is divided into, the larger the parts are.

The fraction with the greater denominator is the lesser fraction.

So, $\frac{1}{4}$ is _____ $\frac{1}{6}$, and $\frac{2}{4}$ ◯ $\frac{2}{6}$.

Show and Grow

Shade to compare the fractions.

1.

	1						
	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	
	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$\frac{3}{6}$ ◯ $\frac{3}{8}$

2.

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

$\frac{2}{4}$ ◯ $\frac{2}{3}$

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Name _____

Apply and Grow: Practice

Shade to compare the fractions.

3.

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

$\frac{2}{2} \bigcirc \frac{2}{3}$

4.

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

$\frac{1}{6} \bigcirc \frac{1}{3}$

Compare.

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

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

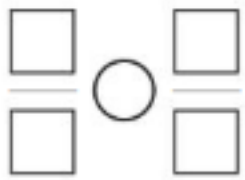
7. $\frac{6}{8} \bigcirc \frac{6}{8}$

8. $\frac{2}{3} \bigcirc \frac{2}{4}$

9. $\frac{8}{8} \bigcirc \frac{8}{8}$

10. $\frac{3}{4} \bigcirc \frac{3}{3}$

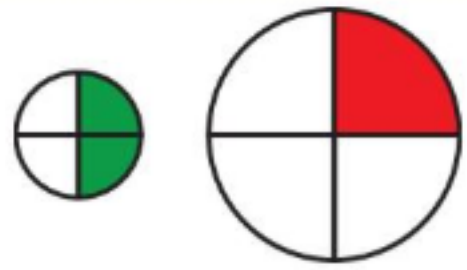
11. Use the models to compare two fractions that have the same numerators.



1							
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	

12. You spend $\frac{2}{3}$ of an hour playing soccer on Wednesday. You spend $\frac{2}{6}$ of an hour playing soccer on Friday. On which day do you spend more time playing soccer? Explain.

13. **YOU BE THE TEACHER** Your friend says $\frac{1}{4} > \frac{1}{2}$ because $\frac{1}{4}$ of one circle is bigger than $\frac{1}{2}$ of the other circle. Is your friend correct? Explain.



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English Spanish

Think and Grow: Modeling Real Life

Newton and Descartes have piggy banks that are the same size. Newton fills $\frac{3}{4}$ of his bank with pennies. Descartes fills $\frac{3}{6}$ of his bank with pennies. Whose bank is filled more?

Model:

Explain: _____ bank is filled more.

Show and Grow

14. You use $\frac{1}{3}$ of a bottle of glitter for an art project. Your friend uses $\frac{1}{4}$ of a bottle for his art project. The bottles are the same size. Who uses more glitter?

15. A train and a plane are traveling the same distance from New York to Pittsburgh. The train completes $\frac{5}{8}$ of its journey. The plane completes $\frac{5}{6}$ of its journey. Which is farther away from Pittsburgh? Explain.

16. **DIG DEEPER!** You cut a piece of lasagna that is $\frac{1}{8}$ of a tray. Your friend cuts a piece of lasagna that is $\frac{1}{6}$ of a tray. Your piece is larger than your friend's piece. Explain how this is possible.

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English Spanish

Name _____

Homework & Practice 11.5

Learning Target: Compare fractions that have the same numerator.

Example Compare $\frac{3}{8}$ and $\frac{3}{3}$.

One Way: Use Fraction Strips.

Shade the Fraction Strips.
Compare the parts.

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

So, $\frac{3}{8}$ is less than $\frac{3}{3}$,
and $\frac{3}{8} < \frac{3}{3}$.

Another Way: When the numerators are the same, look at the denominators 8 and 3 to compare the sizes of the parts.

- The more parts the whole is divided into, the smaller the parts are.
- The fewer parts the whole is divided into, the larger the parts are.

So, $\frac{1}{8}$ is less than $\frac{1}{3}$, and $\frac{3}{8} < \frac{3}{3}$.

Shade to compare the fractions.

1.

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

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

2.

1			
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$

$\frac{2}{4} \bigcirc \frac{2}{8}$

Compare.

3. $\frac{1}{8} \bigcirc \frac{1}{4}$

4. $\frac{6}{6} \bigcirc \frac{6}{8}$

5. $\frac{2}{6} \bigcirc \frac{2}{3}$

6. $\frac{4}{8} \bigcirc \frac{4}{6}$

7. $\frac{2}{3} \bigcirc \frac{2}{4}$

8. $\frac{3}{8} \bigcirc \frac{3}{6}$

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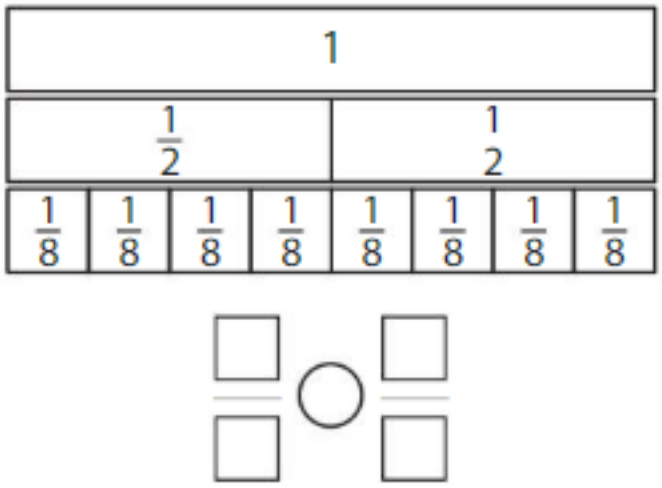
9. Use the models to compare two fractions that have the same numerators.



10. **YOU BE THE TEACHER** Newton says that if two fractions have the same numerator, then the fraction with the greater denominator is the greater fraction. Is Newton correct? Explain.

11. **Writing** How is comparing fractions with the same numerator similar to comparing fractions with the same denominator? How is it different?

12. **Modeling Real Life** You play a video game for $\frac{1}{2}$ of an hour. Your friend plays the video game for $\frac{1}{6}$ of an hour. Who plays the video game longer? Explain.

13. **Modeling Real Life** Two cars have the same-sized gasoline tank. Tank A is $\frac{4}{6}$ full. Tank B is $\frac{4}{8}$ full. Which tank is less full? Explain.

Review & Refresh

Plot the fraction on the number line.

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

15. $\frac{2}{3}$

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English Spanish

Name _____

Compare Fractions on a Number Line

11.6

Learning Target: Use a number line to compare fractions.

Success Criteria:

- I can plot fractions on a number line.
- I can tell which fraction is closer to 0.
- I can compare fractions on a number line.

FLORIDA STANDARDS

MAFS.3.NF.1.3c
MAFS.3.NF.1.3d

Explore and Grow

Use Fraction Strips to plot each fraction on the number line. Circle the greater fraction.

$\frac{2}{8}$ $\frac{7}{8}$

MP **Construct Arguments** Tell your partner how to use a number line to compare the fractions.

$\frac{1}{7} \bigcirc \frac{3}{7}$

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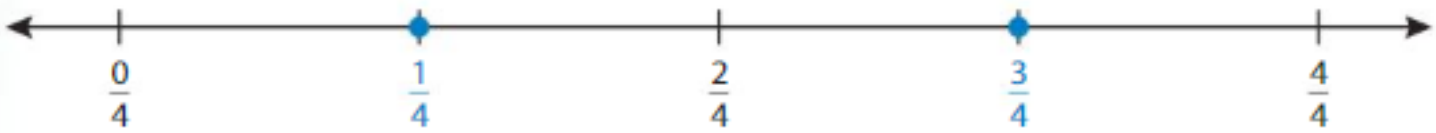
English Spanish

Think and Grow: Compare Fractions on a Number Line

On a number line, fractions to the left are less than fractions to the right. Fractions to the right are greater than fractions to the left.

Example Use a number line to compare $\frac{3}{4}$ and $\frac{1}{4}$.

Plot the fractions on a number line. Both have the same denominator.

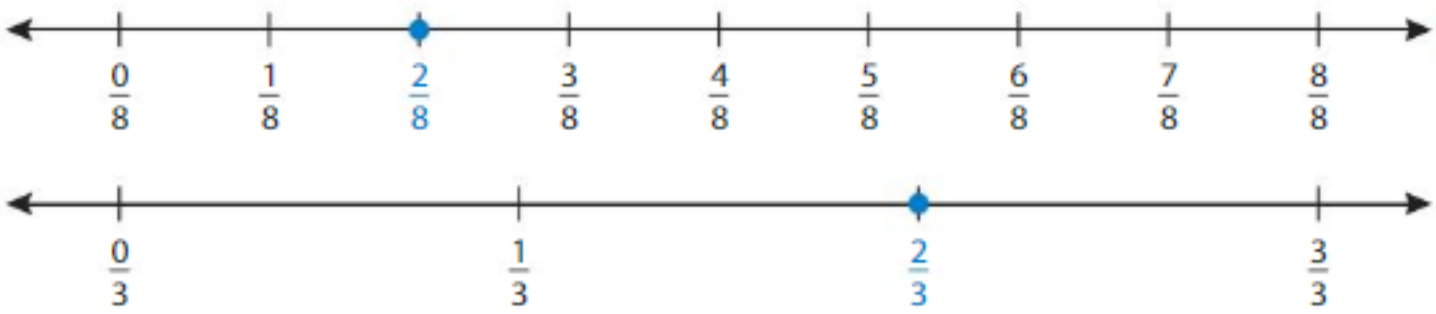


$\frac{3}{4}$ is to the _____ of $\frac{1}{4}$. So, $\frac{3}{4}$ ◯ $\frac{1}{4}$.

Looking at the number line, $\frac{1}{4}$ is closer to $\frac{0}{4}$, or 0, and $\frac{3}{4}$ is closer to $\frac{4}{4}$, or 1.

Example Use number lines to compare $\frac{2}{8}$ and $\frac{2}{3}$.

Plot each fraction on a number line. Both fractions have the same numerator.

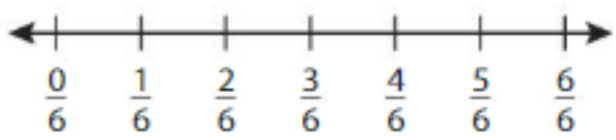


$\frac{2}{8}$ is to the _____ of $\frac{2}{3}$. So, $\frac{2}{8}$ ◯ $\frac{2}{3}$.

Show and Grow

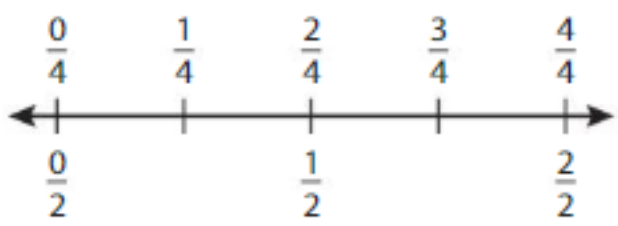
Use the number line to compare the fractions.

1.



$\frac{5}{6}$ ◯ $\frac{4}{6}$

2.



$\frac{1}{2}$ ◯ $\frac{2}{4}$

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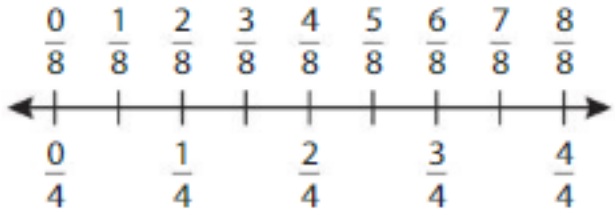
English Spanish

Name _____

Apply and Grow: Practice

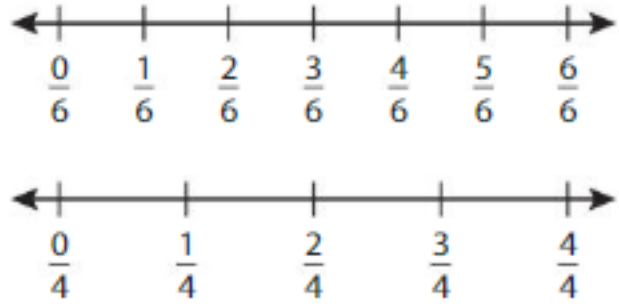
Compare.

3.



$\frac{3}{4} \bigcirc \frac{6}{8}$

4.



$\frac{4}{6} \bigcirc \frac{4}{4}$

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

6. $\frac{2}{8} \bigcirc \frac{2}{6}$

7. $\frac{4}{8} \bigcirc \frac{1}{2}$

8. $\frac{4}{4} \bigcirc \frac{4}{6}$

9. $\frac{5}{8} \bigcirc \frac{7}{8}$

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

11. Write a fraction that is greater than $\frac{5}{6}$.

12. Write a fraction that is less than $\frac{3}{4}$.

13. Newton buys $\frac{1}{4}$ pound of cheese. Descartes buys $\frac{3}{4}$ pound of cheese. Who buys more cheese?

14. MP **Number Sense** Which fractions are greater than $\frac{2}{4}$?

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

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Think and Grow: Modeling Real Life

Does the recipe call for more salt or more pepper?

Models:

The recipe calls for more _____.

Explain:

Vegetable Soup

- 2 cups chicken broth
- $\frac{3}{2}$ cups tomato juice
- $\frac{1}{2}$ cup chopped celery
- $\frac{1}{2}$ cup chopped onion
- 1 cup diced tomatoes
- 1 cup water
- 1 cup diced potatoes
- $\frac{1}{4}$ cup corn kernels
- $\frac{2}{3}$ cup chopped green beans
- $\frac{3}{4}$ cup diced carrots
- $\frac{3}{8}$ teaspoon Creole seasoning
- $\frac{3}{4}$ teaspoon lemon juice
- $\frac{1}{2}$ teaspoon salt
- $\frac{1}{4}$ teaspoon pepper

Show and Grow

15. Does the recipe above call for more Creole seasoning or more lemon juice?

16. You and your friend each catch a fish. Your fish is $\frac{5}{3}$ feet long, and your friend's fish is $\frac{2}{3}$ foot long. Whose fish is shorter? Explain.

17. DIG DEEPER! You eat $\frac{4}{8}$ of a quesadilla. Your friend eats $\frac{2}{8}$ of a different quesadilla. Can you tell who ate more quesadilla? Explain.

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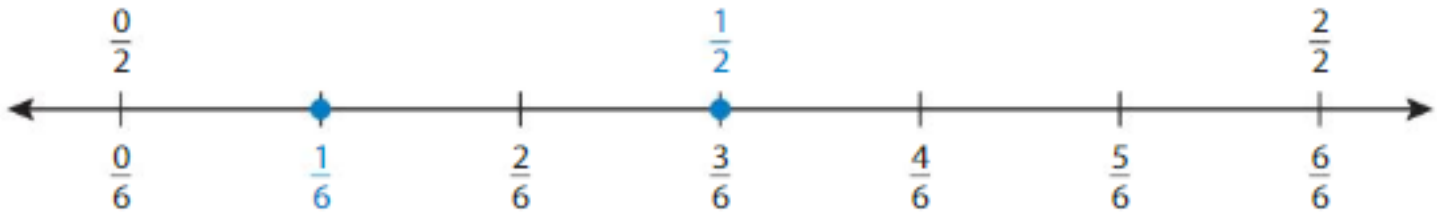
Name _____

Homework & Practice 11.6

Learning Target: Use a number line to compare fractions.

Example Use a number line to compare $\frac{1}{2}$ and $\frac{1}{6}$.

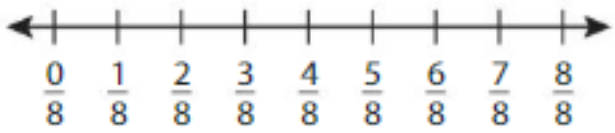
Plot the fractions on a number line. Both fractions have the same numerator.



$\frac{1}{2}$ is to the right of $\frac{1}{6}$. So, $\frac{1}{2} > \frac{1}{6}$.

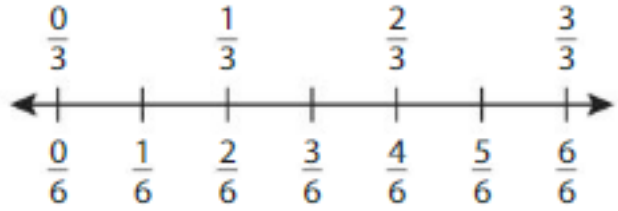
Use the number line to compare the fractions.

1.



$\frac{2}{8} \bigcirc \frac{5}{8}$

2.



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

Compare.

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

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

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

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

7. $\frac{2}{4} \bigcirc \frac{2}{6}$

8. $\frac{1}{6} \bigcirc \frac{3}{6}$

9. $\frac{4}{8} \bigcirc \frac{4}{4}$

10. $\frac{1}{6} \bigcirc \frac{1}{3}$

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

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12. Write a fraction that is greater than $\frac{1}{3}$.

13. Write a fraction that is less than $\frac{1}{2}$.

14. **Writing** Explain how to compare $\frac{2}{3}$ and $\frac{4}{3}$ on a number line.

15. **Number Sense** Which fractions are less than $\frac{4}{6}$?

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

Modeling Real Life Use the recipe shown.

16. Does the recipe call for more butter or more sugar? Explain.

Banana Bread

- 3 bananas
- $\frac{1}{3}$ cup melted butter
- $\frac{2}{3}$ cup sugar
- 1 egg
- $\frac{3}{4}$ teaspoon vanilla
- $\frac{1}{2}$ teaspoon baking soda
- $\frac{3}{2}$ cups flour
- $\frac{3}{4}$ cup nuts

17. Does the recipe call for less flour or less nuts? Explain.

Review & Refresh

Find the missing number.

18. $98 + \_\_\_\_ = 98$

19. $52 + (\_\_\_\_ + 16) = (52 + 28) + 16$

20. $33 + \_\_\_\_ + 46 = 33 + 46$

21. $14 + 67 = 67 + \_\_\_\_$

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Name _____

Compare Fractions 11.7

Learning Target: Compare fractions.

Success Criteria:

- I can choose a strategy to compare two fractions.
- I can compare two fractions.

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Explore and Grow

Use a strategy to find the greater fraction.

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

Use a different strategy to check your answer.

MP **Construct Arguments** Tell your partner which strategy you prefer. Explain.

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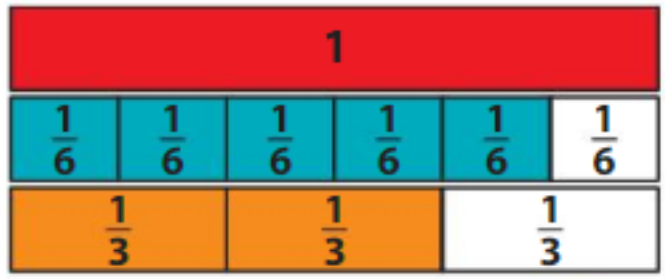
Think and Grow: Compare Fractions

Example Compare $\frac{5}{6}$ and $\frac{2}{3}$.



Use Fraction Strips.

In some cases, it is easier to compare the parts that are missing. Notice that each fraction is 1 part away from being equivalent to 1. Compare the missing pieces.

Because $\frac{1}{6} \bigcirc \frac{1}{3}$, a larger piece is missing from $\frac{2}{3}$.

So, $\frac{5}{6} \bigcirc \frac{2}{3}$.

The fraction with the larger missing piece is the lesser fraction.

Example Compare $\frac{3}{8}$ and $\frac{5}{8}$.

The denominators are the same. Compare the numerators, 3 and 5.

Because $3 \bigcirc 5$, $\frac{3}{8} \bigcirc \frac{5}{8}$.

Example Compare $\frac{4}{6}$ and $\frac{4}{8}$.

The numerators are the same. Look at the denominators 6 and 8 to compare the sizes of the parts. The fraction with the greater denominator is the lesser fraction.

So, $\frac{4}{6} \bigcirc \frac{4}{8}$.

Show and Grow

Compare.

1. $\frac{1}{2} \bigcirc \frac{1}{8}$

2. $\frac{3}{4} \bigcirc \frac{5}{6}$

3. $\frac{0}{6} \bigcirc \frac{0}{2}$

4. $\frac{8}{8} \bigcirc \frac{7}{8}$

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Name _____

Apply and Grow: Practice

Compare.

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

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

7. $\frac{7}{8} \bigcirc \frac{3}{4}$

8. $\frac{1}{6} \bigcirc \frac{3}{6}$

9. $\frac{1}{4} \bigcirc \frac{2}{8}$

10. $\frac{2}{4} \bigcirc \frac{2}{8}$

11. $\frac{1}{2} \bigcirc \frac{4}{8}$

12. $\frac{2}{3} \bigcirc \frac{5}{6}$

13. $\frac{1}{3} \bigcirc \frac{2}{3}$

Complete the statement.

14. $\frac{3}{6} < \frac{\square}{\square}$

15. $\frac{2}{8} > \frac{\square}{\square}$

16. $\frac{1}{4} < \frac{\square}{\square}$

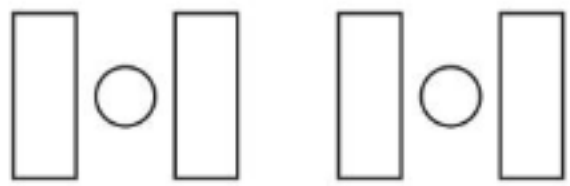
17. Newton and Descartes have the same-sized lunch.

Newton eats $\frac{2}{3}$ of his lunch. Descartes eats $\frac{1}{2}$ of his lunch.

Who eats more of his lunch?

18. DIG DEEPER! Use the fractions and symbols to make two true statements.

$\frac{3}{4}$ $\quad$ $\frac{1}{2}$ $\quad$ $\frac{5}{6}$ $\quad$ $\frac{1}{3}$ $\quad$ $>$ $\quad$ $<$



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Think and Grow: Modeling Real Life

Newton walks $\frac{3}{8}$ mile to school. Descartes walks $\frac{5}{6}$ mile to school.

Who walks farther to school?

Understand the problem:

Make a plan:

Solve:

_____ walks farther to school.

Show and Grow

19. Two apartment buildings have the same number of floors. New carpeting is installed on $\frac{2}{3}$ of the floors in Building A and $\frac{3}{6}$ of the floors in Building B. Which building has more floors with new carpeting?

20. Newton buys $\frac{5}{8}$ pound of peanuts and $\frac{1}{2}$ pound of cashews. Which weighs less? Explain.

21. DIG DEEPER! You are painting a backdrop for a school play. You paint $\frac{1}{3}$ of the backdrop blue. You paint more of the backdrop yellow than blue. What fraction can represent the part of the backdrop that is yellow? Explain.

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Name _____

Homework & Practice 11.7

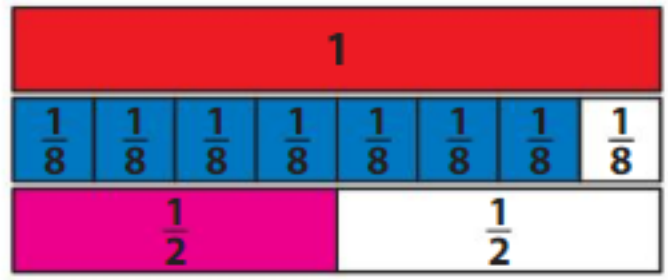
Learning Target: Compare fractions.

Example Compare $\frac{7}{8}$ and $\frac{1}{2}$.

Use Fraction Strips.

Notice that each fraction is 1 part away from being equivalent to 1. Compare the missing pieces.

Because $\frac{1}{8} < \frac{1}{2}$, a larger piece is missing from $\frac{1}{2}$.



So, $\frac{7}{8} > \frac{1}{2}$.

Compare.

1. $\frac{2}{4} \bigcirc \frac{2}{6}$
2. $\frac{1}{2} \bigcirc \frac{3}{6}$
3. $\frac{1}{4} \bigcirc \frac{3}{4}$
4. $\frac{4}{6} \bigcirc \frac{6}{6}$
5. $\frac{3}{4} \bigcirc \frac{6}{8}$
6. $\frac{1}{2} \bigcirc \frac{7}{8}$
7. $\frac{3}{6} \bigcirc \frac{3}{8}$
8. $\frac{2}{3} \bigcirc \frac{3}{4}$

Complete the statement.

9. $\frac{5}{6} < \frac{\square}{\square}$
10. $\frac{7}{8} > \frac{\square}{\square}$
11. $\frac{2}{4} < \frac{\square}{\square}$

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12. **Number Sense** Which statements are true?

$\frac{3}{8} \overset{?}{<} \frac{3}{4}$ $\frac{2}{3} \overset{?}{>} \frac{7}{8}$ $\frac{3}{4} \overset{?}{<} \frac{1}{4}$ $\frac{1}{2} \overset{?}{>} \frac{1}{4}$

13. **Writing** Explain how to compare $\frac{2}{3}$ and $\frac{7}{8}$ using missing pieces.

14. **Modeling Real Life** Newton and Descartes each have a phone with the same amount of storage. Newton's storage is $\frac{3}{4}$ full. Descartes's storage is $\frac{2}{8}$ full. Whose phone has more storage left?

15. **DIG DEEPER!** A restaurant wants to serve two different-sized hamburgers. The larger hamburger will be $\frac{1}{2}$ pound. Name a fraction that could represent the other hamburger's size.

Review & Refresh

16. There are 37 students on a bus. The bus stops 5 times. Seven students get off at each stop. How many students are left on the bus?

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Name _____

Compare and Order Fractions 11.8

Learning Target: Compare and order fractions.

Success Criteria:

- I can choose a strategy to compare three fractions.
- I can order three fractions from least to greatest.
- I can order three fractions from greatest to least.

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MAFS.3.NF.1.3d

Explore and Grow

Plot the fractions on the number line. Order the fractions from least to greatest.

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

$\frac{\square}{\square}$, $\frac{\square}{\square}$, $\frac{\square}{\square}$

Least Greatest

MP **Reasoning** How can you use the fraction $\frac{1}{2}$ to compare and order fractions?

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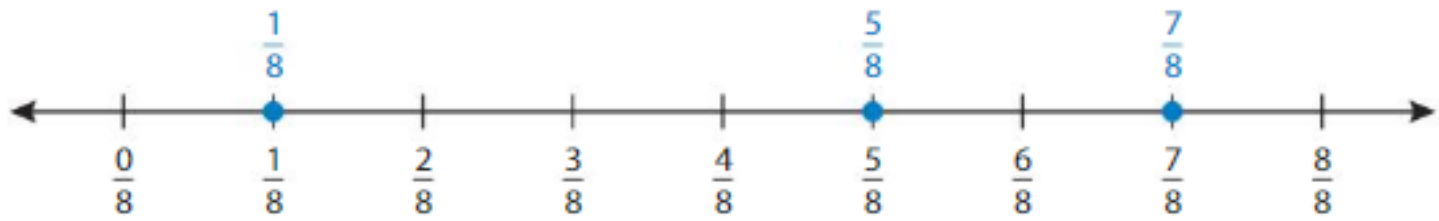
Think and Grow: Compare and Order Fractions

Example Order the fractions $\frac{7}{8}$, $\frac{1}{8}$, and $\frac{5}{8}$ from least to greatest.

Plot the fractions on the number line. All 3 fractions have the same denominator, 8.



$\frac{\square}{8}$ is farthest to the left. $\frac{\square}{8}$ is farthest to the right.

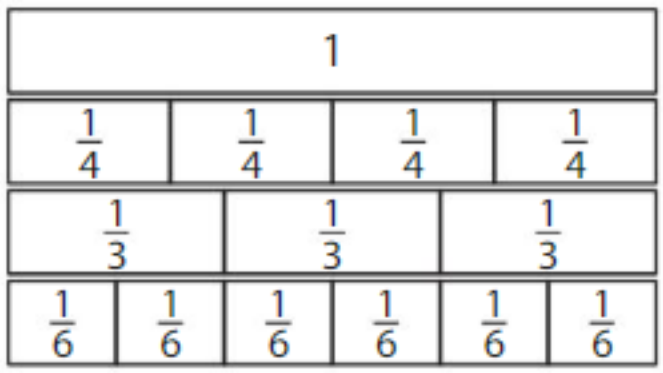
$\frac{\square}{8}$ is between the other two fractions.

So, the order from least to greatest is $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$.

Think: $\frac{7}{8}$ is close to 1. $\frac{1}{8}$ is close to 0. $\frac{5}{8}$ is close to $\frac{4}{8}$, or $\frac{1}{2}$.

Example Order the fractions $\frac{2}{4}$, $\frac{2}{3}$, and $\frac{2}{6}$ from least to greatest.

Use Fraction Strips. All three fractions have the same numerator, 2.



Shade the Fraction Strips. Compare the parts.

$\frac{2}{\square}$ is the shortest. $\frac{2}{\square}$ is the longest.

$\frac{2}{\square}$ is between the other two fractions.

So, the order from least to greatest is $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$.

Show and Grow

1. Order the fractions $\frac{3}{3}$, $\frac{3}{4}$, and $\frac{3}{8}$ from least to greatest. $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

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Apply and Grow: Practice

Order the fractions from least to greatest.

2. $\frac{1}{6}, \frac{6}{6}, \frac{5}{6}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

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

4. $\frac{4}{4}, \frac{0}{4}, \frac{3}{4}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

5. $\frac{6}{1}, \frac{6}{6}, \frac{6}{8}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

Order the fractions from greatest to least.

6. $\frac{4}{8}, \frac{3}{8}, \frac{6}{8}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

7. $\frac{2}{4}, \frac{2}{1}, \frac{2}{6}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

8. MP **Reasoning** Three fractions have the same denominator. How do you know which fraction is the greatest?

9. **Open-Ended** Write a fraction that is between $\frac{2}{8}$ and $\frac{2}{3}$.

10. MP **Patterns** The fractions below are in order from least to greatest. Describe and complete the pattern.

$\frac{2}{8}, \frac{2}{7}, \frac{2}{6}, \frac{2}{5}, \frac{2}{\square}, \frac{2}{\square}, \frac{2}{\square}, \frac{2}{\square}$

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Think and Grow: Modeling Real Life

A construction crew replaces $\frac{1}{8}$ mile of a road on Monday, $\frac{1}{4}$ mile of the road on Tuesday, and $\frac{1}{6}$ mile of the road on Wednesday. On which day does the crew replace the longest piece of the road? On which day does the crew replace the shortest piece? Explain.

Model:

The crew replaces the longest piece of the road on _____

and the shortest piece on _____.

Explain:

Show and Grow

11. You place three plants in order from shortest to tallest. A cactus is $\frac{4}{6}$ foot tall, a fern is $\frac{4}{4}$ foot tall, and an aloe vera plant is $\frac{4}{8}$ foot tall. Which plant is first? Which plant is last? Explain.

12. You measure the lengths of three spiders. The longest one is $\frac{3}{4}$ inch long. The shortest one is $\frac{1}{4}$ inch long. What is a possible length for the third spider? Explain.

13. DIG DEEPER! You are ordering three fractions. You know which fraction is the greatest and which fraction is the least. What do you know about the third fraction?

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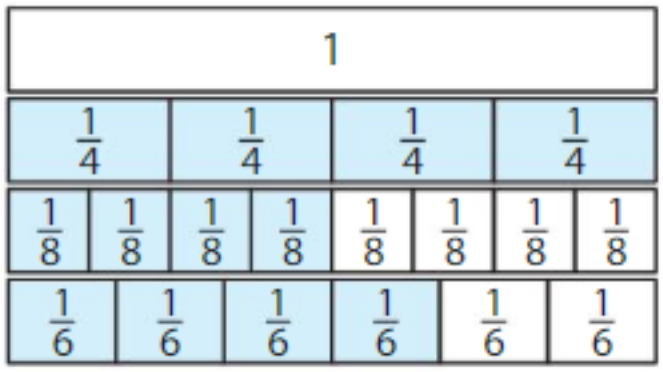
Homework & Practice 11.8

Learning Target: Compare and order fractions.

Example Order the fractions $\frac{4}{4}$, $\frac{4}{8}$, and $\frac{4}{6}$ from least to greatest.

Use Fraction Strips. All three fractions have the same numerator, 4. Shade the fraction strips. Compare the parts.



$\frac{4}{8}$ is the shortest. $\frac{4}{4}$ is the longest.

$\frac{4}{6}$ is between the other two fractions.

So, the order from least to greatest is $\frac{4}{8}, \frac{4}{6}, \frac{4}{4}$.

Order the fractions from least to greatest.

1. $\frac{8}{4}, \frac{8}{1}, \frac{8}{3}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

2. $\frac{2}{4}, \frac{1}{4}, \frac{3}{4}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

3. $\frac{16}{8}, \frac{3}{8}, \frac{5}{8}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

4. $\frac{4}{2}, \frac{4}{8}, \frac{4}{6}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

Order the fractions from greatest to least.

5. $\frac{1}{6}, \frac{1}{4}, \frac{1}{8}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

6. $\frac{0}{2}, \frac{2}{2}, \frac{1}{2}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

7. $\frac{3}{3}, \frac{1}{3}, \frac{2}{3}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

8. $\frac{6}{3}, \frac{6}{8}, \frac{6}{2}$ $\frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

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9. **Reasoning** Three fractions have the same numerator. How do you know which fraction is the greatest?

10. **Precision** Which set of fractions is ordered from least to greatest?

$\frac{2}{1}, \frac{2}{6}, \frac{2}{10}$ $\frac{1}{4}, \frac{3}{4}, \frac{2}{4}$

$\frac{5}{6}, \frac{4}{6}, \frac{0}{6}$ $\frac{5}{6}, \frac{5}{5}, \frac{5}{3}$

11. **Modeling Real Life** You survey your classmates about their favorite subject. $\frac{5}{8}$ of the students choose math, $\frac{1}{8}$ choose reading, and $\frac{2}{8}$ choose science. Which subject receives the most votes? Which subject receives the least votes? Explain.

12. **Modeling Real Life** A carpenter has three drill bits. The thickest one is $\frac{3}{4}$ inch. The thinnest one is $\frac{3}{8}$ inch. What is a possible width for the third drill bit? Explain.

Review & Refresh

13. You clean lunch tables. There are 6 rows of tables with 7 tables in each row. How many tables do you clean?

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English Spanish

Name _____

Performance Task 11

1. You invite five friends to dinner. You start making chili using the recipe shown at 4:00.

a. What time should you tell your friends the chili will be ready?

b. Which ingredient do you use the same amount of as crushed garlic?

c. Do you use more chopped green pepper or onion?

d. How many ounces of beans do you use in all?

Vegetarian Chili

Number of Servings: 16

2 cups water
$\frac{1}{8}$ cup olive oil
$\frac{2}{8}$ cup crushed garlic
2 cups carrots
cups diced tomatoes
$\frac{1}{2}$ cup onion
$\frac{3}{4}$ cup chopped green pepper
$\frac{1}{4}$ cup chili powder
2 8-ounce cans pinto beans
2 8-ounce cans black beans
Salt and pepper to taste

Prep time: 20 minutes
Cook time: 40 minutes

e. You know there is $\frac{1}{4}$ cup of diced tomatoes in each serving. How many cups of diced tomatoes do you need?

f. You and your friends each eat 2 servings of chili. How many servings are left? Write an equation to solve. Use letters to represent unknown numbers.

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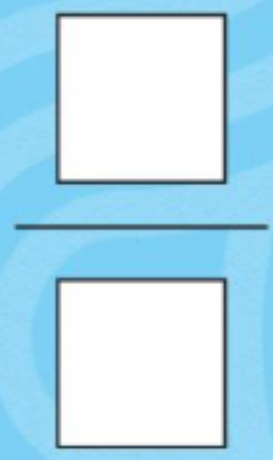
Fraction Spin and Compare

Directions:

1. Players take turns.
2. On your turn, spin both spinners. Cover a box that makes the statement true.
3. If there are no fractions left that make the statement true, then you lose your turn.
4. Play until all boxes are covered.
5. The player with the most boxes covered wins!



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

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English Spanish

Name _____

Chapter Practice 11

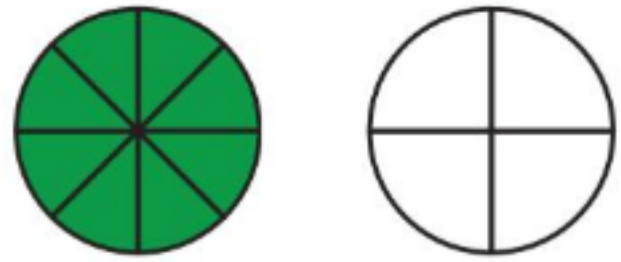
11.1 Equivalent Fractions

Use the models to find an equivalent fraction. Both models show the same whole.

1.

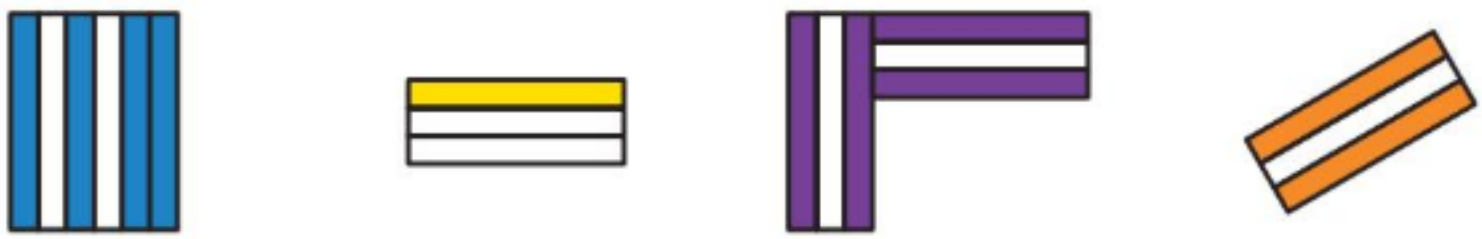
$\frac{1}{4} = \frac{\square}{8}$

2.



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

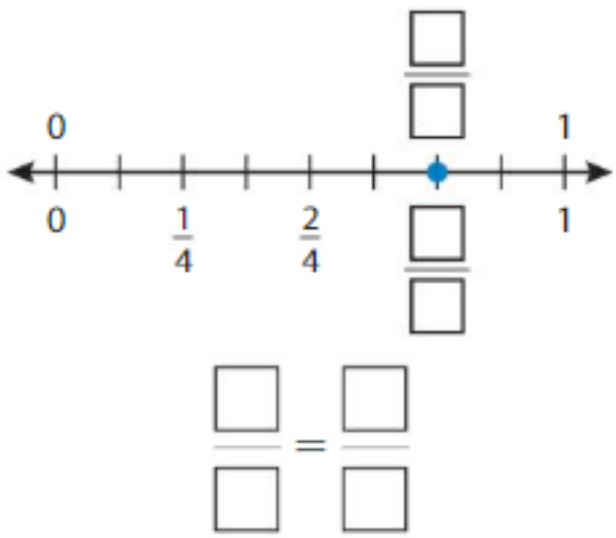
3. Which One Doesn't Belong? Which one does *not* belong with the other three?



11.2 Equivalent Fractions on a Number Line

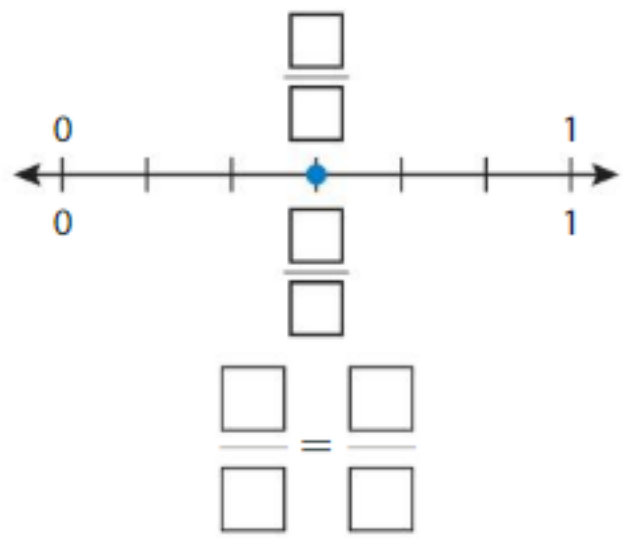
Write two fractions that name the point shown.

4.



$\frac{\square}{\square} = \frac{\square}{\square}$

5.



$\frac{\square}{\square} = \frac{\square}{\square}$

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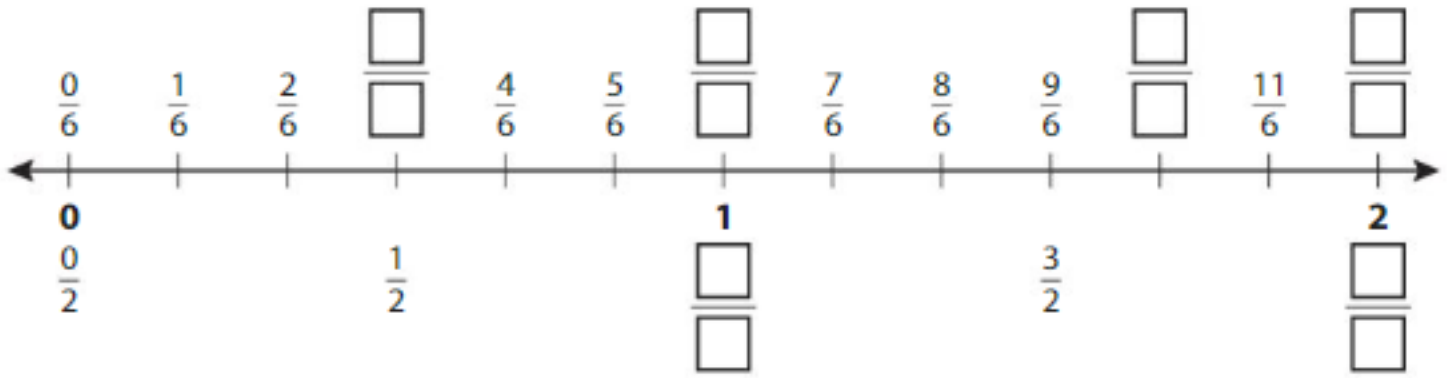
11.3 Relate Fractions and Whole Numbers

6. Complete the number line. Then write equivalent fractions for the numbers 1 and 2.



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

Write two equivalent fractions for the whole number.

7. $2 = \frac{\square}{4} = \frac{\square}{6}$ **8.** $6 = \frac{\square}{3} = \frac{\square}{4}$ **9.** $4 = \frac{\square}{2} = \frac{\square}{8}$

Write the equivalent whole number.

10. $\frac{4}{4} = \frac{1}{1} = \square$ **11.** $\frac{24}{8} = \frac{12}{4} = \square$ **12.** $\frac{24}{6} = \frac{16}{4} = \square$

11.4 Compare Fractions with the Same Denominator

Shade to compare the fractions.

13.

1		
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

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

14.

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

$\frac{1}{2} \bigcirc \frac{2}{2}$

Compare.

15. $\frac{2}{4} \bigcirc \frac{3}{4}$ **16.** $\frac{1}{3} \bigcirc \frac{1}{3}$ **17.** $\frac{1}{6} \bigcirc \frac{5}{6}$

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11.5 Compare Fractions with the Same Numerator

Compare.

18. $\frac{1}{8} \bigcirc \frac{1}{6}$

19. $\frac{4}{6} \bigcirc \frac{4}{4}$

20. $\frac{2}{3} \bigcirc \frac{2}{4}$

21. $\frac{3}{6} \bigcirc \frac{3}{8}$

22. $\frac{6}{8} \bigcirc \frac{6}{6}$

23. $\frac{3}{8} \bigcirc \frac{3}{4}$

24. Modeling Real Life Your glass of orange juice is $\frac{1}{2}$ full. Your friend's glass of orange juice is $\frac{1}{3}$ full. Your friend has more orange juice. Explain how this is possible.

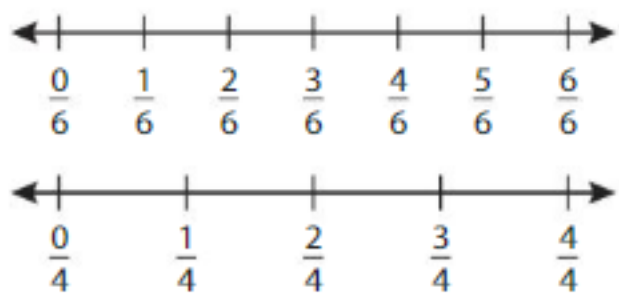
11.6 Compare Fractions on a Number Line

Compare.

25.

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

26.



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

27. $\frac{4}{8} \bigcirc \frac{4}{6}$

28. $\frac{5}{8} \bigcirc \frac{3}{8}$

29. $\frac{5}{6} \bigcirc \frac{2}{6}$

30. Write a fraction that is greater than $\frac{1}{8}$.

31. Write a fraction that is less than $\frac{2}{3}$.

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11.7 Compare Fractions

Compare.

32. $\frac{1}{1} \bigcirc \frac{1}{2}$

33. $\frac{3}{6} \bigcirc \frac{5}{6}$

34. $\frac{4}{6} \bigcirc \frac{4}{8}$

35. $\frac{1}{3} \bigcirc \frac{2}{3}$

36. $\frac{2}{2} \bigcirc \frac{2}{8}$

37. $\frac{3}{4} \bigcirc \frac{7}{8}$

38. MP **Number Sense** Which statements are true?

$\frac{2}{3} \stackrel{?}{<} \frac{7}{8}$ $\quad \frac{1}{8} \stackrel{?}{<} \frac{1}{4}$ $\quad \frac{5}{6} \stackrel{?}{>} \frac{3}{4}$ $\quad \frac{1}{2} \stackrel{?}{>} \frac{0}{2}$

11.8 Compare and Order Fractions

Order the fractions from least to greatest.

39. $\frac{4}{4}, \frac{4}{8}, \frac{4}{6}$ $\quad \frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

40. $\frac{3}{6}, \frac{5}{6}, \frac{1}{6}$ $\quad \frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

Order the fractions from greatest to least.

41. $\frac{1}{3}, \frac{0}{3}, \frac{2}{3}$ $\quad \frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

42. $\frac{2}{6}, \frac{2}{1}, \frac{2}{4}$ $\quad \frac{\square}{\square}, \frac{\square}{\square}, \frac{\square}{\square}$

43. **Modeling Real Life** You, your friend, and your cousin have the same-sized aquarium. You fill your aquarium $\frac{2}{3}$ full, your friend fills hers $\frac{2}{6}$ full, and your cousin fills his $\frac{2}{4}$ full. Which aquarium is the least full? Which aquarium is the most full? Explain.

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12 Understand Time, Liquid Volume, and Mass

- What is the weather today? What do you think the weather will be at 5 o'clock?
- The sun rises at 6:32. How do you know whether the time is A.M. or P.M.? How can knowing how much time has passed help you in your daily life?

Chapter Learning Target:
Understand time and measurement.

Chapter Success Criteria:
- I can explain how to tell time to the nearest minute.
- I can find the appropriate way to measure an object.
- I can solve time interval problems.
- I can compare one measurement to another.

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Name _____

12 Vocabulary

Review Words

A.M.

P.M.

Organize It

Use the review words to complete the graphic organizer.

Morning	Night
Eat breakfast.	Read a book.
7:00 _____	7:00 _____

Define It

Use your vocabulary cards to identify the word. Find the word in the word search.

1. The standard metric unit used to measure mass
2. The standard metric unit used to measure liquid volume
3. The amount of matter in an object

M	T	U	E	K	L	U	G
S	A	E	R	T	I	V	R
O	N	S	E	Q	U	I	A
M	A	L	S	S	A	T	M
V	C	R	P	F	L	D	E
F	S	Y	D	O	K	H	G
K	I	L	I	T	E	R	M

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Chapter 12 Vocabulary Cards

elapsed time

gram (g)

kilogram (kg)

liquid volume

liter (L)

mass

milliliter (mL)

time interval

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The standard metric unit used to measure mass

The mass of a paper clip is about 1 **gram**.

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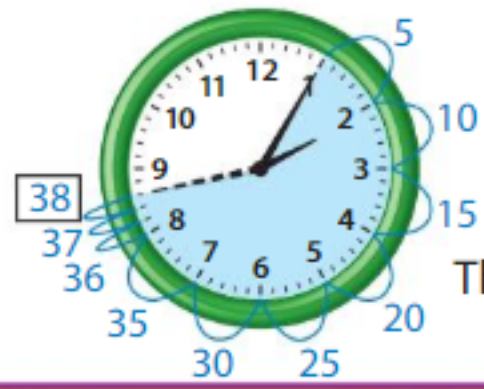
The amount of time that passes from a starting time to an ending time



The elapsed time is 38 minutes.

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The amount of liquid in a container

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A metric unit used to measure mass

The mass of a baseball bat is about 1 **kilogram**.

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The amount of matter in an object

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The standard metric unit used to measure liquid volume

There is about 1 **liter** of liquid in the water bottle.

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An amount of time

15 minutes

30 minutes

57 minutes

42 minutes

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A metric unit used to measure liquid volume

20 drops of liquid from an eyedropper is about 1 **milliliter**.

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Name _____

Time to the Nearest Minute 12.1

Learning Target: Tell time to the nearest minute.

Success Criteria:

- I can write the time to the nearest minute.
- I can write the time in multiple ways.
- I can explain how to tell time to the nearest minute.

FLORIDA STANDARDS
MAFS.3.MD.1.1

Explore and Grow

Write each time.

_____ P.M.

_____ P.M.

MP **Precision** How did you find each time?

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Think and Grow: Tell Time to the Nearest Minute

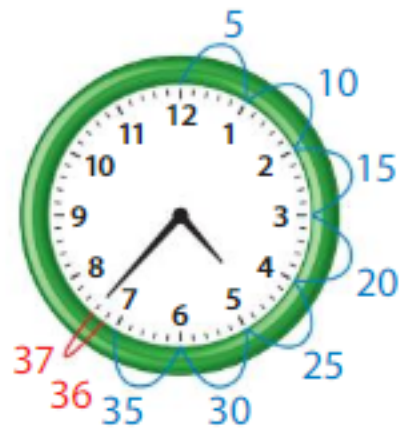
Example What time does the clock show?
What are some other ways to say the time?

It takes 1 minute for the minute hand to move from one mark to the next.

Step 1: Look at the hour hand.

- The hour hand is between the 4 and the 5.
- So, it is after 4:00 and before 5:00.

Step 2: Look at the minute hand.



- Count by 5s from the 12 to the 7.
- Count on by 1s from the 7 to the mark where the minute hand is pointing.

So, the time is _____ : _____.

Count the minutes after the hour. Say, "_____ minutes after 4."

Count the minutes before the next hour. Say, "_____ minutes before 5."

Show and Grow

Write the time. Write another way to say the time.

1.

2.

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Name _____

Apply and Grow: Practice

Write the time. Write another way to say the time.

3.

4.

5.

Write the time. Write two other ways to say the time.

6.

7.

8.

Write the time.

9. 24 minutes after 3

10. 13 minutes before 9

11. 7 minutes before 1

12. **Which One Doesn't Belong?** Which time does *not* belong with the other three?

27 minutes after 4

33 minutes before 5

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English Spanish

Think and Grow: Modeling Real Life

A train leaves a station at 12 minutes before 8. Show and write the time the train leaves the station.

Show and Grow

13. You go for a walk at 26 minutes after 2. Show and write the time you go for a walk.

14. DIG DEEPER! Newton and Descartes start playing a game at 3:11. They play for 47 minutes. Show and write the time they stop playing the game.

15. You eat breakfast at 34 minutes before 9. You eat dinner at 42 minutes after 6. Show and write the times. Circle *A.M.* or *P.M.*

Breakfast

A.M. P.M.

Dinner

A.M. P.M.

Which time is earlier? Explain.

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English Spanish

Name _____

Homework & Practice 12.1

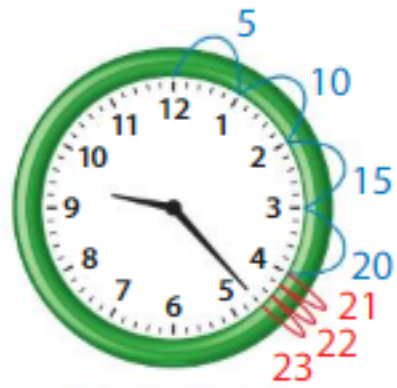
Learning Target: Tell time to the nearest minute.

Example What time does the clock show?

What are some other ways to say the time?

Step 1: Look at the hour hand.

- The hour hand is between the 9 and the 10.
- So, it is after 9:00 and before 10:00.



Step 2: Look at the minute hand.

- Count by 5s from the 12 to the 4.
- Count on by 1s from the 4 to the mark where the minute hand is pointing.

The time is 23 minutes after 9,

or 37 minutes before 10.

Write the time. Write another way to say the time.

1.

2.

Write the time. Write two other ways to say the time.

3.

4.

5.

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Write the time.

6. 32 minutes after 10

7. 8 minutes before 6

8. 16 minutes before 8

9. **Writing** Explain when you would stop counting by 5s and start counting by 1s when telling time to the nearest minute.

10. MP **Precision** Explain where the hands of an analog clock point at 1:27.

11. **Modeling Real Life** You start practicing taekwondo 19 minutes before 7. Show and write the time you start practicing.

12. DIG DEEPER! Some friends start jumping rope at 12:22. They jump rope for 24 minutes. Show and write the time they stop jumping rope.

Review & Refresh

Find the difference. Check whether your answer is reasonable.

13. Estimate: _____

$$\begin{array}{r} 526 \\ -\ 203 \\ \hline \end{array}$$

14. Estimate: _____

$$\begin{array}{r} 945 \\ -\ 362 \\ \hline \end{array}$$

15. Estimate: _____

$$\begin{array}{r} 412 \\ -\ 145 \\ \hline \end{array}$$

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English Spanish

Name _____

Measure Elapsed Time within the Hour

12.2

Learning Target: Measure elapsed time, in minutes, within the same hour.

Success Criteria:

- I can identify start and end times.
- I can find the amount of time that passes between two times.
- I can explain how to find elapsed time within the same hour.

FLORIDA STANDARDS
MAFS.3.MD.1.1

Explore and Grow

Write each time. How much time has passed?

Start

A.M.

End

A.M.

_____ minutes have passed.

MP **Reasoning** How many more minutes until a half hour has passed? Explain.

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Think and Grow: Measure Elapsed Time

Elapsed time is the amount of time that passes from a starting time to an ending time.

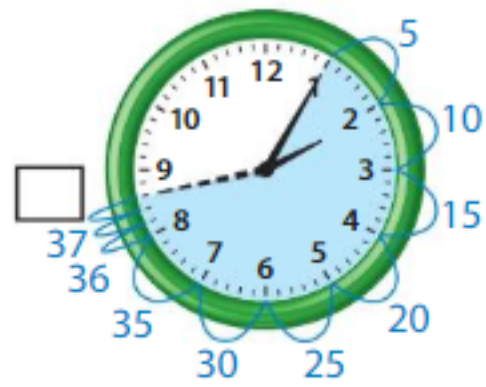
Example Find the elapsed time between 2:05 P.M. and 2:43 P.M.

One Way: Use an analog clock.

Step 1: Draw the starting time.

Step 2: Mark the ending time.

Step 3: Count the minutes by 5s and 1s until you reach the ending time.



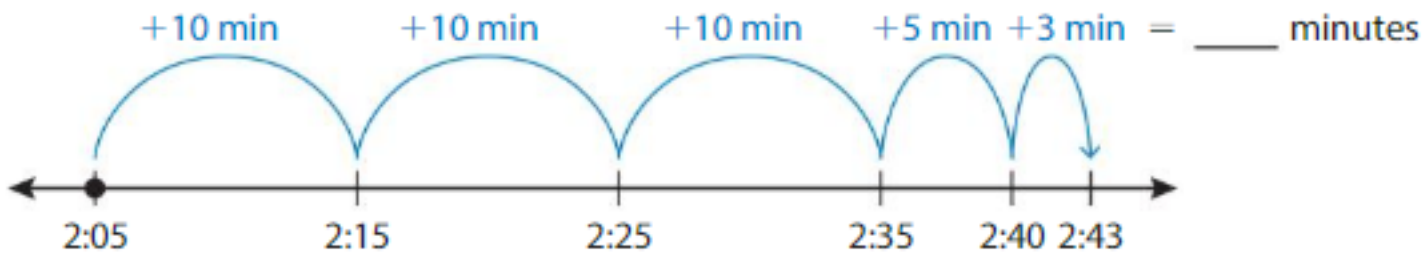
So, the elapsed time is _____ minutes.

Another Way: Use a number line.

Step 1: Plot the starting time on a number line.

Step 2: Count on until you reach the ending time.

Step 3: Add the jumps to find the elapsed time.



= _____ minutes

So, the elapsed time is _____ minutes.

Show and Grow

Find the elapsed time.

1. Start: 11:10 A.M. End: 11:34 A.M.

_____ minutes

2. Start: 1:25 P.M. End: 1:56 P.M.

_____ minutes

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English Spanish

Name _____

Apply and Grow: Practice

Find the elapsed time.

3. Start: 7:30 A.M. End: 7:53 A.M.

_____ minutes

4. Start: 5:15 P.M. End: 5:41 P.M.

_____ minutes

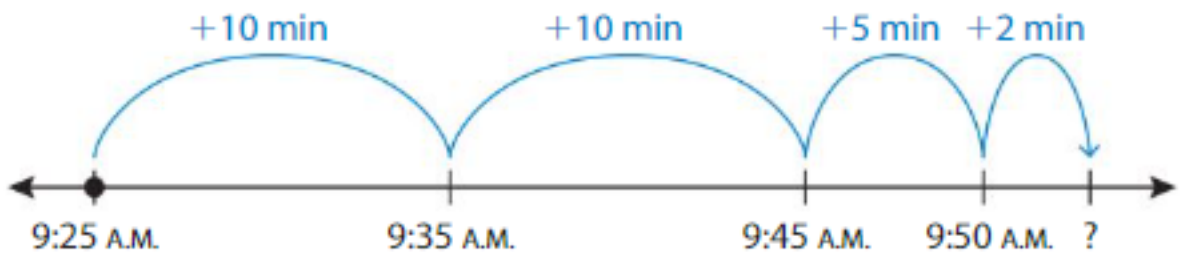
5. Start: 10:50 A.M. End: 10:59 A.M.

_____ minutes

6. Start: 8:05 P.M. End: 8:37 P.M.

_____ minutes

7. **Structure** Find the elapsed time and the end time.



Elapsed time: _____ minutes End time: _____ A.M.

8. **Writing** Explain how to use an analog clock to find the elapsed time from 6:20 P.M. to 6:38 P.M.

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Think and Grow: Modeling Real Life

A magic show starts at 3:15 P.M. It ends at 3:57 P.M. How long is the show?

Model:

The show is _____ minutes long.

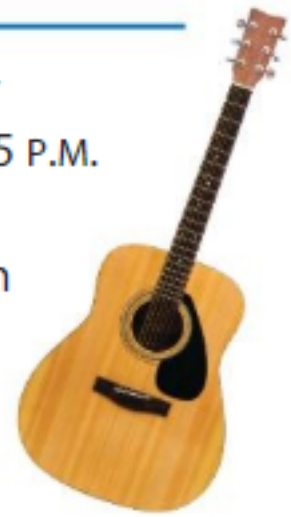
Show and Grow

9. A nature walk starts at 10:30 A.M. It ends at 10:46 A.M. How long is the walk?

10. An Internet video is 13 minutes long. You start the video at 1:23 P.M. At what time does the video end?

11. DIG DEEPER! You play hopscotch for 27 minutes. You stop at 4:40 P.M. At what time did you start playing hopscotch?

12. You practice the guitar from 12:06 P.M. to 12:35 P.M. on Saturday and from 9:25 A.M. to 9:47 A.M. on Sunday. How long did you spend practicing the guitar in all?



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Name _____

Homework & Practice 12.2

Learning Target: Measure elapsed time, in minutes, within the same hour.

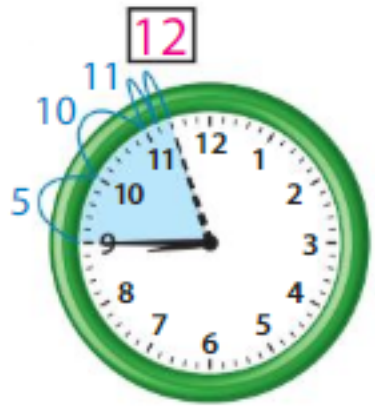
Example Find the elapsed time from 8:45 A.M. to 8:57 A.M.

One Way: Use an analog clock.

Step 1: Draw the starting time.

Step 2: Mark the ending time.

Step 3: Count the minutes by 5s and 1s until you reach the ending time.



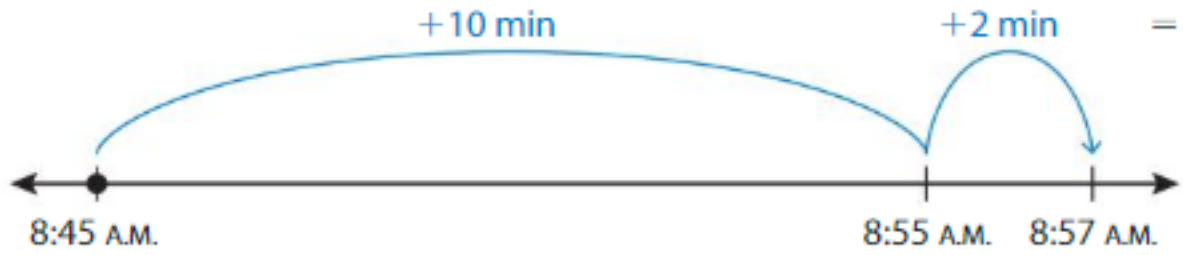
So, the elapsed time is 12 minutes.

Another Way: Use a number line.

Step 1: Plot the starting time on a number line.

Step 2: Count on until you reach the ending time.

Step 3: Add the jumps to find the elapsed time.



So, the elapsed time is 12 minutes.

Find the elapsed time.

1. Start: 6:05 A.M. End: 6:44 A.M.

_____ minutes

2. Start: 3:30 P.M. End: 3:51 P.M.

_____ minutes

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Find the elapsed time.

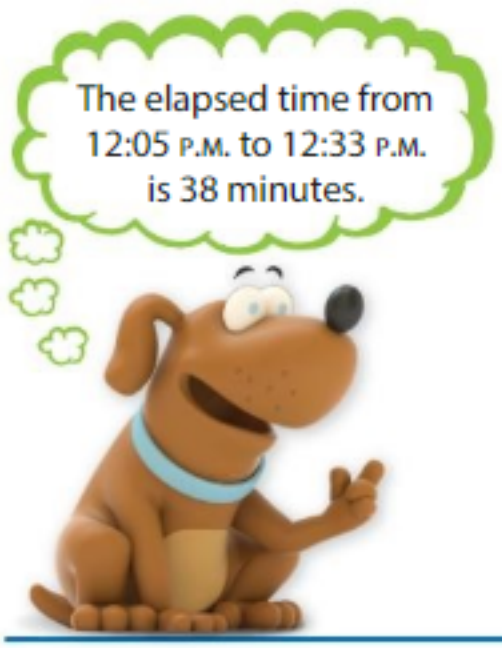
3. Start: 4:10 P.M. End: 4:56 P.M.

_____ minutes

4. Start: 9:25 A.M. End: 9:33 A.M.

_____ minutes

5. **YOU BE THE TEACHER** Is Newton correct? Explain.



6. **Writing** Explain how to use a number line to find the elapsed time from 10:15 A.M. to 10:49 A.M.

7. **Modeling Real Life** Your teacher places a beaker of water over a burner at 2:15 P.M. The water boils at 2:26 P.M. How long does it take for the water to boil?

8. **Modeling Real Life** Descartes plays outside from 1:32 P.M. to 1:45 P.M. He stops to eat lunch. Then he plays outside from 2:20 P.M. to 2:47 P.M. How long did he play outside in all?

Review & Refresh

9. There are 134 third graders and 106 fourth graders at a state park. There are 220 fewer teachers than students at the park. How many teachers are at the park?

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English Spanish

Name _____

Measure Elapsed Time Across the Hour

12.3

Learning Target: Measure elapsed time, in minutes, from one hour to the next.

Success Criteria:

- I can identify start and end times.
- I can find the amount of time that passes between two times.
- I can explain how to find elapsed time from one hour to the next.

FLORIDA STANDARDS
MAFS.3.MD.1.1

Explore and Grow

Write each time. How much time has passed?

Start

_____ P.M.

End

_____ P.M.

_____ minutes have passed.

MP **Critique Reasoning** Newton says one hour has passed because the digit for the hour increased by 1. Why is Newton incorrect?

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Think and Grow: Measure Elapsed Time Across an Hour

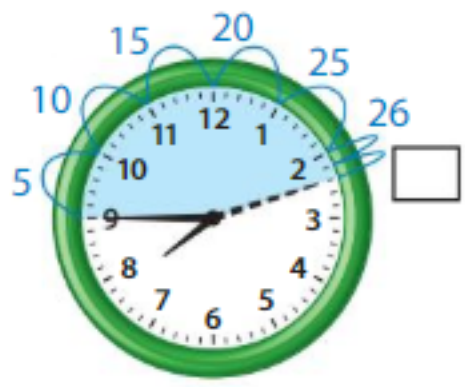
Example Find the elapsed time between 7:45 A.M. and 8:12 A.M.

One Way: Use an analog clock.

Step 1: Draw the starting time.

Step 2: Mark the ending time.

Step 3: Count the minutes by 5s and 1s until you reach the ending time.



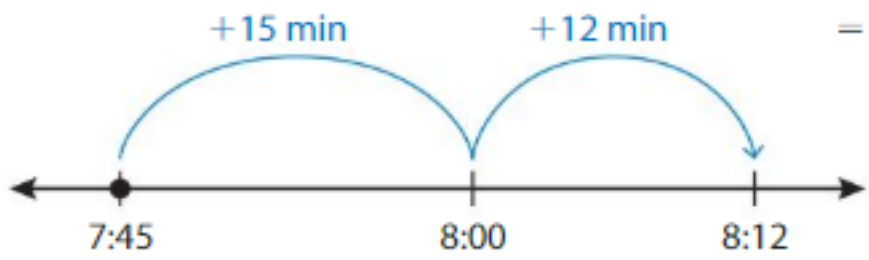
So, the elapsed time is _____ minutes.

Another Way: Use a number line.

Step 1: Plot the starting time on a number line.

Step 2: Count the minutes from the starting time to the next hour. Then count the minutes from the hour to the ending time.

Step 3: Add the jumps to find the elapsed time.



= _____ minutes

So, the elapsed time is _____ minutes.

Show and Grow

Find the elapsed time.

1. Start: 3:55 P.M. End: 4:41 P.M.

_____ minutes

2. Start: 10:40 A.M. End: 11:19 A.M.

_____ minutes

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English Spanish

Name _____

Apply and Grow: Practice

Find the elapsed time.

3. Start: 1:35 P.M. End: 2:11 P.M.

_____ minutes

4. Start: 8:50 A.M. End: 9:34 A.M.

_____ minutes

5. Start: 5:25 P.M. End: 6:07 P.M.

_____ minutes

6. Start: 11:30 A.M. End: 12:26 P.M.

_____ minutes

7. MP **Reasoning** Find the end time.

Start: 4:42 P.M.

Elapsed time: 38 minutes

End: _____ P.M.

8. **Writing** Explain two different ways to find the elapsed time from 6:55 A.M. to 7:29 A.M.

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English Spanish

Think and Grow: Modeling Real Life

A volleyball game begins at 5:45 P.M. It ends at 6:17 P.M. How long is the game?

Model:

The game is _____ minutes long.

Show and Grow

9. You start playing a virtual reality game at 1:50 P.M. You stop playing at 2:09 P.M. How long do you play the game?

10. You listen to an audiobook that is 47 minutes long. The book ends at 10:25 A.M. At what time did you start the book?

11. Newton roller-skates from 11:35 A.M. to 12:12 P.M. Descartes roller-skates from 3:40 P.M. to 4:26 P.M. Who skates longer?

12. **DIG DEEPER!** You practice juggling from 10:40 A.M. to 11:04 A.M. Your friend practices juggling for the same amount of time as you. She stops at 11:21 A.M. At what time did your friend start juggling?

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English Spanish

Name _____

Homework & Practice 12.3

Learning Target: Measure elapsed time, in minutes, from one hour to the next.

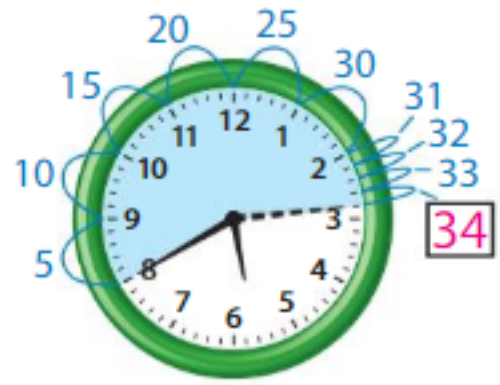
Example Find the elapsed time from 5:40 P.M. to 6:14 P.M.

One Way: Use an analog clock.

Step 1: Draw the starting time.

Step 2: Mark the ending time.

Step 3: Count the minutes by 5s and 1s until you reach the ending time.



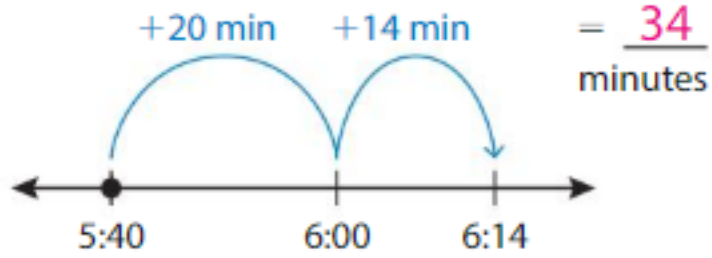
So, the elapsed time is 34 minutes.

Another Way: Use a number line.

Step 1: Plot the starting time on a number line.

Step 2: Count the minutes from the starting time to the next hour. Then count the minutes from the hour to the ending time.

Step 3: Add the jumps to find the elapsed time.



So, the elapsed time is 34 minutes.

Find the elapsed time.

1. Start: 3:50 P.M. End: 4:06 P.M.

_____ minutes

2. Start: 9:35 A.M. End: 10:23 A.M.

_____ minutes

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English Spanish

Find the elapsed time.

3. Start: 2:20 P.M. End: 3:03 P.M.

_____ minutes

4. Start: 11:15 P.M. End: 12:12 A.M.

_____ minutes

5. **YOU BE THE TEACHER** Is Descartes correct? Explain.

The elapsed time from 7:45 A.M. to 8:17 A.M. is 1 hour and 32 minutes.

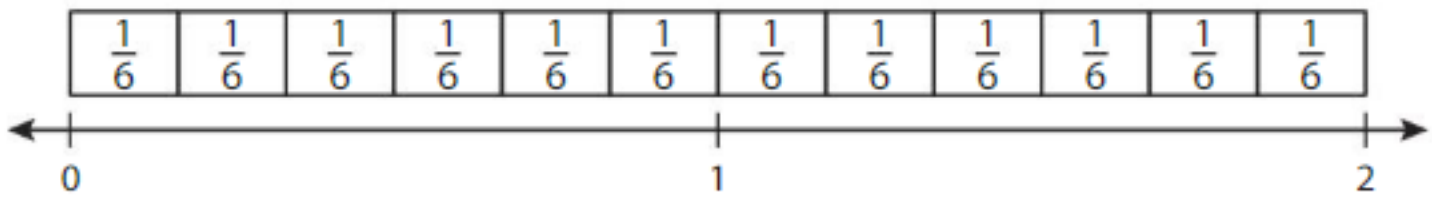
6. **Writing** Write a word problem that requires finding an elapsed time.

7. **Modeling Real Life** You start looking for animal tracks at 10:25 A.M. You find some at 11:06 A.M. How long does it take you to find the tracks?

8. **DIG DEEPER!** You create pictographs from 4:40 P.M. to 5:02 P.M. Your friend creates pictographs for the same amount of time as you. He stops at 6:16 P.M. What time did your friend start creating pictographs?

Review & Refresh

9. Plot $\frac{11}{6}$ on the number line.



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English Spanish

Name _____

Problem Solving: Time Interval Problems

12.4

Learning Target: Use the problem-solving plan to solve time interval problems.

Success Criteria:

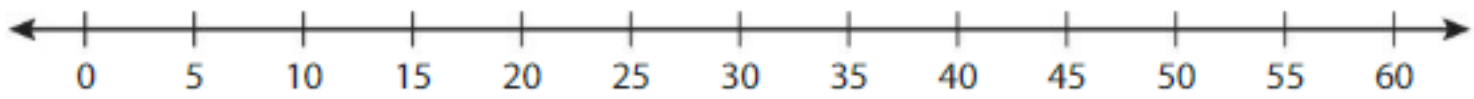
- I can understand a problem.
- I can make a plan to solve.
- I can solve a problem.

FLORIDA STANDARDS

MAFS.3.NBT.1.2
MAFS.3.MD.1.1

Explore and Grow

You wait in line for 16 minutes to ride a roller coaster. Then you wait in line for 15 minutes to ride a Ferris wheel. How much time do you spend waiting in the lines altogether?



MP **Make Sense of Problems** Write an equation for the problem. What operation did you use? Why?

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English Spanish

Think and Grow: Solve Time Interval Problems

A **time interval** is an amount of time.

Example Some friends have 60 minutes to solve a mystery. They have been working for 44 minutes. How much time do they have left to solve the mystery?

Understand the Problem

What do you know?

- Some friends have _____ minutes to solve a mystery.
- They have been working for _____ minutes.

What do you need to find?

- You need to find how much _____ they have left to solve the mystery.

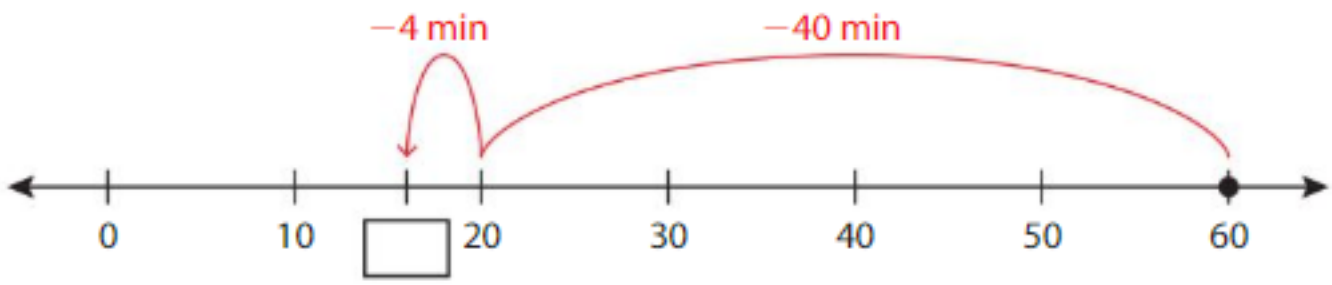
Make a Plan

How will you solve?

- Subtract _____ from _____ to find how much _____ they have left.

Solve

Use a number line to represent the problem and show the time intervals.



$60 - 44 =$ _____

So, the friends have _____ minutes left to solve the mystery.

Show and Grow

1. You spend 26 minutes playing games on a tablet and 17 minutes listening to music on a tablet. How much time do you spend using the tablet?

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English Spanish

Name _____

Apply and Grow: Practice

2. You have 30 minutes to play outside before dinner. You already played for 19 minutes. How much time do you have left to play?

3. Library class is 43 minutes long. During class, you spend 15 minutes searching for books and the rest of the time reading. How much time do you spend reading?

4. You spend 13 fewer minutes planning a constellation picture than creating it. You spend 12 minutes planning the picture. How much time do you spend creating it?

5. **DIG DEEPER!** You spend 3 hours at an adventure park. Which equations show how many minutes you spend at the park?

Remember: 1 hour is equal to 60 minutes!

$3 + 60 = 63$

$3 \times 60 = 180$

$3 \times 1 + 60 = 63$

$60 + 60 + 60 = 180$

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English Spanish

Think and Grow: Modeling Real Life

You write and illustrate a short story. You spend 36 minutes writing the story, 15 minutes drawing the pictures, and 13 minutes coloring the pictures. How many more minutes do you spend writing than illustrating?

Understand the problem:

Make a plan:

Solve:

You spend _____ more minutes writing the story.

Show and Grow

6. A play with three acts is 57 minutes long. The first act is 24 minutes long, and the second act is 19 minutes long. How long is the third act?

7. DIG DEEPER! How many more minutes do you spend playing sports after school than doing homework? How much time do you spend on all of your after-school activities?

After-School Activities	
Activity	**Time Interval**
Soccer drills	35 min
Kickball game	52 min
Math homework	23 min
Science homework	18 min

You start your math homework at 3:35 P.M. You start your science homework immediately after you finish your math homework. At what time do you finish your science homework? Explain.

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English Spanish

Name _____

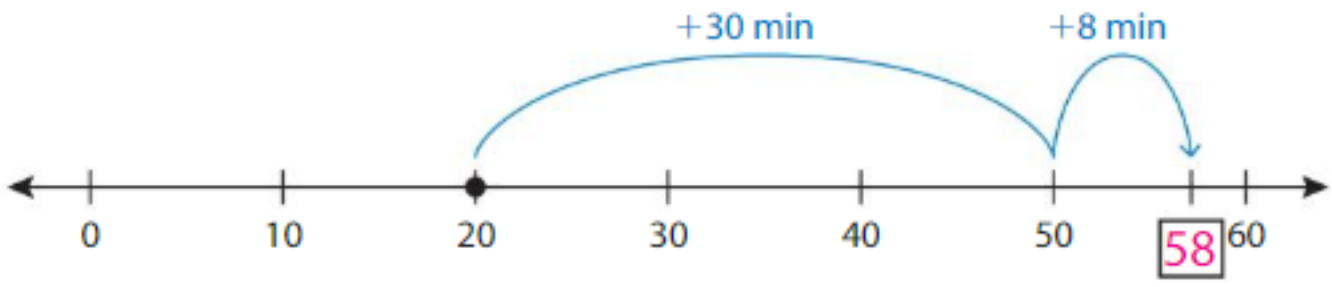
Homework & Practice 12.4

Learning Target: Use the problem-solving plan to solve time interval problems.

Example You spend 38 more minutes swimming than playing in the sand. You play in the sand for 20 minutes. How much time do you spend swimming?

Think: What do you know? What do you need to find? How will you solve?

Use a number line to represent the problem and show the time intervals.



20 + 38 = 58

So, you spend 58 minutes swimming.

1. You spend 28 fewer minutes stretching than practicing. You practice for 40 minutes. How much time do you spend stretching?

2. You spend 11 more minutes playing a board game than you do creating it. You spend 49 minutes playing the board game. How much time do you spend creating the board game?

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English Spanish

3. Open-Ended A dog groomer has 60 minutes to give 3 dogs a bath. Each bath takes at least 15 minutes, and the first bath takes the longest. What is one way the 60 minutes can be divided among the three baths?

Bath 1: _____ minutes

Bath 2: _____ minutes

Bath 3: _____ minutes

4. Which two events can be done back-to-back in less than a half hour? Explain.

5. Modeling Real Life You have 55 minutes to find 3 items. You find the first item in 26 minutes, and you find the second item in 9 minutes. How many minutes do you have left to find the third item?

6. DIG DEEPER! How many more minutes do you spend dancing than playing musical instruments? How much time do you spend on all of your activities?

After-School Activities	
Activity	**Time Interval**
Step dance	25 min
Hip-hop dance	34 min
Play drums	22 min
Play piano	19 min

You start playing the drums at 5:25 P.M. You start playing the piano immediately after you finish playing the drums. At what time do you finish playing musical instruments? Explain.

Review & Refresh

Find the equivalent fraction.

7. $\frac{5}{5} = \frac{\square}{7}$ **8.** $\frac{1}{2} = \frac{\square}{4}$ **9.** $\frac{2}{4} = \frac{\square}{8}$ **10.** $\frac{2}{6} = \frac{\square}{3}$

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English Spanish

Name _____

Understand and Estimate Liquid Volume

12.5

Learning Target: Understand and estimate liquid volumes in metric units.

Success Criteria:

- I can tell the difference between a milliliter and a liter.
- I can identify which unit to use to measure a liquid volume.
- I can estimate a liquid volume.

FLORIDA STANDARDS
MAFS.3.MD.1.2

Explore and Grow

About how many bottles of water would fill the pot?

_____ bottles

MP **Reasoning** The bottle holds 1 liter of water. How can you estimate the number of liters of water the pot can hold?

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English Spanish

Think and Grow: Understand Liquid Volume

Liquid volume is the amount of liquid in a container.

A **liter (L)** is the standard metric unit used to measure liquid volume.

A **milliliter (mL)** is another metric unit used to measure liquid volume.

Remember *capacity* is the total amount of liquid that a container can hold.

20 drops of liquid from an eyedropper is about 1 milliliter.

There is about 1 liter of liquid in the water bottle.

1,000 milliliters = 1 liter

Example Which units should you use to measure the liquid volume, *liters* or *milliliters*? Explain.

A fishbowl contains _____ liquid than a 1-liter water bottle.

A small glass contains _____ liquid than a 1-liter water bottle.

Show and Grow

Which units should you use to measure the liquid volume, *liters* or *milliliters*? Explain.

1.

2.

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English Spanish

Name _____

Apply and Grow: Practice

Which units should you use to measure the liquid volume, *liters* or *milliliters*? Explain.

3.

4.

Choose the better estimate.

5.

250 mL 250 L

6.

15 mL 15 L

7.

30 mL 3 L

8.

4 L 40 L

9. MP **Reasoning** Match.

60 mL | 4 L | 2 L | 200 mL

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English Spanish

Think and Grow: Modeling Real Life

Use Picture A to estimate the liquid volume shown in Picture B.

Compare:

Picture A

5 L

Picture B

_____ L

The liquid volume is about _____ liters.

Show and Grow

10. Use Picture C to estimate the liquid volume shown in Picture D.

Picture C

125 mL

Picture D

_____ mL

11. DIG DEEPER! Use Picture X to estimate the liquid volumes shown in Pictures Y and Z.

Picture X

25 L

Picture Y

_____ L

Picture Z

_____ L

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English Spanish

Name _____

Homework & Practice 12.5

Learning Target: Understand and estimate liquid volumes in metric units.

Example Which units should you use to measure the liquid volume, *liters* or *milliliters*? Explain.

You should use milliliters to measure the liquid volume.

A carton contains less liquid than a 1-liter water bottle.

Which units should you use to measure the liquid volume, *liters* or *milliliters*? Explain.

1.

2.

Choose the better estimate.

3.

300 mL

300 L

4.

6 mL

6 L

5.

270 mL

27 L

6.

1 L

10 L

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English Spanish

7. Descartes wants to estimate how much water Newton used to fill his dog pool. Would 1,000 milliliters or 100 liters be a better estimate? Explain.

8. **YOU BE THE TEACHER** Your friend says the liquid volume in the bowl is less than 10 milliliters. Is your friend correct? Explain.

10 L

9. MP **Number Sense** Order the liquid volumes from least to greatest.

50 mL 5 L 2,000 mL 1 mL

10. MP **Reasoning** An elephant can hold up to 10 liters of water in its trunk. Which of the following is *not* an amount of water an elephant can hold? Explain.

1 L 1,000 mL 100 L 100 mL

11. **Modeling Real Life** Use Picture A to estimate the liquid volume shown in Picture B.

Picture A

350 mL

Picture B

_____ mL

Review & Refresh

12. Your friend saves $5 each week for 6 weeks. He spends all of the money on 3 toys that each cost the same amount. How much does each toy cost?

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English Spanish

Name _____

Measure Liquid Volume 12.6

Learning Target: Measure liquid volumes in liters and milliliters.

Success Criteria:

- I can measure a liquid volume in liters.
- I can measure a liquid volume in milliliters.
- I can measure a liquid volume in liters and milliliters.

FLORIDA STANDARDS
MAFS.3.MD.1.2

Explore and Grow

Estimate the capacities of four different containers. Then use a 1-liter beaker to fill each container with liquid. What is the actual liquid volume in each container?

Container	Estimate	Actual Liquid Volume

MP **Precision** How can you use your results to get a better estimate for a fifth container?

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English Spanish

Think and Grow: Measure Liquid Volume

Example What is the liquid volume in each container?

The liquid volume in the soup can is _____ milliliters.

The liquid volume in the coffeepot is _____ liters _____ milliliters.

Show and Grow

What is the liquid volume in the container?

1.

2.

Write the total liquid volume shown.

3.

4.

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English Spanish

Name _____

Apply and Grow: Practice

Write the total liquid volume shown.

5.

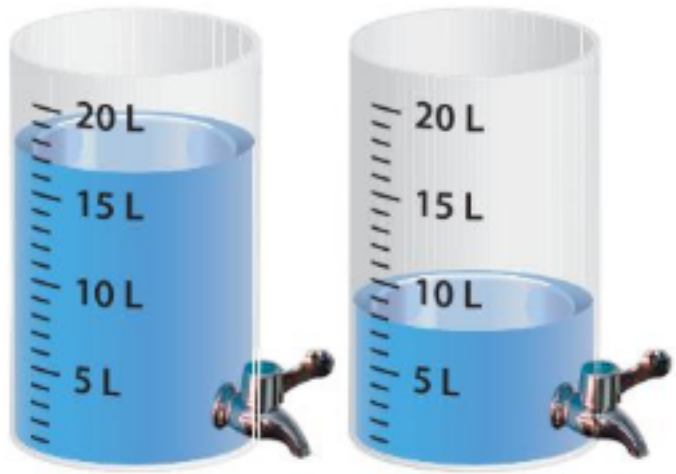
6.

7.

8.

9. Which One Doesn't Belong? Which group of beakers does *not* have the same liquid volume as the other two?

10. MP Precision How much water did the basketball team drink during practice? Explain.



Before Practice After Practice

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Think and Grow: Modeling Real Life

You drink two of the cartons of milk shown. How many milliliters of milk do you drink?

Equation:

You drink _____ milliliters of milk.

Show and Grow

11. You pour 250 milliliters of the juice shown into a cup. How many milliliters of juice are left in the jug?

12. A school custodian repaints 5 classrooms. He needs 9 liters of paint for each classroom. How many liters of paint does he need in all?

13. A baby pool holds 72 liters of water. You use an 8-liter bucket to fill the pool with water. How many times do you fill the bucket?

14. DIG DEEPER! A frozen treat tray has 6 molds. Each mold holds 90 milliliters of liquid. You mix 375 milliliters of orange juice with 175 milliliters of pineapple juice. Do you have enough juice to fill the tray? Explain.

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English Spanish

Name _____

Homework & Practice 12.6

Learning Target: Measure liquid volumes in liters and milliliters.

Example What is the liquid volume in each container?

The liquid volume in the jar is 400 milliliters.

The liquid volume in the vase is 1 liter 100 milliliters.

Write the total liquid volume shown.

1.

2.

3.

4.

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English Spanish

5. MP **Precision** You mix the two juices shown. How much juice do you have in all?

Blue Raspberry Juice Lemonade

6. **YOU BE THE TEACHER** Your friend says the liquid volume of the beaker is 100 liters. Is your friend correct? Explain.

7. **Modeling Real Life** You and your friend each drink one of the juice bottles shown. How many milliliters of juice do you and your friend drink in all?

8. **Modeling Real Life** You use 120 milliliters of water from the spray bottle shown. How many milliliters of water are left in the bottle?

215 mL

9. **Modeling Real Life** You use 20 liters of water to water a garden. You use a 5-liter watering can to water the garden. How many times do you fill the can? Explain.

10. **DIG DEEPER!** A muffin tray has 6 molds. Each mold holds 60 milliliters of batter. You make 184 milliliters of blueberry batter and 145 milliliters of banana batter. Do you have enough batter to fill the tray? Explain.

Review & Refresh

Circle the value of the underlined digit.

11.	1<u>5</u>7	5	50	500
12.	<u>9</u>02	900	9	90

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English Spanish

Name _____

Understand and Estimate Mass

12.7

Learning Target: Understand and estimate masses of objects.

Success Criteria:

- I can tell the difference between a gram and a kilogram.
- I can identify which unit to use to measure the mass of an object.
- I can estimate the mass of an object.

FLORIDA STANDARDS
MAFS.3.MD.1.2

Explore and Grow

The mass of a tennis ball is 59 grams.

The mass of an orange is 262 grams.

Which object has more mass?

MP **Reasoning** Examine a $1 bill and a $10 bill. What do you notice about the masses and the values?

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English Spanish

Think and Grow: Understand Mass

Mass is the amount of matter in an object.

A **gram (g)** is the standard metric unit used to measure mass.

A **kilogram (kg)** is another metric unit used to measure mass.

The mass of a paper clip is about 1 gram.

The mass of a baseball bat is about 1 kilogram.

1,000 grams = 1 kilogram

Example Which units should you use to measure the mass, *grams* or *kilograms?* Explain.

An apple has _____ matter than a baseball bat.

An watermelon has _____ matter than a baseball bat.

Show and Grow

Which units should you use to measure the mass, *grams* or *kilograms?* Explain.

1.

2.

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English Spanish

Name _____

Apply and Grow: Practice

Which units should you use to measure the mass, *grams* or *kilograms*? Explain.

3.

4.

Choose the better estimate.

5.

300 g 300 kg

6.

27 g 27 kg

7.

8 g 1 kg

8.

15 g 150 g

9. **YOU BE THE TEACHER** Your friend says 50 grams is a greater unit of measurement than 50 kilograms because 50 liters is greater than 50 milliliters. Is your friend correct? Explain.

10. **Reasoning** A bowling ball and a beach ball are the same size. Do the objects have about the same mass? Explain.

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English Spanish

Think and Grow: Modeling Real Life

Use the mass of the small bag of potatoes to estimate the mass of the large bag of potatoes.

Compare:

2 kg ____ kg

The mass is about ____ kilograms.

Show and Grow

11. Use the mass of the banana to estimate the mass of the bunch of bananas.

120 g ____ g

12. **DIG DEEPER!** Use the mass of the small egg carton to estimate the mass of the larger egg cartons.

290 g ____ g ____ g

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English Spanish

Name _____

Homework & Practice 12.7

Learning Target: Understand and estimate masses of objects.

Example Which units should you use to measure the mass, *grams* or *kilograms*? Explain.

You should use grams to measure the mass.

A quarter has less matter than a baseball bat.

Which units should you use to measure the mass, *grams* or *kilograms*? Explain.

1.

2.

Choose the better estimate.

3.

30 g 30 kg

4.

9 g 9 kg

5.

100 g 10 kg

6.

2 kg 20 kg

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English Spanish

7. **Logic** Which objects have a mass greater than 1 kilogram?

Pencil	Computer
Desk	Scissors
Cherry	Microwave

8. **YOU BE THE TEACHER** Your friend says the mass of the kangaroo is greater than 25 grams. Is your friend correct? Explain.

25 kg

9. **Number Sense** Order the masses from least to greatest.

1 kg 3,000 g 6 g 20 kg

10. **Writing** Explain how grams and kilograms are related.

11. **Modeling Real Life** Use the mass of the lightbulb to estimate the mass of the box of lightbulbs.

37 g

_____ g

Review & Refresh

Compare.

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

13. $\frac{1}{2} \bigcirc \frac{3}{4}$

14. $\frac{6}{8} \bigcirc \frac{5}{8}$

15. $\frac{3}{3} \bigcirc \frac{1}{3}$

16. $\frac{2}{4} \bigcirc \frac{4}{8}$

17. $\frac{5}{6} \bigcirc \frac{7}{8}$

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English Spanish

Name _____

Measure Mass 12.8

Learning Target: Measure masses in grams and kilograms.

Success Criteria:

- I can measure a mass in grams.
- I can measure a mass in kilograms.
- I can measure a mass in grams and kilograms.

FLORIDA STANDARDS
MAFS.3.MD.1.2

Explore and Grow

Estimate the masses of four different objects. Then use a balance and weights to measure the actual mass of each object to the nearest gram or kilogram.

Object	Estimate	Actual Mass

MP **Precision** How can you use your results to get a better estimate for a fifth object?

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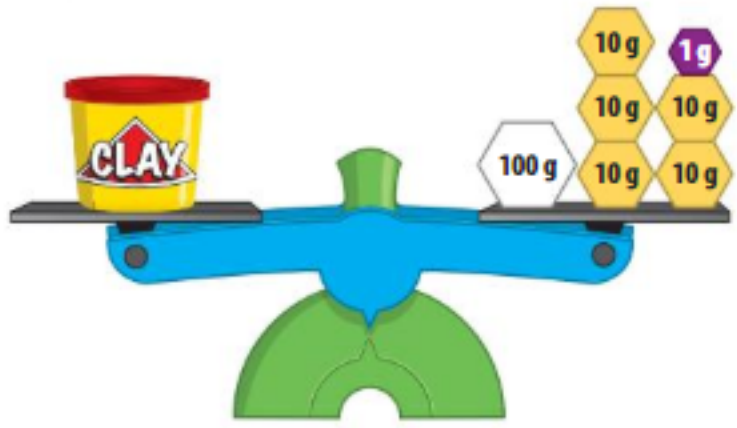
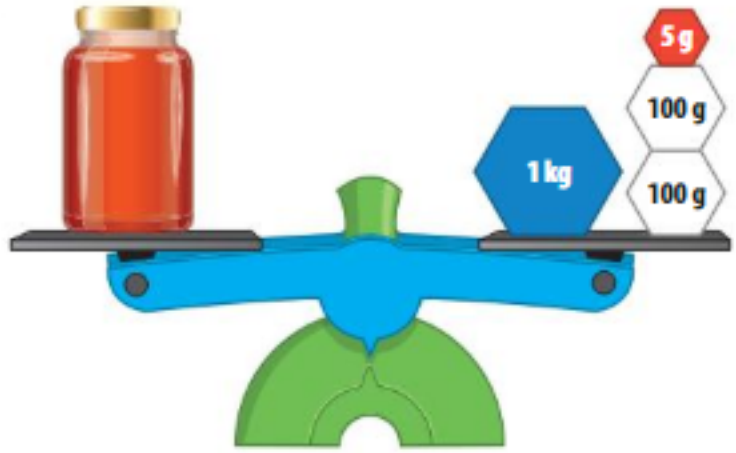
English Spanish

Think and Grow: Measure Mass

Example What is the mass of each object?



The mass of the tub of clay is _____ grams.



The mass of the candle is _____ kilogram _____ grams.

Show and Grow

Write the total mass shown.

1.

2.

3.

4.

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English Spanish

Name _____

Apply and Grow: Practice

Write the total mass shown.

5.

6.

7.

8.

9. **YOU BE THE TEACHER** Your friend says the stuffed animal has a mass that is less than 25 grams. Is your friend correct? Explain.

10. **Choose Tools** Choose the best tool to measure each item.

The liquid volume of a bowl: _____

The length of a spoon: _____

The mass of an orange: _____

The number of minutes you jog: _____

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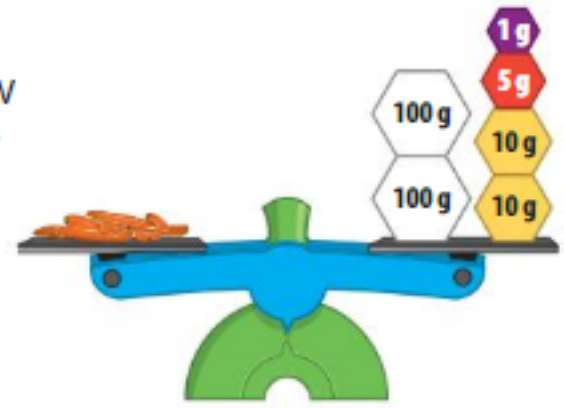
Think and Grow: Modeling Real Life

Third graders should eat 454 grams of vegetables each day. You eat the vegetables shown on the balance. How many more grams of vegetables should you eat today?

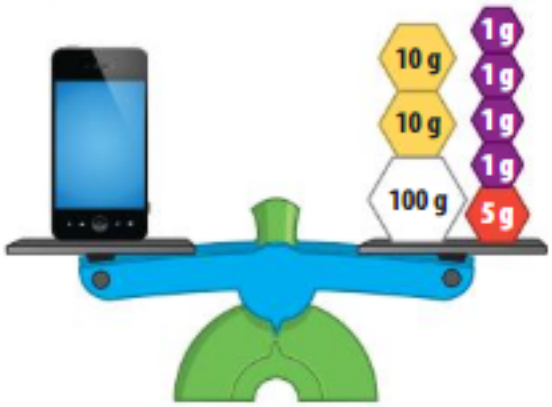


Equation:

You should eat _____ more grams of vegetables.

Show and Grow

11. A tablet's mass is 324 grams more the the cell phone's mass. What is the mass of the tablet?



12. The mass of a nickel is 5 grams. There are 40 nickels in a standard roll. What is the mass of a standard roll of nickels?

13. Newton eats 6 kilograms of dog food each week. He buys a 24-kilogram bag of dog food. For how many weeks will Newton eat from the bag of dog food?

14. DIG DEEPER! You make fruit smoothies using 369 grams of strawberries, 227 grams of raspberries, and 283 grams of blueberries. Do you use more than 1 kilogram of fruit? Explain.

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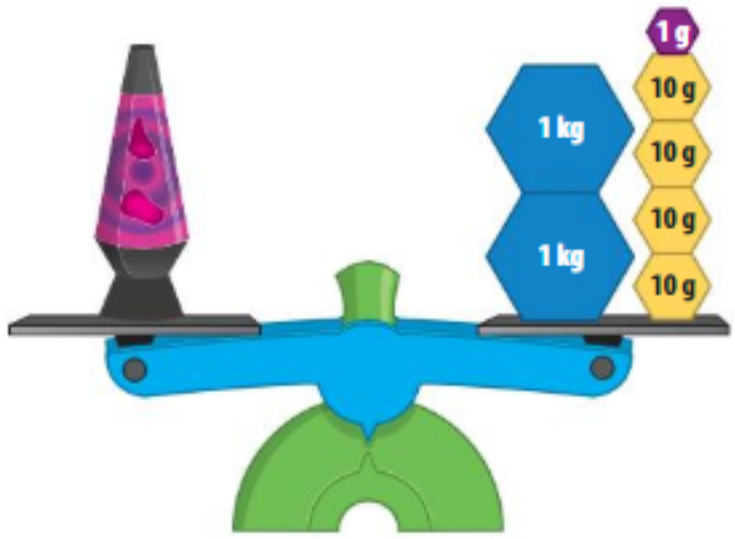
English Spanish

Name _____

Homework & Practice 12.8

Learning Target: Measure masses in grams and kilograms.

Example What is the mass of the lamp?



The mass of the lamp is __2__ kilograms __41__ grams.

Write the total mass shown.

1.

2.

3.

4.

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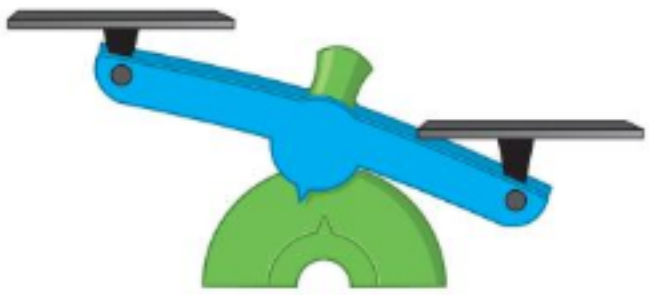
5. **Open-Ended** Choose two objects that have different masses. Draw the objects on the balance with one object on each side.



6. **Precision** Use each measurement once to complete the list.

4 L 2 kg 125 in.

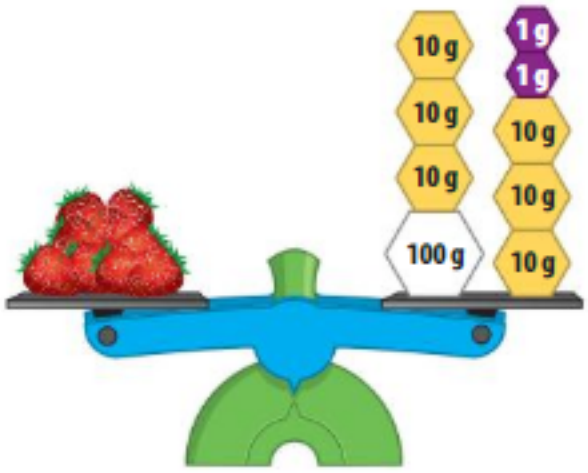
Shopping List

_____ of flour

_____ of waxed paper

_____ of milk

7. **Modeling Real Life** 216 grams of strawberries count as a daily serving of fruit for children. You eat the berries shown. How many more grams of berries should you eat today?



8. **Modeling Real Life** A Japanese one-yen coin weighs 1 gram. Newton and Descartes each have 70 one-yen coins. What is the mass of all of their one-yen coins?

Review & Refresh

What fraction of the whole is shaded?

9.

$\frac{\square}{\square}$ is shaded.

10.

$\frac{\square}{\square}$ is shaded.

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Name _____

Performance Task 12

1. You decide to keep track of the weather today.

a. The rain begins 14 minutes before 1. The rain stops at 2:45. How many minutes does the rain last?

b. Write another way to say the time the rain stops.

c. The rain starts again 48 minutes after it stopped the first time. Show the time.

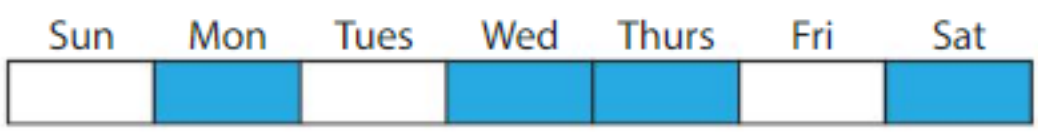
2. This morning, you set a beaker outside before it started to rain.

a. You check the beaker after the first time the rain stops. Write the amount.

b. You check the beaker after the last time the rain stops. The beaker has 200 more milliliters of water. What is the total amount of water in the beaker today?

c. Did you collect more or less than half of a liter of water today? Explain.

3. You color the model to show the number of days it rained last week. What fraction of the week did it *not* rain?



$\frac{\square}{\square}$

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Roll to Cover: Elapsed Time

Directions:

1. Take turns rolling a die. Find a problem on the board with the number you rolled .
2. Find the elapsed time. Tell whether the time is greater than or less than a half hour.
3. Cover the answer and the problem. The player with the most answers covered wins!

Start: 7:04 A.M. End: 7:44 A.M.	Start: 8:11 A.M. End: 8:30 A.M.	Start: 9:45 A.M. End: 10:03 A.M.	Start: 11:54 A.M. End: 12:20 P.M.
Start: 1:02 P.M. End: 1:33 P.M.	Start: 4:13 P.M. End: 4:47 P.M.	Start: 6:55 A.M. End: 7:05 A.M.	Start: 5:27 P.M. End: 5:53 P.M.
Start: 2:01 P.M. End: 2:12 P.M.	Start: 12:57 A.M. End: 1:12 A.M.	Start: 8:43 P.M. End: 9:30 P.M.	Start: 5:04 A.M. End: 5:38 A.M.
more than a half hour	less than a half hour	less than a half hour	more than a half hour
more than a half hour	less than a half hour	more than a half hour	less than a half hour
less than a half hour	more than a half hour	less than a half hour	less than a half hour

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Name _____

Chapter Practice 12

12.1 Time to the Nearest Minute

Write the time. Write two other ways to say the time.

1.

2.

3.

Write the time.

4. 8 minutes after 9

5. 14 minutes before 5

6. 3 minutes before 1

12.2 Measure Elapsed Time within the Hour

7. Find the elapsed time.

Start: 6:20 A.M. End: 6:42 A.M.

_____ minutes

8. **Modeling Real Life** A model rocket takes 23 minutes to build. You start building the rocket at 11:36 A.M. At what time do you finish it?

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12.3 Measure Elapsed Time Across the Hour

9. Find the elapsed time.

Start: 8:45 A.M. End: 9:24 A.M.

_____ minutes

10. **Modeling Real Life** Newton naps from 2:50 P.M. to 3:17 P.M. Descartes naps from 3:55 P.M. to 4:23 P.M. Who naps longer?

12.4 Problem Solving: Time Interval Problems

11. You spend 24 more minutes creating a sculpture than you do painting it. You spend 18 minutes painting the sculpture. How much time do you spend creating the sculpture?

12. You spend 43 minutes on a puppet show. You spend 28 minutes writing the story and the rest performing the show. How many minutes do you spend performing the show?

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12.5 Understand and Estimate Liquid Volume

Choose the better estimate.

13.

3 mL 3 L

14.

55 mL 55 L

15.

10 mL 1 L

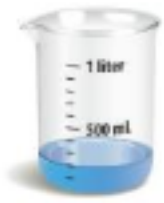
16.

4 L 40 L

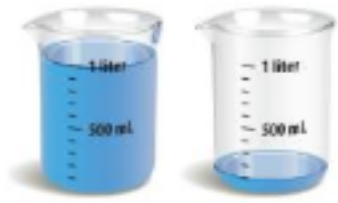
12.6 Measure Liquid Volume

Write the total liquid volume shown.

17.

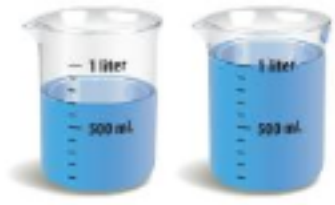


18.



19.

20.



21.

22.

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12.7 Understand and Estimate Mass

Choose the better estimate.

23.

50 g 50 kg

24.

6 g 6 kg

25.

285 g 28 kg

26.

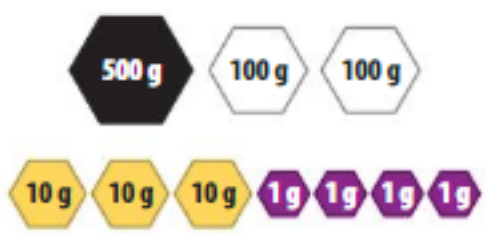
3 kg 30 kg

12.8 Measure Mass

Write the total mass shown.

27.

28.



29.

30.

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Name _____

Cumulative Practice 1–12

1. Which array matches the equation $3 \times 4 = 12$?

Ⓐ

Ⓑ

Ⓒ

Ⓓ

2. Which fractions name the point plotted on the number line?

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

3. What time does the clock show?

Ⓐ 9:28

Ⓑ 5:47

Ⓒ 6:47

Ⓓ 5:13

4. A package of batteries has 5 rows of 6 batteries. You use 8 batteries. How many batteries are *not* used?

Ⓐ 38

Ⓑ 22

Ⓒ 3

Ⓓ 28

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5. Which statement is true?

Ⓐ $\frac{3}{4} \stackrel{?}{<} \frac{5}{8}$

Ⓑ $\frac{3}{4} \stackrel{?}{=} \frac{5}{8}$

Ⓒ $\frac{3}{4} \stackrel{?}{>} \frac{5}{8}$

Ⓓ $\frac{5}{8} \stackrel{?}{>} \frac{3}{4}$

---

6. The mass of a horse is 582 kilograms. The mass of a pig is 355 kilograms less than the mass of the horse. What is the mass of the pig?

---

7. Which number makes the equation true?

$$6 \div \square = 1$$

Ⓐ 6

Ⓑ 1

Ⓒ 0

Ⓓ 5

---

8. A parade starts at the time shown on the clock. It ends at 1:18 P.M. How long is the parade?

A.M.

P.M.

Ⓐ 58 minutes

Ⓑ 22 minutes

Ⓒ 33 minutes

Ⓓ 38 minutes

---

9. Which fraction is *not* equivalent to the number 2?

Ⓐ $\frac{2}{2}$

Ⓑ $\frac{8}{4}$

Ⓒ $\frac{6}{3}$

Ⓓ $\frac{16}{8}$

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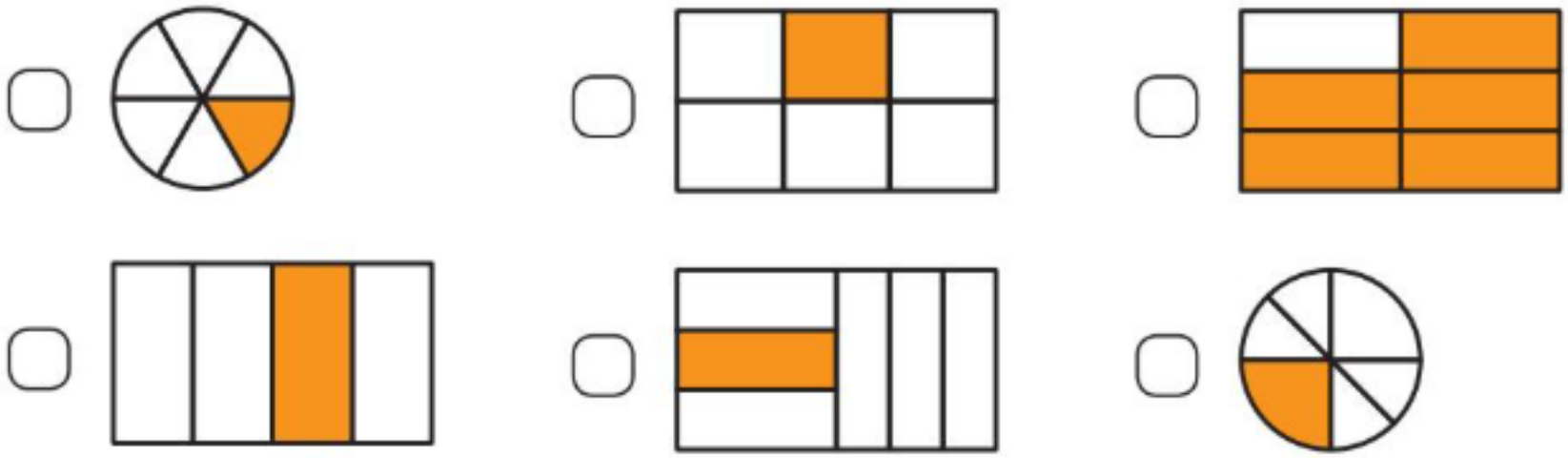
10. Which models show $\frac{1}{6}$ shaded?



11. Which set of fractions is in order from least to greatest?

Ⓐ $\frac{2}{4}, \frac{2}{6}, \frac{2}{8}$

Ⓑ $\frac{5}{6}, \frac{3}{6}, \frac{1}{6}$

Ⓒ $\frac{1}{3}, \frac{4}{3}, \frac{3}{3}$

Ⓓ $\frac{7}{8}, \frac{7}{4}, \frac{7}{3}$

12. A customer buys a game console that costs $229 and 3 video games that cost $60 each. How much money does the customer spend?

Think
Solve
Explain

Part A Write an equation to represent the problem. Use a letter to represent the unknown number.

Part B Solve the problem. Explain how you solved.

Part C Check whether your answer is reasonable. Explain.

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13. Which equation does *not* show the Distributive Property?

Ⓐ $9 \times (10 + 10) = (9 \times 10) + (9 \times 10)$

Ⓑ $8 \times (7 \times 10) = (8 \times 7) \times 10$

Ⓒ $(4 \times 10) + (4 \times 10) + (4 \times 10) = 4 \times 30$

Ⓓ $6 \times 20 = (6 \times 10) + (6 \times 10)$

---

14. A photographer has 478 photos of people and 326 photos of nature. About how many photos does the photographer have in all?

Ⓐ 700

Ⓑ 200

Ⓒ 800

Ⓓ 900

---

15. Which liquid volumes should be measured in liters?

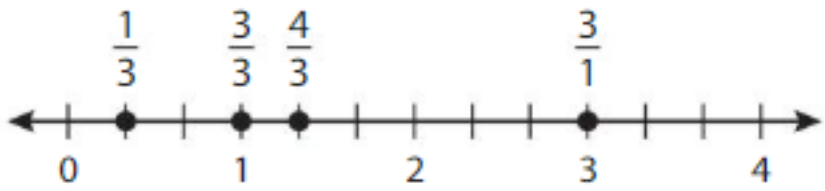
☐ swimming pool ☐ soup can ☐ mug

☐ bathtub ☐ watering can ☐ cooking pot

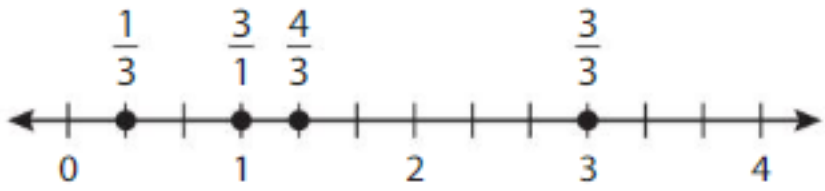
---

16. Which number line shows the fractions $\frac{3}{3}, \frac{1}{3}, \frac{3}{1}$ and $\frac{4}{3}$ plotted correctly?

Ⓐ



Ⓑ



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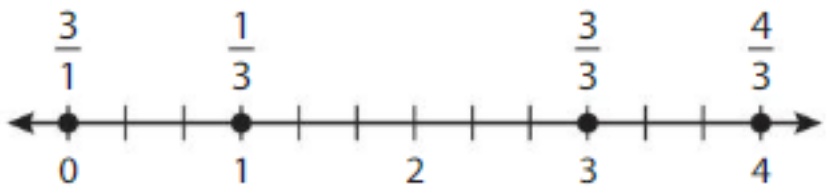

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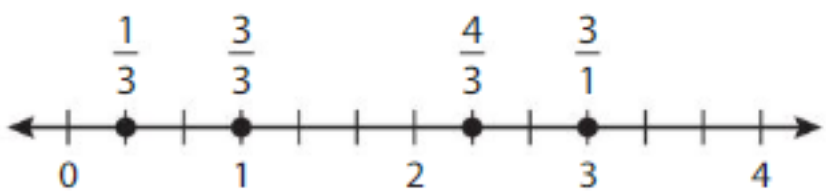

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STEAM Performance Task 1–12

1. Newton and Descartes are warming up for a baseball game.

a. Which units should be used to measure the mass of the baseball bat, *grams* or *kilograms*? Explain.

b. Which units should be used to measure the liquid volume of the team water jug, *milliliters* or *liters*? Explain.

c. Who practices baseball longer, Newton or Descartes? Explain.

Baseball Practice

Activity	Newton's Time Interval	Descartes's Time Interval
Hitting	29 min	24 min
Fielding	8 min	9 min
Throwing	20 min	27 min

2. Your doctor recommends that you exercise about an hour each day, get plenty of sleep, and drink about 1,500 milliliters of water daily.

a. What are some ways you like to exercise?

b. You drink 3 cups of water. Each cup holds 300 milliliters. Did you drink enough water to meet your doctor's recommendation?

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3. Your heart rate is the number of times your heart beats in 1 minute. Your heart rate is lower when you are at rest and higher when you are active. One way doctors measure your health is finding your resting heart rate.

a. You count the number of times your heart beats in 6 seconds. How can you use this number to find the number of times your heart beats in 1 minute?

b. Your heart beats 8 times in 6 seconds while you are at rest. What is your resting heart rate?

c. After playing outside, your heart beats 13 times in 6 seconds. How much greater, in beats per minute, is your heart rate now than when you were at rest?

d. Your friend says that another way to find the number of beats per minute is to multiply the number of times your heart beats in 10 seconds by 6. Is your friend correct? Explain.

4. You can use your pulse to find your heart rate.

a. How many times does your heart beat in 6 seconds? Use this number to find your resting heart rate.

b. Count the number of times your heart beats in one minute. How does this number compare to your answer above? Explain.

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13 Classify Two-Dimensional Shapes

- What is a fossil? What types of fossils are there?
- How can archaeologists use math when they dig for fossils? Why do you think archaeologists lay grids over fossil dig sites?

Chapter Learning Target:
Understand two-dimensional shapes.

Chapter Success Criteria:

- I can define two-dimensional shapes.
- I can explain different shapes and their features.
- I can compare one shape to another.
- I can draw a shape.

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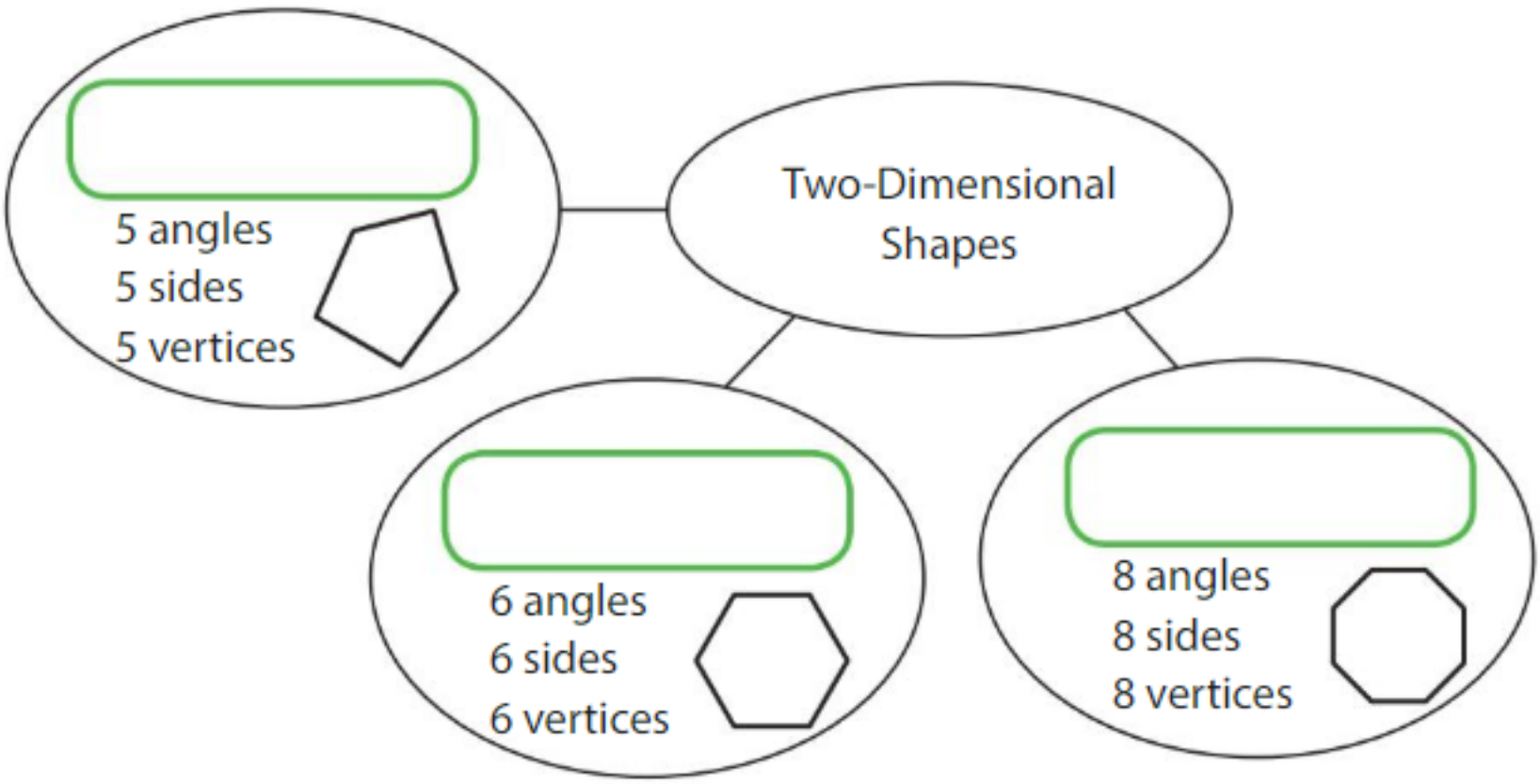
13 Vocabulary

Review Words

hexagon
octagon
pentagon

Organize It

Use the review words to complete the graphic organizer.



Define It

Use your vocabulary cards to complete the puzzle.

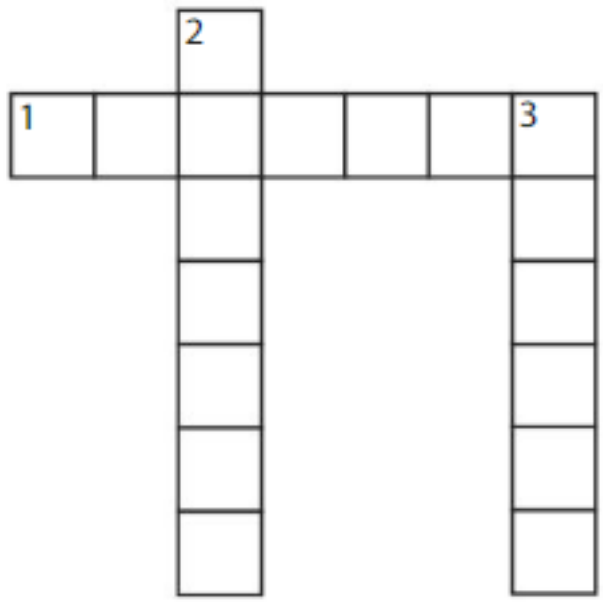
Across

1. A parallelogram with four equal sides

Down

2. A closed, two-dimensional shape with three or more sides

3. A parallelogram with four right angles and four equal sides



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Chapter 13 Vocabulary Cards

angle

parallel sides

parallelogram

polygon

quadrilateral

rectangle

rhombus

right angle

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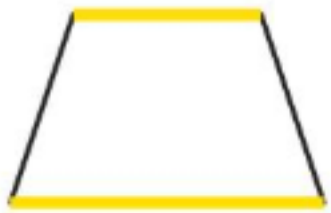
Two sides that are always the same distance apart



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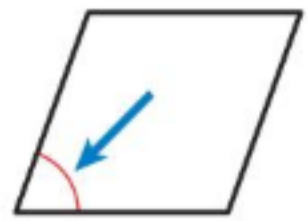
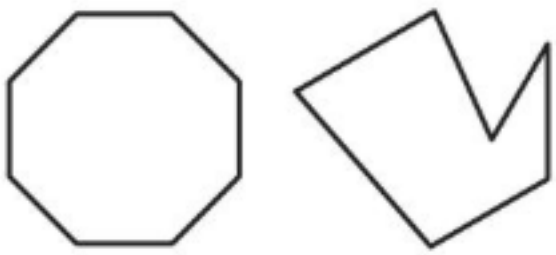


A closed, two-dimensional shape with three or more sides



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A quadrilateral with two pairs of parallel sides

A parallelogram with four right angles

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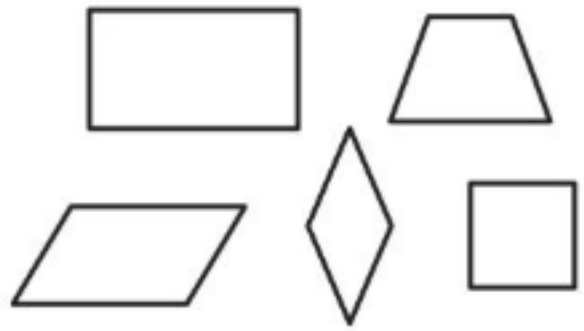
A polygon with four sides



An L-shaped angle

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A parallelogram with four equal sides

English Spanish

side

square

trapezoid

vertex

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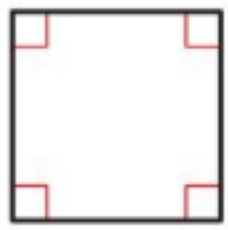
A parallelogram with four right angles and four equal sides



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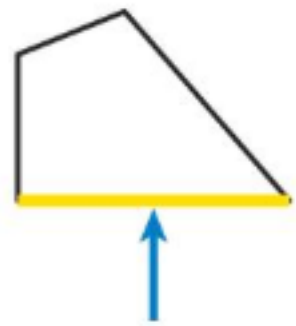

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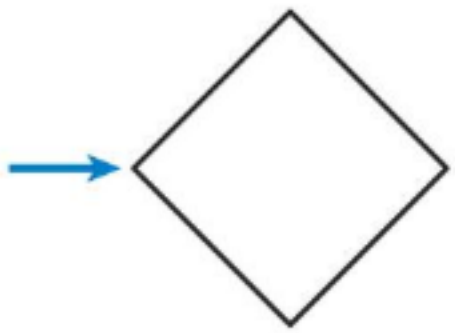

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A quadrilateral with exactly one pair of parallel sides

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Identify Sides and Angles of Quadrilaterals

13.1

Learning Target: Identify parallel sides and right angles of quadrilaterals.

Success Criteria:

- I can identify when two sides of a quadrilateral are parallel.
- I can identify right angles of a quadrilateral.

FLORIDA STANDARDS
MAFS.3.G.1.1

Explore and Grow

Sort the Polygon Cards.

Fewer Than 4 Sides	4 Sides	More Than 4 Sides

MP **Structure** Does the sort change if you sort by the number of vertices? Explain.

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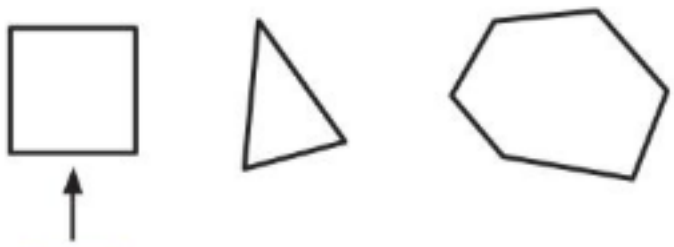
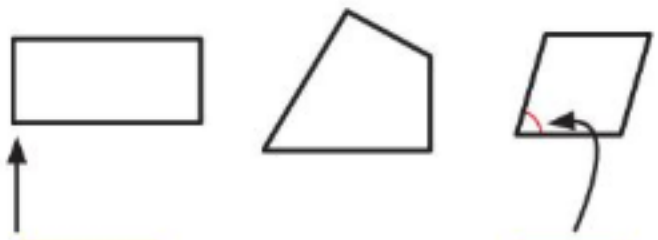
Think and Grow: Sides and Angles of Quadrilaterals

A **polygon** is a closed, two-dimensional shape with three or more sides.



side

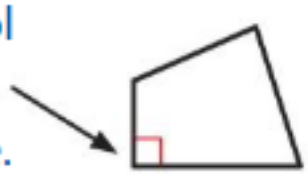
A **quadrilateral** is a polygon with four sides. Quadrilaterals have four vertices and four angles.



vertex angle

Quadrilaterals can have parallel sides and right angles. **Parallel sides** are two sides that are always the same distance apart. A **right angle** is an L-shaped angle.

The symbol ∟ shows a right angle.



1 right angle

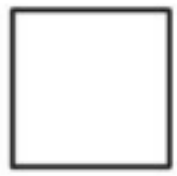
1 pair of parallel sides

4 right angles
2 pairs of parallel sides

Example Identify the number of right angles and pairs of parallel sides.

Right angles: ____

Pairs of parallel sides: ____



Right angles: ____

Pairs of parallel sides: ____

Show and Grow

Identify the number of right angles and pairs of parallel sides.

1.

Right angles: ____

Pairs of parallel sides: ____

2.

Right angles: ____

Pairs of parallel sides: ____

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English Spanish

Name _____

Apply and Grow: Practice

Identify the number of right angles and pairs of parallel sides.

3.

Right angles: _____

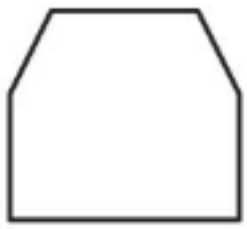
Pairs of parallel sides: _____

4.

Right angles: _____

Pairs of parallel sides: _____

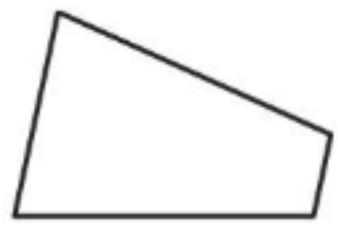
5.



Right angles: _____

Pairs of parallel sides: _____

6.



Right angles: _____

Pairs of parallel sides: _____

7.

Right angles: _____

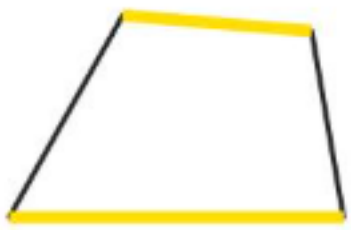
Pairs of parallel sides: _____

8.

Right angles: _____

Pairs of parallel sides: _____

9. **YOU BE THE TEACHER** Your friend says the yellow sides are parallel. Is your friend correct? Explain.



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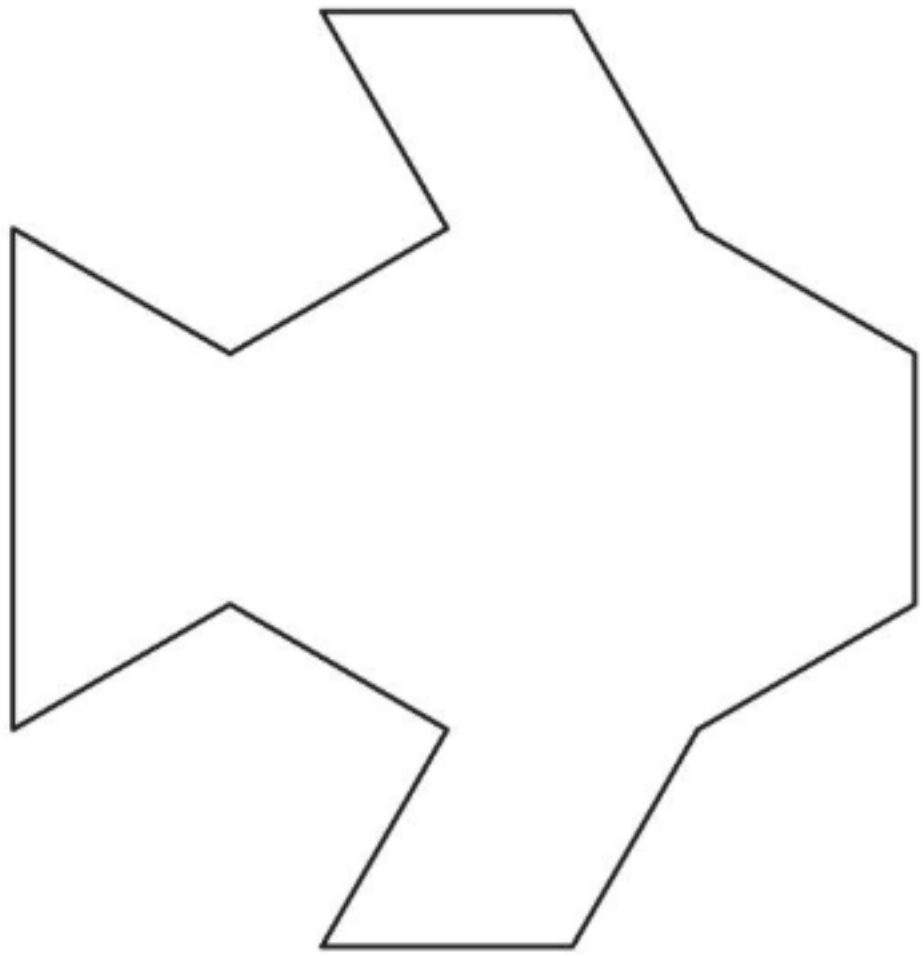
English Spanish

Think and Grow: Modeling Real Life

Use quadrilateral pattern blocks to complete the puzzle.

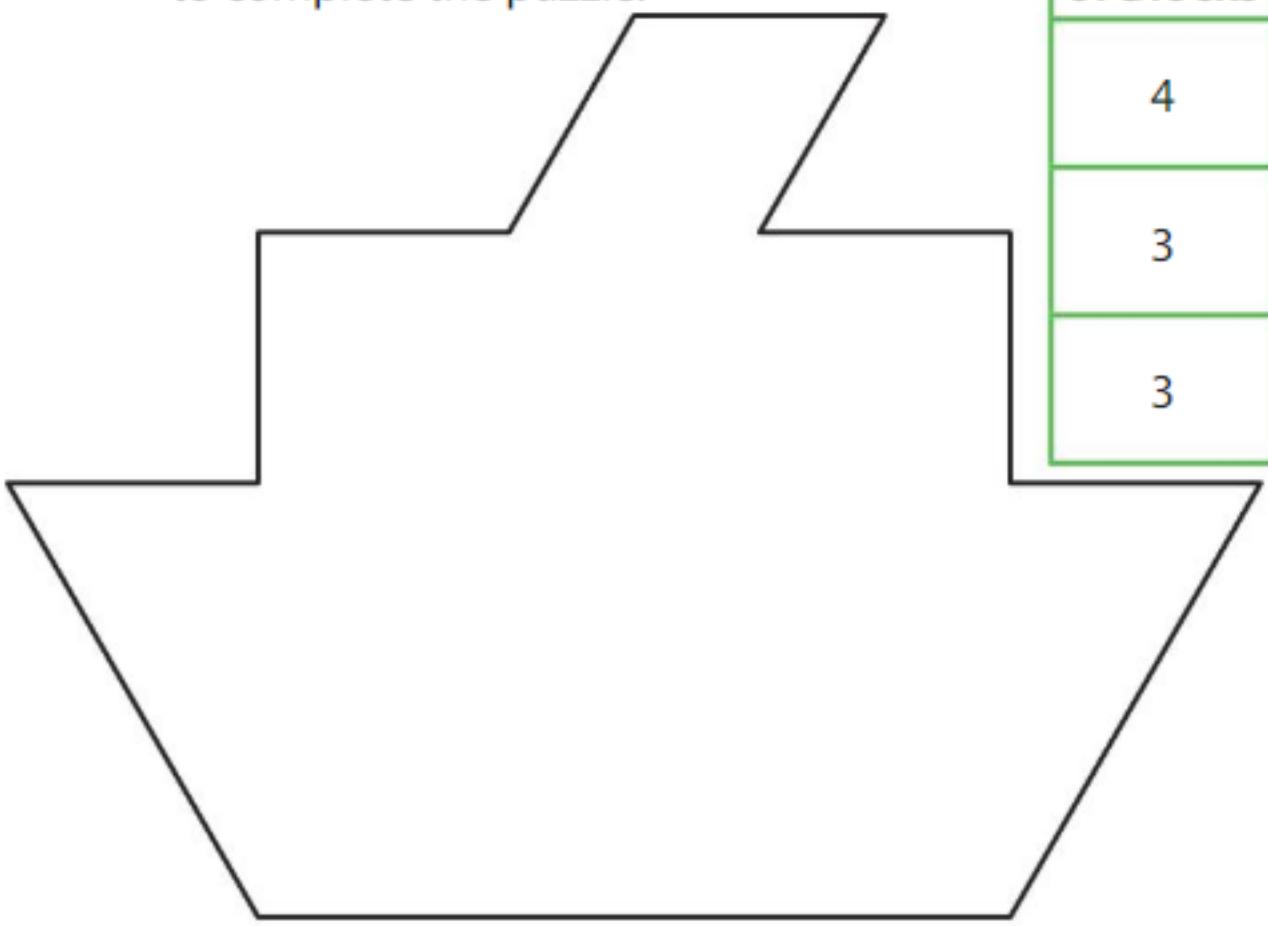
Number of Blocks	Description of Block
3	• 0 right angles • 1 pair of parallel sides
2	• 0 right angles • 2 pairs of parallel sides
2	• 4 right angles • 2 pairs of parallel sides



Show and Grow

10. Use quadrilateral pattern blocks to complete the puzzle.

Number of Blocks	Description of Block
4	• 0 right angles • 1 pair of parallel sides
3	• 0 right angles • 2 pairs of parallel sides
3	• 4 right angles • 2 pairs of parallel sides



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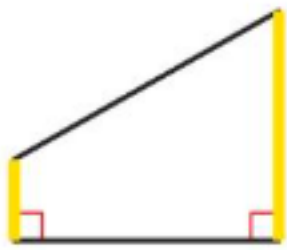
English Spanish

Name _____

Homework & Practice 13.1

Learning Target: Identify parallel sides and right angles of quadrilaterals.

Example Identify the number of right angles and pairs of parallel sides.



Right angles: 2

Pairs of parallel sides: 1

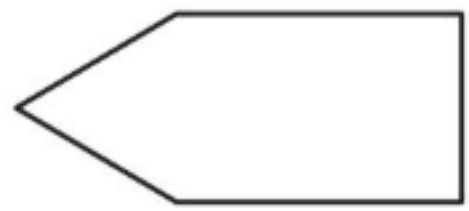
Identify the number of right angles and pairs of parallel sides.

1.

Right angles: _____

Pairs of parallel sides: _____

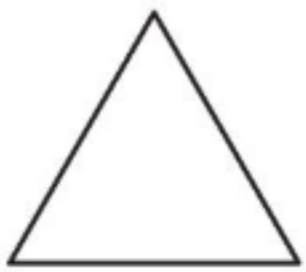
2.



Right angles: _____

Pairs of parallel sides: _____

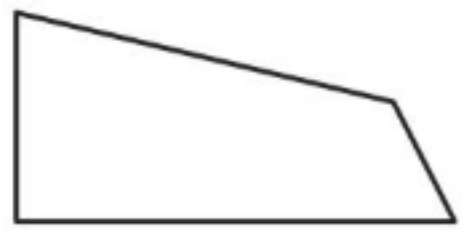
3.



Right angles: _____

Pairs of parallel sides: _____

4.



Right angles: _____

Pairs of parallel sides: _____

5.

Right angles: _____

Pairs of parallel sides: _____

6.

Right angles: _____

Pairs of parallel sides: _____

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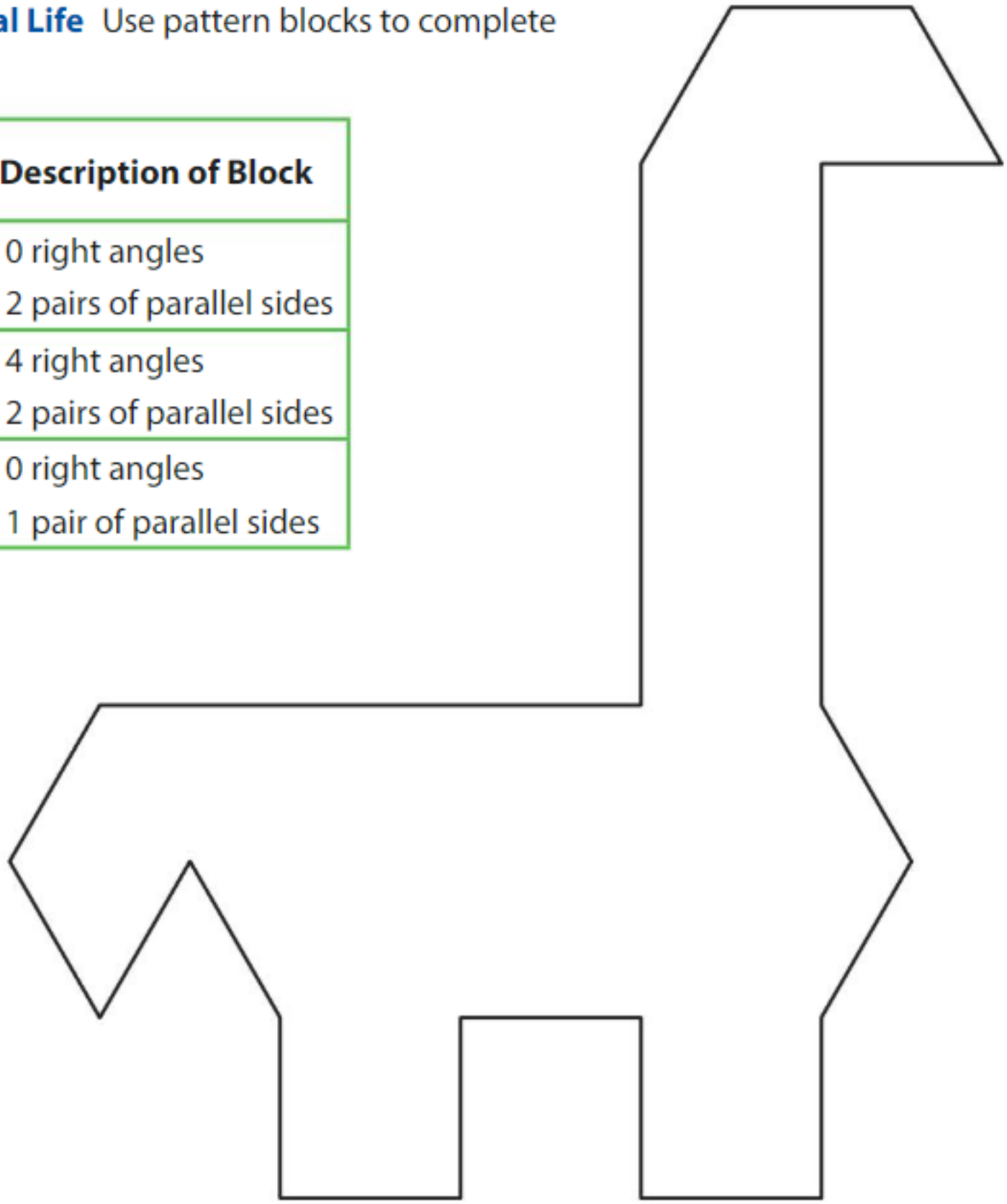
7. **Reasoning** Can a quadrilateral have exactly three right angles? Explain.

---

8. **Modeling Real Life** Use pattern blocks to complete the puzzle.

Number of Blocks	Description of Block
4	• 0 right angles • 2 pairs of parallel sides
5	• 4 right angles • 2 pairs of parallel sides
4	• 0 right angles • 1 pair of parallel sides



Review & Refresh

9. Newton has 28 cards. Descartes has 24 cards. Newton divides his cards into 4 equal stacks and gives Descartes one stack. How many cards does Descartes have now?

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English Spanish

Name _____

Describe Quadrilaterals 13.2

Learning Target: Describe quadrilaterals using sides and angles.

Success Criteria:

- I can use sides and angles to identify a quadrilateral.
- I can explain why a quadrilateral can have more than one name.

FLORIDA STANDARDS
MAFS.3.G.1.1

Explore and Grow

Sort the Quadrilateral Cards.

No Parallel Sides	Parallel Sides

MP **Structure** What is another way you can sort the quadrilaterals?

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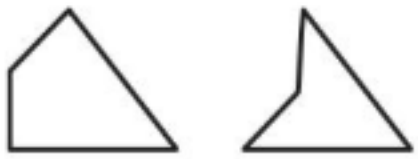
English Spanish

Think and Grow: Identify Quadrilaterals

You can identify a quadrilateral using its sides and angles. A quadrilateral can have more than one name.

Quadrilateral



4 sides
4 angles

Trapezoid

exactly 1 pair of parallel sides

Parallelogram

2 pairs of parallel sides

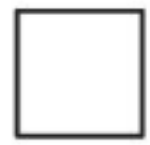
Rectangle

2 pairs of parallel sides
4 right angles

Rhombus

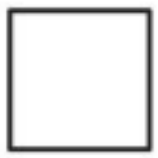
2 pairs of parallel sides
4 equal sides

Square



2 pairs of parallel sides
4 equal sides
4 right angles

Example Circle all of the names for the quadrilateral.



Pairs of parallel sides: _____

Equal sides: _____

Right angles: _____

Rhombus Square

Rectangle Parallelogram

Show and Grow

Circle all of the names for the quadrilateral.

1.

Trapezoid Rectangle

Rhombus Parallelogram

2.

Square Parallelogram

Rectangle Trapezoid

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English Spanish

Name _____

Apply and Grow: Practice

Write all of the names for the quadrilateral.

3.

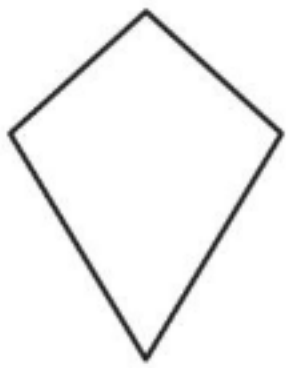
4.

Name all of the quadrilaterals that can have the given attribute.

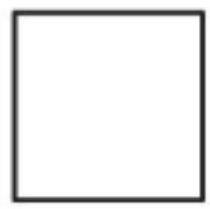
5. 2 pairs of parallel sides

6. 4 right angles

7. MP **Precision** Is the shape a rhombus? Explain.



8. **YOU BE THE TEACHER** Your friend says the shape is *not* a rhombus. Is your friend correct? Explain.



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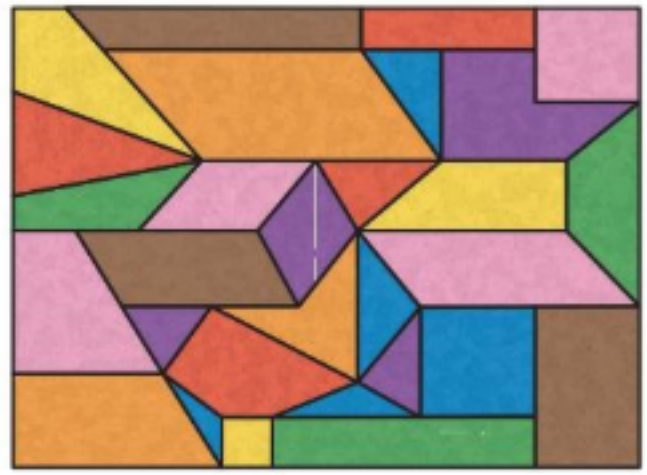
Think and Grow: Modeling Real Life

Write all of the names for the red quadrilateral in the painting.



Show and Grow

Use the painting above.

9. Write all of the names for the blue quadrilateral.

10. What color is the rhombus that is *not* a square?

11. How many trapezoids are in the painting? Circle them.

12. DIG DEEPER! There are 4 squares and 8 rectangles in a floor tile pattern. Find the total number of right angles in the pattern. Explain.

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English Spanish

Name _____

Homework & Practice 13.2

Learning Target: Describe quadrilaterals using sides and angles.

Example Circle all of the names for the quadrilateral.

Pairs of parallel sides: 2

Equal sides: 4

Right angles: 0

Square Trapezoid (Rhombus) Rectangle

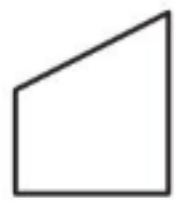
Circle all of the names for the quadrilateral.

1.

Rhombus Rectangle

Square Parallelogram

2.

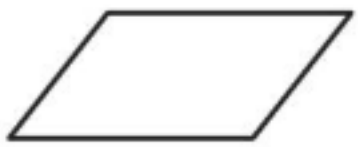


Rectangle Parallelogram

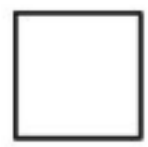
Trapezoid Rhombus

Write all of the names for the quadrilateral.

3.



4.



Name all of the quadrilaterals that can have the given attributes.

5. 4 sides and 4 angles

6. exactly 1 pair of parallel sides

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English Spanish

7. **Writing** Explain how a trapezoid is different from a parallelogram.

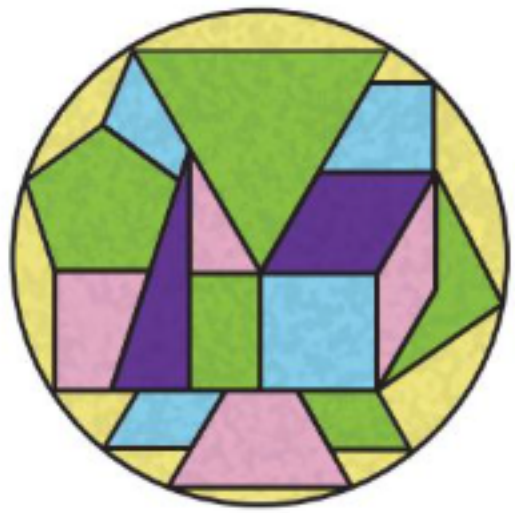
8. **Reasoning** Explain why the rectangle shown is *not* a square.

9. **DIG DEEPER!** What is Descartes's shape?

My quadrilateral has four right angles and two pairs of parallel sides. One pair of sides is greater in length than the other pair.

10. **Which One Doesn't Belong?** Which does *not* belong with the other three? Explain.

Modeling Real Life Use the mosaic.



11. Write all of the names for the purple quadrilateral.

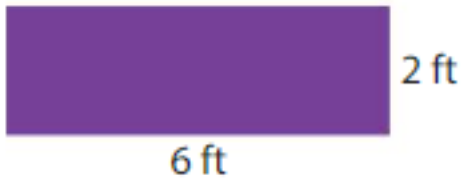
_____

12. How many parallelograms are in the mosaic? Circle them.

Review & Refresh

Find the area of the rectangle.

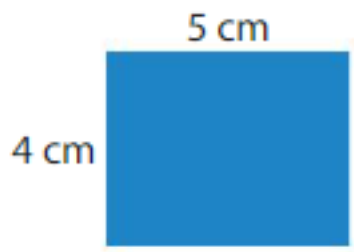
13.



_____ × _____ = _____

Area = _____

14.



_____ × _____ = _____

Area = _____

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English Spanish

Name _____

Classify Quadrilaterals 13.3

Learning Target: Classify quadrilaterals based on their attributes.

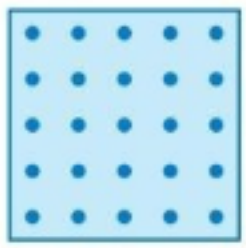
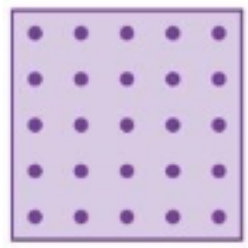
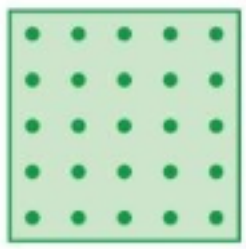
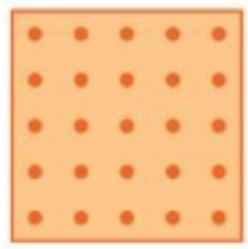
Success Criteria:

- I can tell what is alike between two groups of quadrilaterals.
- I can tell what is different between two groups of quadrilaterals.
- I can classify two types of quadrilaterals in one or more ways.

FLORIDA STANDARDS
MAFS.3.G.1.1

Explore and Grow

Use each description to model a quadrilateral on your geoboard. Draw each quadrilateral.

Two pairs of parallel sides 	Exactly one pair of parallel sides 
Four right angles that do *not* form a square 	Two pairs of parallel sides and no right angles 

MP **Structure** Compare your quadrilaterals to your partner's. Are your quadrilaterals the same? Are you both correct? Explain.

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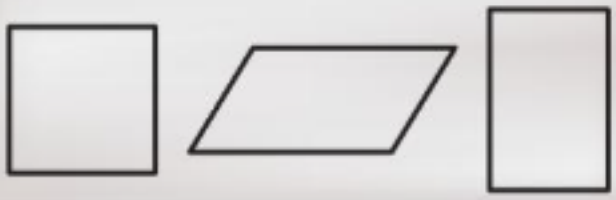
Think and Grow: Classify Quadrilaterals

Example How are the parallelograms and rhombuses alike? How are they different?

Parallelograms



Rhombuses

Ways they are alike:

Each has _____ sides.

Each has _____ angles.

Each has _____ pairs of parallel sides.

Ways they are different:

Rhombuses always have

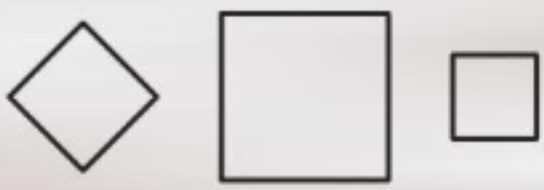
_____ equal sides.

What names can you use to classify all parallelograms and rhombuses?

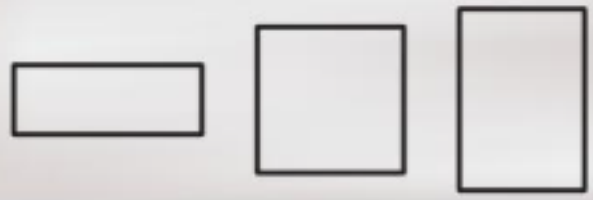
_____ and _____

Show and Grow

Squares



Rectangles



1. How are squares and rectangles alike? How are they different?

2. What names can you use to classify all squares and rectangles?

3. Draw a quadrilateral that is *not* a square or a rectangle. Explain.

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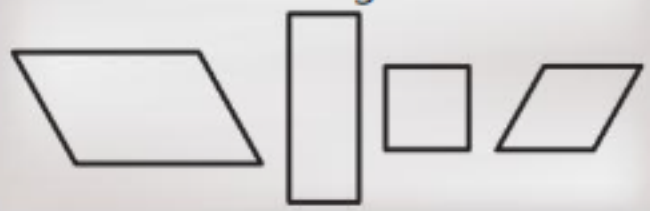
English Spanish

Name _____

Apply and Grow: Practice

Trapezoids

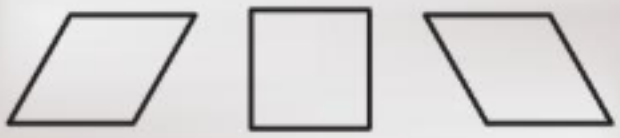
Parallelograms



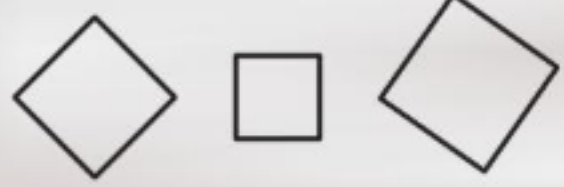
4. How are trapezoids and parallelograms alike? How are they different?

5. What name can you use to classify all trapezoids and parallelograms?

Rhombuses



Squares



6. How are rhombuses and squares alike? How are they different?

7. What names can you use to classify all rhombuses and squares?

8. Draw a quadrilateral that is a rhombus but *not* a square.

9. Draw a quadrilateral that is *not* a rhombus or a square. Explain.

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English Spanish

Think and Grow: Modeling Real Life

Sort the road signs into two groups by shape. What is alike and what is different between the two groups? What name can you use to classify all of the road sign shapes?

Show and Grow

10. Sort the road signs into two groups by shape. What is alike and what is different between the two groups? What names can you use to classify all of the road sign shapes?

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English Spanish

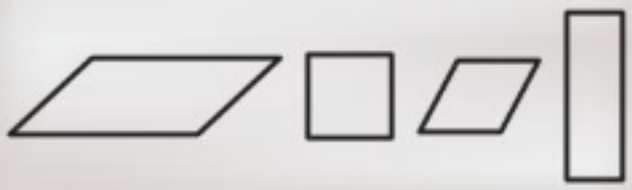
Name _____

Homework & Practice 13.3

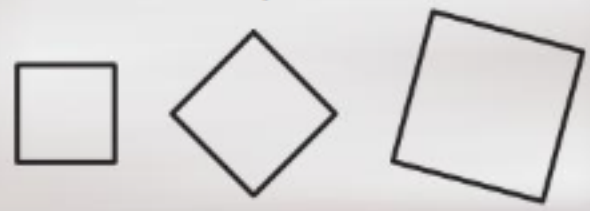
Learning Target: Classify quadrilaterals based on their attributes.

Example How are parallelograms and squares alike? How are they different?

Parallelograms



Squares



Ways they are alike:

Each has 4 sides.

Each has 4 angles.

Each has 2 pairs of parallel sides.

Ways they are different:

Squares always have 4 equal sides and 4 right angles.

What names can you use to classify all parallelograms and squares?

parallelograms and quadrilaterals

Rectangles

Rhombuses

1. How are rectangles and rhombuses alike? How are they different?

2. What names can you use to classify all rectangles and rhombuses?

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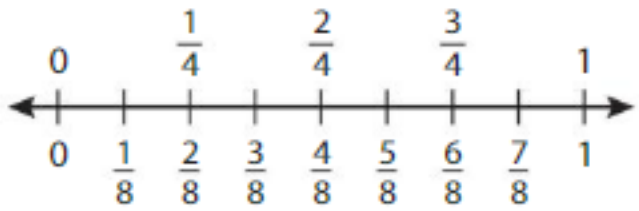
3. **DIG DEEPER!** Your friend says a shape is a rectangle. Newton says the same shape is a rhombus, and Descartes says it is a square. Can they all be correct? Explain.

4. **YOU BE THE TEACHER** Is Newton correct? Explain.

5. **Modeling Real Life** Sort the earrings into two groups by shape. What is alike and what is different between the two groups? What name can you use to classify all of the earring shapes?

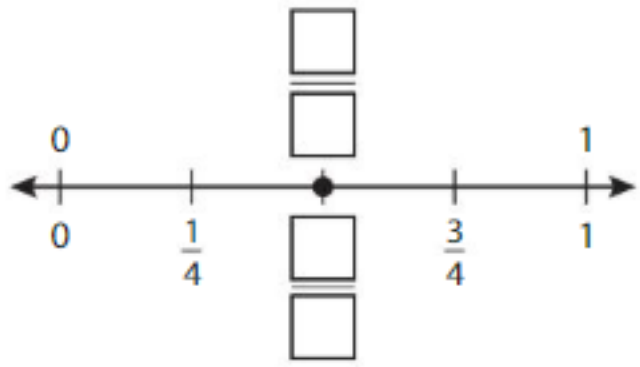
Review & Refresh

6. Use the number line to find an equivalent fraction.



$\frac{6}{8} = \frac{\square}{\square}$

7. Write two fractions that name the point shown.



$\frac{\square}{\square} = \frac{\square}{\square}$

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English Spanish

Name _____

Draw Quadrilaterals 13.4

Learning Target: Draw quadrilaterals.

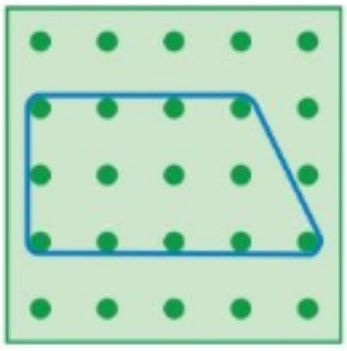
Success Criteria:

- I can draw and name a quadrilateral given a description.
- I can draw a quadrilateral that does not belong to a given group.

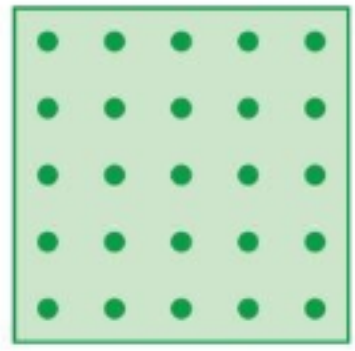
FLORIDA STANDARDS
MAFS.3.G.1.1

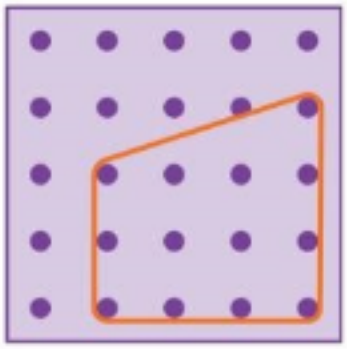
Explore and Grow

Model each quadrilateral on your geoboard. Move one vertex of each quadrilateral to create a new quadrilateral. Draw each new quadrilateral.

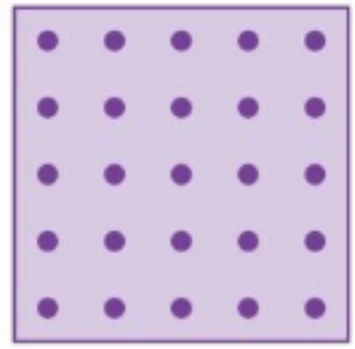


Trapezoid to Parallelogram

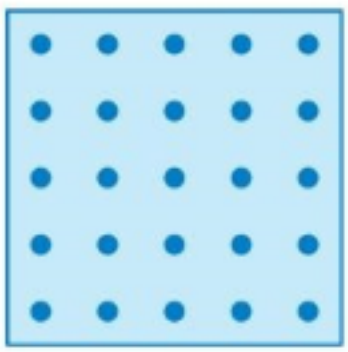


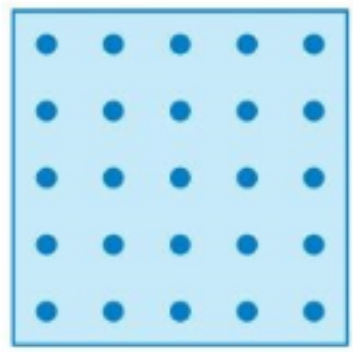


Trapezoid to Rectangle



MP **Structure** Create your own quadrilateral. Move one vertex to create a new quadrilateral. Draw your quadrilaterals. Name each quadrilateral.





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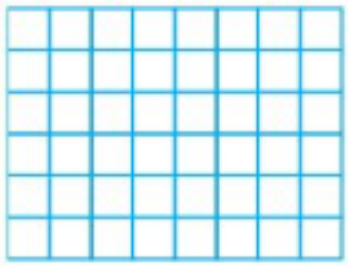
English Spanish

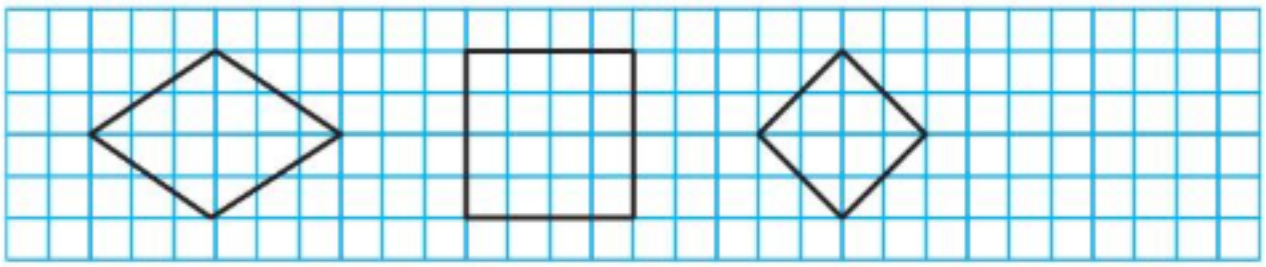
Think and Grow: Draw Quadrilaterals

Example Draw a quadrilateral that has four right angles. Name the quadrilateral.



_____

Example Below are three rhombuses. Draw a quadrilateral that is *not* a rhombus. Explain why it is not a rhombus.

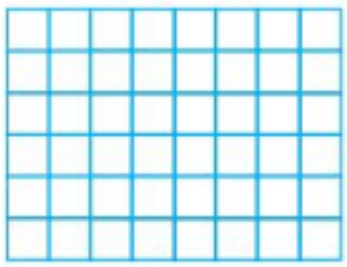


The quadrilateral is not a rhombus because _____

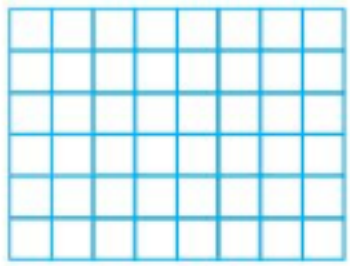
_____.

Show and Grow

1. Draw a quadrilateral that has exactly one pair of parallel sides. Name the quadrilateral.



2. Draw a quadrilateral that is *not* a square. Explain why it is not a square.



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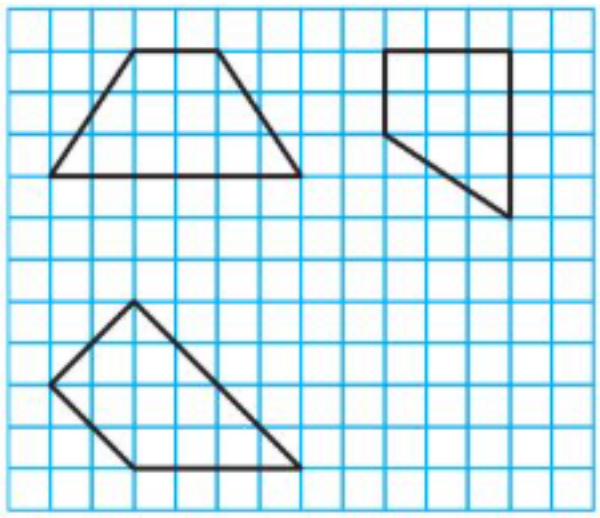
English Spanish

Name _____

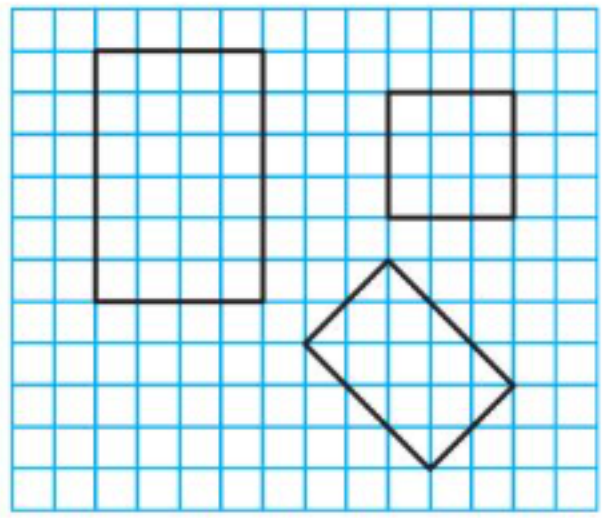
Apply and Grow: Practice

Name the group of quadrilaterals. Then draw a quadrilateral that does *not* belong in the group. Explain why it does not belong.

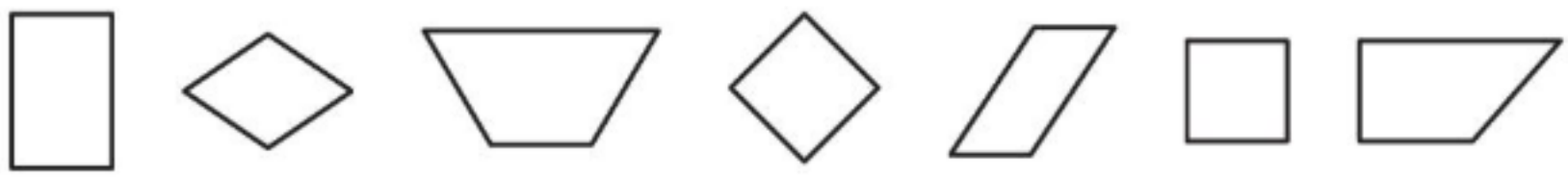
3.



4.

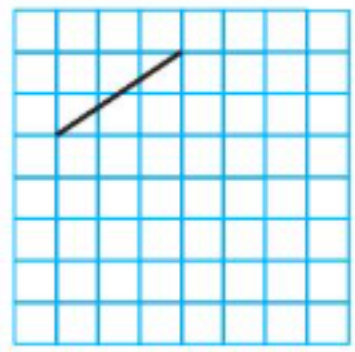


5. MP **Precision** Circle the quadrilaterals that are *not* rhombuses.



6. **YOU BE THE TEACHER** Your friend draws the shape and says it is a parallelogram because it has two pairs of parallel sides. Is your friend correct? Explain.

7. **DIG DEEPER!** Draw a quadrilateral with two pairs of parallel sides. One side is given.



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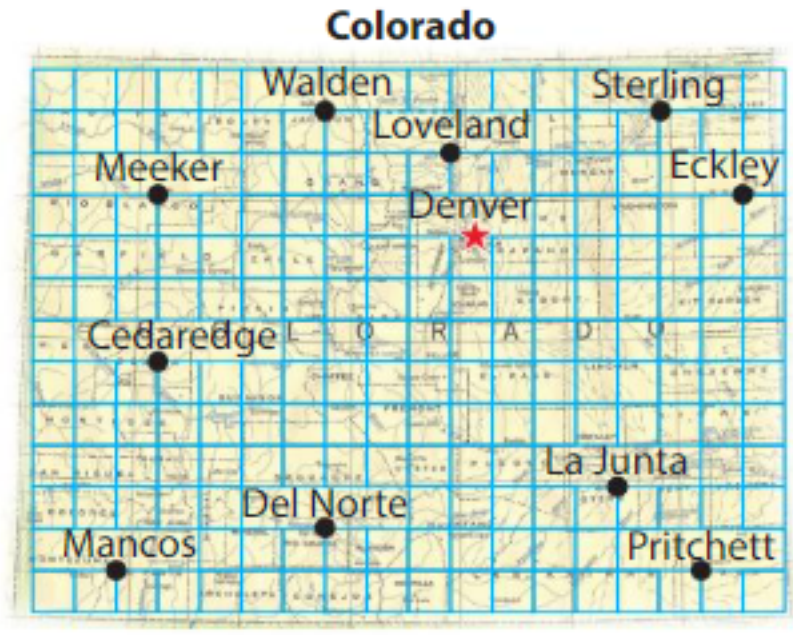
Think and Grow: Modeling Real Life

A helicopter travels to various Colorado cities. Draw to show a route that forms a parallelogram. Write the names of the cities you use.



Show and Grow

8. Use the map above. Draw to show a route that forms a trapezoid. Write the names of the cities you use.

9. You have four markers of equal length. Name all of the quadrilaterals you can make using the markers as sides.

10. DIG DEEPER! Use a ruler to draw a trapezoid for each description.

- one side length of 1 inch
- one side length of 2 inches
- two right angles

- one side length of 1 inch
- one side length of 2 inches
- no right angles

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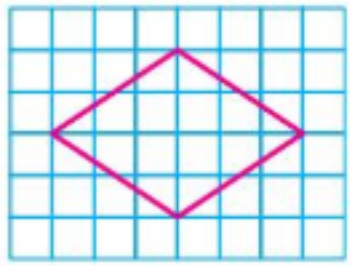
English Spanish

Name _____

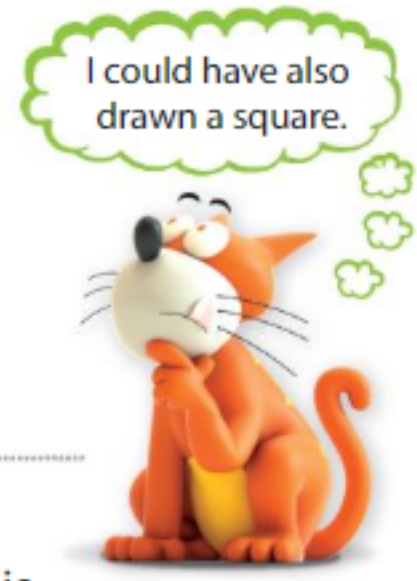
Homework & Practice 13.4

Learning Target: Draw quadrilaterals.

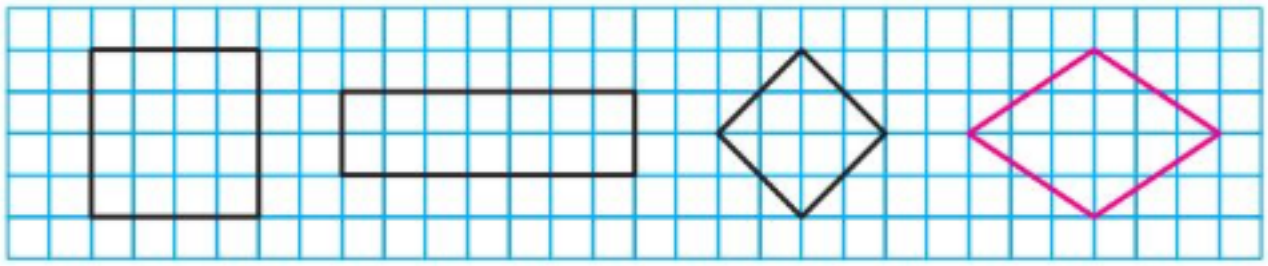
Example Draw a quadrilateral that has four equal sides. Name the quadrilateral.



rhombus

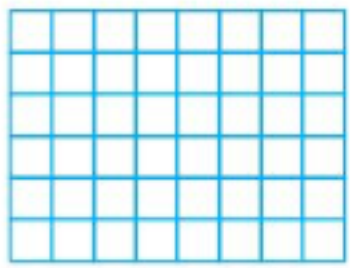


Example Below are three rectangles. Draw a quadrilateral that is *not* a rectangle. Explain why it is not a rectangle.

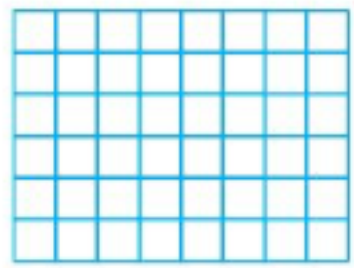


The quadrilateral is *not* a rectangle because it does not have four right angles.

1. Draw a quadrilateral that has two pairs of parallel sides. Name the quadrilateral.



2. Draw a quadrilateral that is *not* a rhombus. Explain why it is not a rhombus.



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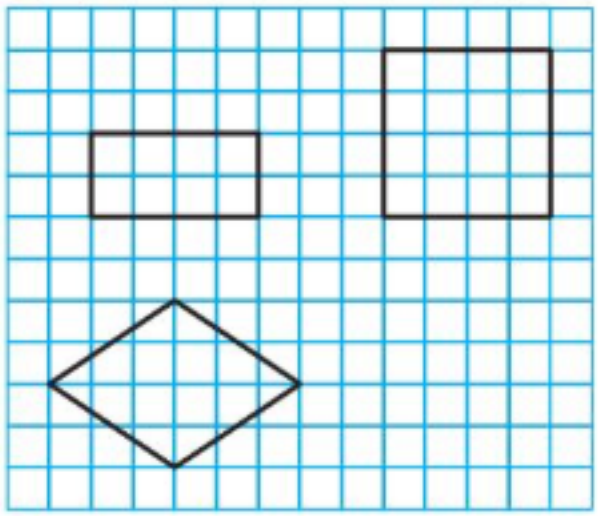
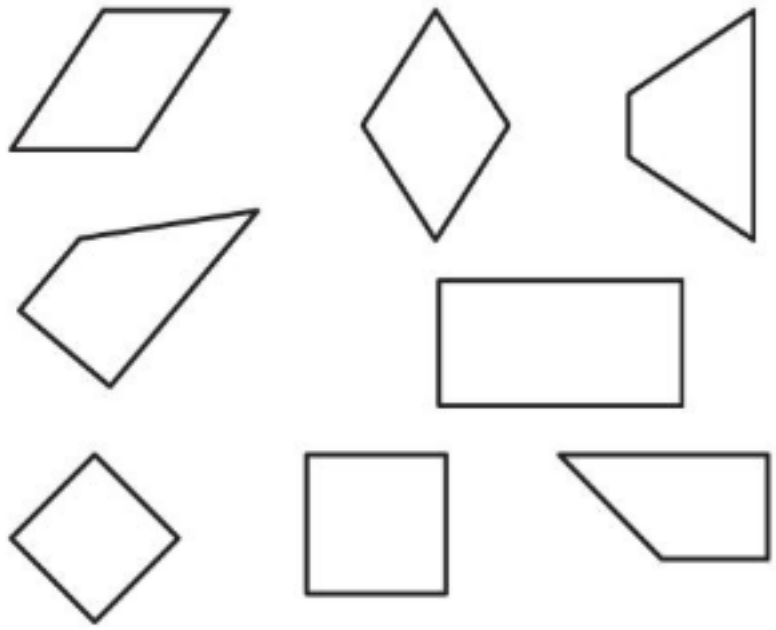
3. Name the group of quadrilaterals. Then draw a quadrilateral that does *not* belong in the group. Explain why it does not belong.



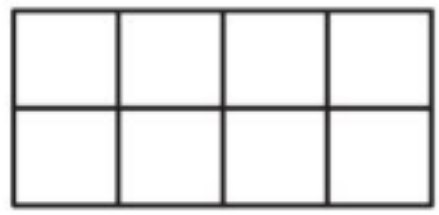
4. MP **Precision** Circle the quadrilaterals that are *not* trapezoids.



5. **Modeling Real Life** A bus tour wants to travel to various locations. Draw to show a route that forms a rectangle. Write the names of the location drop-off points you use.

Review & Refresh

6. Tell whether the shape shows equal parts or unequal parts. If the shape shows equal parts, then name them.



_____ parts _____

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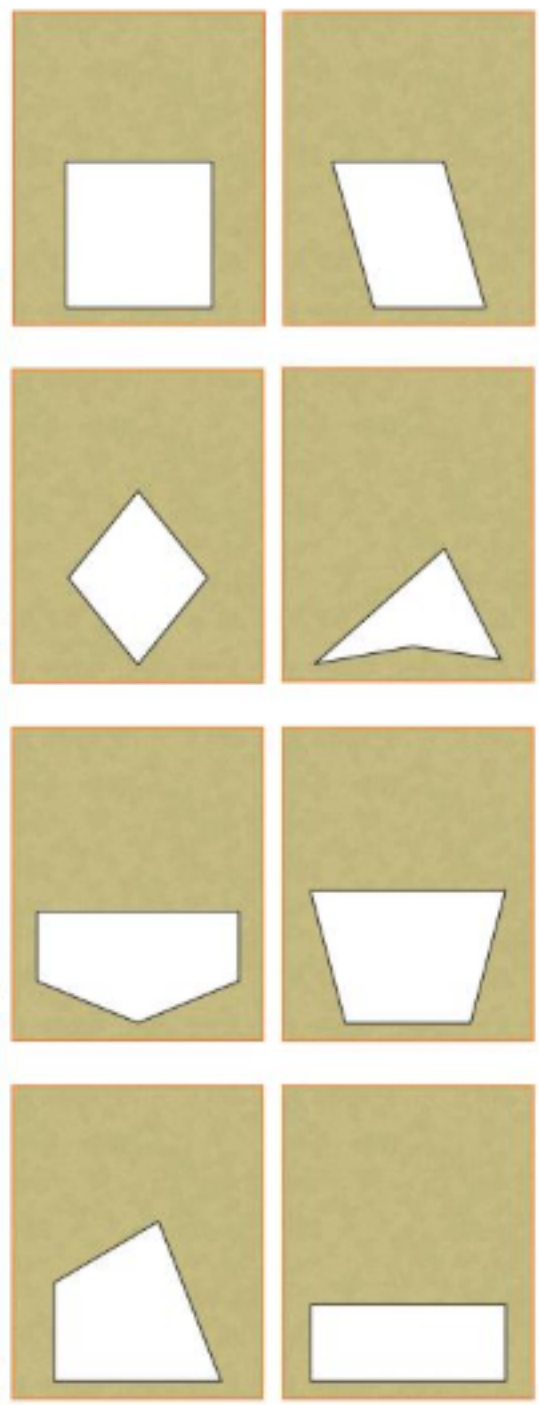
English Spanish

Name _____

Performance Task 13

Your class is learning about fossils.

1. Your teacher wants to create cards using the fossils below. Use each polygon description to write the fossil name on the correct card.



A polygon with $4 + 1$ sides

Dragonfly

A rhombus with 4×1 right angles

Starfish

A quadrilateral with only 1 right angle

Leaf

A quadrilateral with $8 \div 2$ right angles and $8 \div 4$ pairs of parallel sides

Fish

A rhombus with 4×0 right angles

Shell

A polygon with 2×1 pairs of parallel sides and *not* a rhombus

Trilobite

A quadrilateral with exactly 1 pair of parallel sides

Skull

A quadrilateral with $4 - 4$ right angles and 4×0 parallel sides

Bone

2. Your teacher uses the cards and a sandbox to create an archaeological dig site. Your teacher lays a grid with eight grid squares over the top of the sandbox. Each square has 10-inch side lengths. How many square inches is the bottom of the sandbox?

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Identify That Quadrilateral!

Directions:

1. Players take turns rolling a die.
2. On your turn, move your piece the number of spaces shown on the die.
3. Cover a space on the board that describes the shape where you landed.
4. If there are no spaces that match your shape, then you lose your turn.
5. The first player to cover six spaces wins!

START				
	• 2 pairs of parallel sides • 4 equal sides • 4 right angles	rectangle	• 2 pairs of parallel sides	
	trapezoid	• 4 sides • 4 angles	square	
	parallelogram	rhombus	• exactly 1 pair of parallel sides	
	• 2 pairs of parallel sides • 4 equal sides	quadrilateral	• 2 pairs of parallel sides • 4 right angles	

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English Spanish

Name _____

Chapter Practice 13

13.1 Identify Sides and Angles of Quadrilaterals

Identify the number of right angles and pairs of parallel sides.

1.

Right angles: _____

Pairs of parallel sides: _____

2.

Right angles: _____

Pairs of parallel sides: _____

3. **YOU BE THE TEACHER** Your friend says the yellow sides are parallel. Is your friend correct? Explain.

13.2 Describe Quadrilaterals

4. Write all of the names for the quadrilateral.

5. Name all of the quadrilaterals that can have no right angles.

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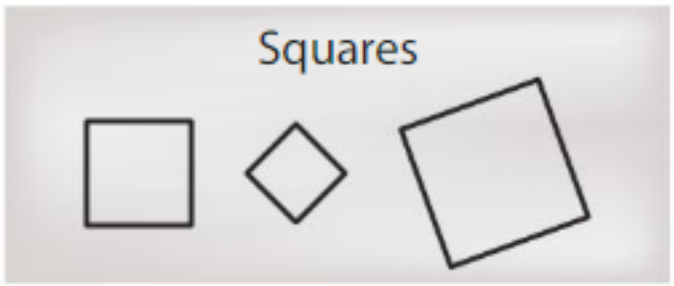
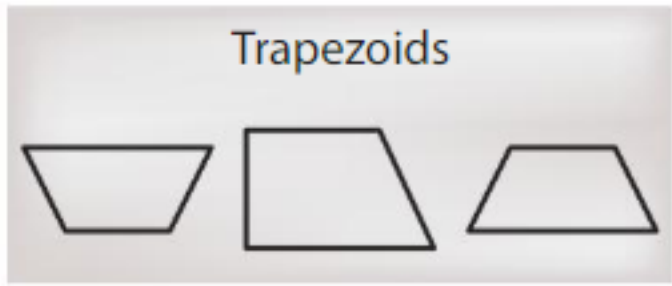
13.3 Classify Quadrilaterals



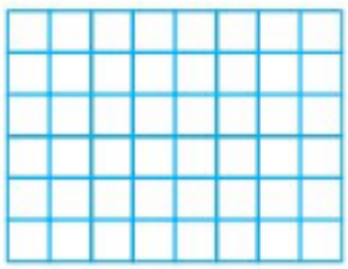


6. How are squares and trapezoids alike? How are they different?

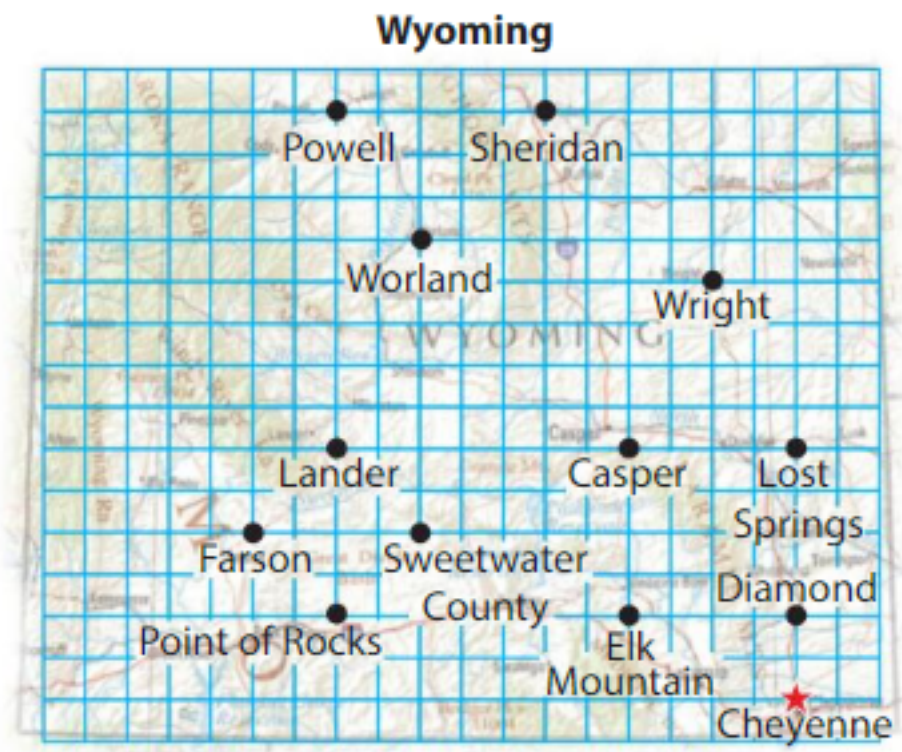
7. What name can you use to classify all squares and trapezoids?

13.4 Draw Quadrilaterals

8. Draw a quadrilateral that has four right angles. Name the quadrilateral.



9. **Modeling Real Life** A helicopter travels to various locations in Wyoming. Draw to show a route that forms a square. Write the names of the locations you use.



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14 Represent and Interpret Data

- Bamboo is one of the fastest-growing plants in the world. What are some uses of bamboo?
- Why is it important to know how fast a plant grows? What are some ways you can represent the height of a plant?

Chapter Learning Target:
Understand data.

Chapter Success Criteria:
- I can identify a tool to collect data.
- I can create a tally chart to make a graph.
- I can represent data in different ways.
- I can interpret data in different ways.

Houghton Mifflin Harcourt Publishing Company

Name _____

14 Vocabulary

Review Word

multiples

Organize It

Complete the graphic organizer.

Multiples Of	Examples	Non-Examples
2	4, 8, _____	3, 11, _____
3	6, 12, _____	4, 10, _____
5	10, 25, _____	9, 14, _____
10	20, 70, _____	8, 17, _____

Define It

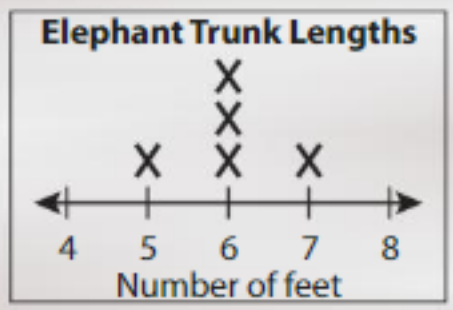
Use your vocabulary cards to match.

1. frequency table

Two-Color Counters	
Red	◯◯◯
Yellow	◯◯

Each ◯ = 2 flips.

2. line plot



3. picture graph

Two-Color Counters	
Red	6
Yellow	4

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Chapter 14 Vocabulary Cards

bar graph

frequency table

key

line plot

picture graph

scale

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A table that gives the number of times something occurs

Two-Color Counters	
Red	6
Yellow	4

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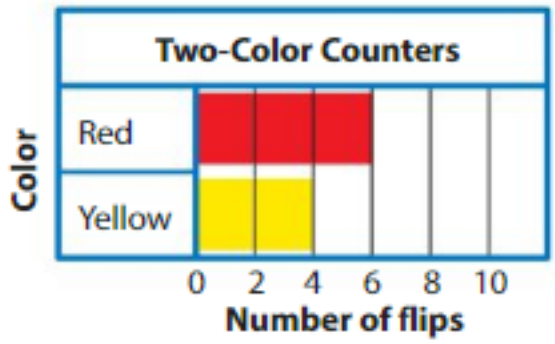
A graph that shows data using bars



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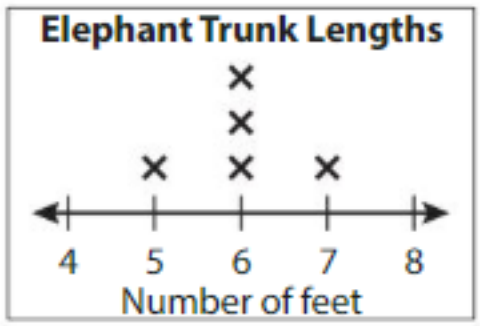
A graph that uses marks above a number line to show data values



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The part of a graph that gives the value of one picture or symbol

Two-Color Counters	
Red	◯◯◯
Yellow	◯◯

Each ◯ = 2 flips.

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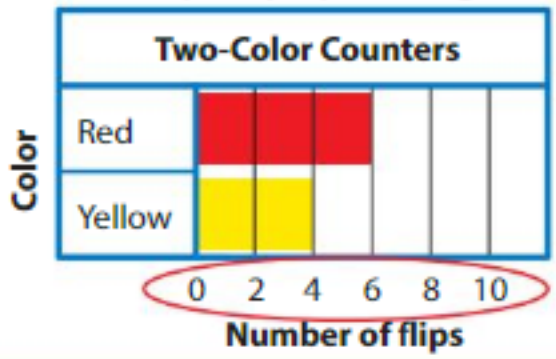
A group of labels that shows the values at equally spaced grid lines



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A graph that shows data using pictures or symbols

Two-Color Counters	
Red	◯◯◯
Yellow	◯◯

Each ◯ = 2 flips.

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English Spanish

Name _____

Read and Interpret Picture Graphs

14.1

Learning Target: Understand the data shown by a picture graph.

Success Criteria:

- I can explain how to use a key to read a picture graph.
- I can use a picture graph to answer questions.

FLORIDA STANDARDS
MAFS.3.MD.2.3

Explore and Grow

You survey 14 students about their favorite type of party. The results are shown on the left picture graph. Use the key to represent the same data on the right picture graph.

Favorite Type of Party	
Bounce house	☺ ☺ ☺
Costume	☺
Pool	☺ ☺
Skating	☺

Each ☺ = 2 students.

Favorite Type of Party	
Bounce house	
Costume	
Pool	
Skating	

Each ☺ = 1 student.

MP **Structure** You ask one more student to name his favorite type of party. He chooses pool party. How can you represent this on each graph? Explain.

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English Spanish

Think and Grow: Read and Interpret Picture Graphs

A **picture graph** shows data using pictures or symbols. The **key** of a picture graph gives the value of one picture, or symbol. The value of one picture, or symbol, can be greater than 1.

Example Use the graph to answer the questions.

National Forests	
Idaho	🌲🌲🌲🌲🌲🌲
Colorado	🌲🌲🌲
Oregon	🌲🌲🌲🌲🌲🌲
Arizona	🌲🌲🌲

Half of a picture, or symbol, represents half the value of the whole picture. So, each 🌲 = 1 forest.

Each 🌲 = 2 forests. ← key

How many national forests are in Arizona?

3 🌲s = 3 × _____ = _____

There are _____ national forests in Arizona.

How many national forests are in Colorado?

2 🌲s = 2 × _____ = _____

1 🌲 = _____

_____ + _____ = _____

There are _____ national forests in Colorado.

Show and Grow

1. Use the graph to answer the questions.

Favorite Pet	
Dog	☺☺☺
Cat	☺☺
Fish	☺◔

Each ☺ = 10 students.

How many students chose dog?

How many students chose fish?

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English Spanish

Name _____

Apply and Grow: Practice

2. Use the graph to answer the questions.

Favorite Winter Activity	
Skiing	☺☺☺◔
Snowboarding	☺☺
Sledding	☺☺☺☺◔
Ice-skating	☺☺☺

Each ☺ = 2 students.

What does the symbol ☺ represent?

How many more students chose skiing than ice-skating?

How many students did *not* choose sledding?

3. Use the graph to answer the questions.

Mangoes Eaten in Summer	
June	☀☀☀◔
July	☀☀☀☀☀☀☀
August	☀☀☀

Each ☀ = 6 mangoes.

How many mangoes were eaten in June?

How many total mangoes were eaten in the months shown?

Were more mangoes eaten in July or in June and August combined?

4. MP **Logic** If ◯◯◔ = 25 on a picture graph, then what value does ◯ represent? Explain.

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Think and Grow: Modeling Real Life

During which two weeks were a total of 52 cans recycled?

Cans Recycled	
Week 1	
Week 2	
Week 3	
Week 4	

Each = 8 cans.

During _____ and _____ 52 cans were recycled.

Show and Grow

5. Which two origami animals did a total of 32 students choose?

Favorite Origami Animal	
Swan	
Butterfly	
Frog	
Penguin	

Each = 4 students.

How many more students chose frog or penguin than swan or butterfly?

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English Spanish

Name _____

Homework & Practice 14.1

Learning Target: Understand the data shown by a picture graph.

Example Use the graph to answer the questions.

Daily Sleep Totals	
Cat	★★★½
Sloth	★★★★
Giraffe	½
Brown bat	★★★★★
Elephant	★

Each ★ = 4 hours.

How many hours do sloths sleep each day?

4 ★s = 4 × 4 = 16

Sloths sleep 16 hours each day.

How many hours do cats sleep each day?

3 ★s = 3 × 4 = 12

1 ½ = 2

12 + 2 = 14

Cats sleep 14 hours each day.

1. Use the graph to answer the questions.

What value does the symbol ☺ represent?

How many students chose pterodactyl?

How many students chose stegosaurus or velociraptor?

How many students did *not* choose tyrannosaur?

Favorite Dinosaur	
Velociraptor	☺☺☺☺
Tyrannosaur	☺☺☺☺☺
Pterodactyl	☺☺☺☺☺
Stegosaurus	☺☺☺
Triceratops	☺☺☺

Each ☺ = 10 students.

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English Spanish

2. Use the graph to answer the questions.

How many dogs participated in the survey?

Which dog treat has more votes than biscuits, but fewer votes than peanut butter? How many dogs chose this treat?

Favorite Dog Treat	
Dog bone	☺ ☺ ☺ ☺
Peanut butter	☺ ☺ ☺ ☺ ☺
Cheese	☺ ☺ ◔
Biscuits	☺ ☺ ☺ ◔

Each ☺ = 2 dogs.

DIG DEEPER! Why would it be difficult to use a key where the value of one symbol represents an odd number of dogs?

YOU BE THE TEACHER Newton says that one more dog likes peanut butter than dog bones. Is he correct? Explain.

---

3. Modeling Real Life Which creature has 3 more eyes than the squid?

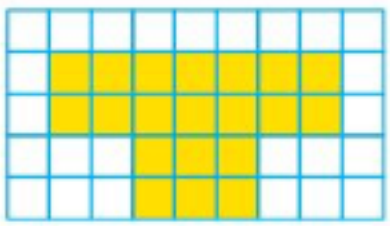
Number of Eyes	
Spider	👁 👁 👁 👁
Praying mantis	👁 👁 ◔
Squid	👁
Starfish	👁 👁 👁

Each 👁 = 2 eyes.

Review & Refresh

Find the area of the shape.

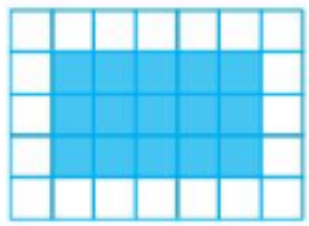
4.



☐ = 1 square centimeter

Area = _____

5.



☐ = 1 square meter

Area = _____

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English Spanish

Name _____

Make Picture Graphs 14.2

Learning Target: Use data to make picture graphs.

Success Criteria:

- I can read a frequency table.
- I can create a key for a picture graph.
- I can use a frequency table to make a picture graph.

FLORIDA STANDARDS
MAFS.3.MD.2.3

Explore and Grow

Flip a two-color counter 10 times. Record the results. Then complete the picture graph.

Tally Chart

Color Flipped	
Red	
Yellow	

Frequency Table

Color	Total
Red	
Yellow	

Picture Graph

Two-Color Counters	
Red	
Yellow	

Each ◯ = 2 flips.

MP **Reasoning** Why might you change the key if you flip the counter 100 times?

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English Spanish

Think and Grow: Make Picture Graphs

A **frequency table** is a table that gives the number of times something occurs.

Example You survey students about their favorite planet. The frequency table shows the results. Use the table to complete the picture graph.

Favorite Planet	
Earth	25
Mars	15
Saturn	30
Jupiter	20

Step 1: Write the title at the top of the picture graph. Label a row for each category.

Step 2: Look at the numbers in the table. Choose a value for the key.

Step 3: Use the key to decide how many symbols you need for each planet. Then draw the symbols.

Earth	
Mars	
Saturn	
Jupiter	

Each ☺ = _____ students.

Show and Grow

1. Use the frequency table to complete the picture graph.

Books You Read	
June	6
July	3
August	9

June	
July	
August	

Each ◯ = _____ books.

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English Spanish

Name _____

Apply and Grow: Practice

2. Use the frequency table to complete the picture graph.

Inches of Snowfall	
January	30
February	25
March	10

January	
February	

Each ◯ = _____ inches.

How many symbols did you draw to represent 10 inches of snowfall in March?

How many inches do you think April would receive?

3. Use the frequency table to complete the picture graph.

Favorite Superpower	
Flying	32
Time travel	40
Super strength	12
Invisibility	24
Super speed	28

Super strength	
Invisibility	

Each 🙂 = _____ students.

MP **Structure** Choose a different value for the key. How would the picture graph change?

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Think and Grow: Modeling Real Life

You survey 90 students about their favorite type of field trip. 35 students choose science center, 10 choose theater, and 20 choose zoo. The rest of the students choose museum. Complete the picture graph.

Each ☺ = _____ students.

Show and Grow

You survey 48 students about their favorite type of movie. 8 students choose cartoon, 12 choose action, and 24 choose comedy. The rest of the students choose musical. Complete the picture graph.

Each ☺ = _____ students.

All of the students who chose musical go to see a movie. Each ticket costs $9. The students use two $20 bills to pay for all of the tickets. What is the change?

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English Spanish

Name _____

Homework & Practice 14.2

Learning Target: Use data to make picture graphs.

Example Use the frequency table to complete the picture graph.

Future Job	
Astronaut	70
Firefighter	55
Actor	35
Doctor	50
Scientist	65

Future Job	
Astronaut	
Firefighter	
Actor	
Doctor	
Scientist	

Each = 10 students.

1. Use the frequency table to complete the picture graph.

Favorite Type of Art	
Drawing	10
Ceramics	25
Painting	15
Crafts	30

Drawing	
Ceramics	
Painting	
Crafts	

Each = _____ students.

Which type of art has more votes than painting, but fewer votes than crafts? How many students chose that type of art?

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English Spanish

2. Use the frequency table to complete the picture graph.

Insects You See	
Ant	24
Butterfly	6
Bee	3
Ladybug	12

Butterfly	
Ladybug	

Each ◯ = _____ insects.

DIG DEEPER! You see 1 more bee and 4 more ladybugs. How might you change the key?

---

3. **Modeling Real Life** You survey 72 students about their favorite carnival ride. 12 choose Ferris wheel, 24 choose swings, and 6 choose bumper cars. The rest of the students choose roller coaster. Complete the picture graph.

Each ☺ = _____ students.

Modeling Real Life All of the students who chose roller coaster want to ride together. Each ride ticket costs $2. The students have three $10 bills and four $5 bills. Will they have enough to ride the roller coaster together?

Review & Refresh

Find the sum.

4. 532 + 54 = _____ | **5.** 718 + 226 = _____ | **6.** 81 + 647 = _____

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English Spanish

Name _____

Read and Interpret Bar Graphs

14.3

Learning Target: Understand the data shown by a bar graph.

Success Criteria:

- I can explain how to use a scale to read a bar graph.
- I can use a bar graph to answer questions.

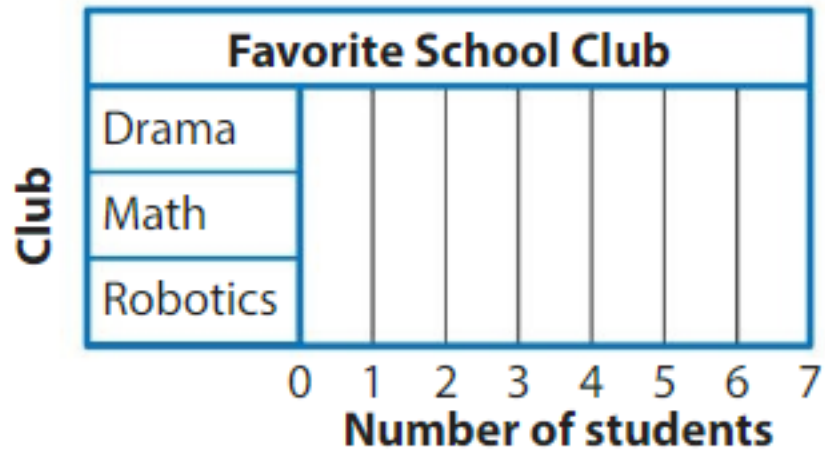
FLORIDA STANDARDS
MAFS.3.MD.2.3

Explore and Grow

You survey 12 students about their favorite school club. The results are shown on the picture graph. Represent the same data on the bar graph.

Favorite School Club	
Drama	☺ ☺
Math	☺
Robotics	☺ ☺ ☺

Each ☺ = 2 students.



MP **Structure** How would you change the scale of the bar graph to match the picture graph?

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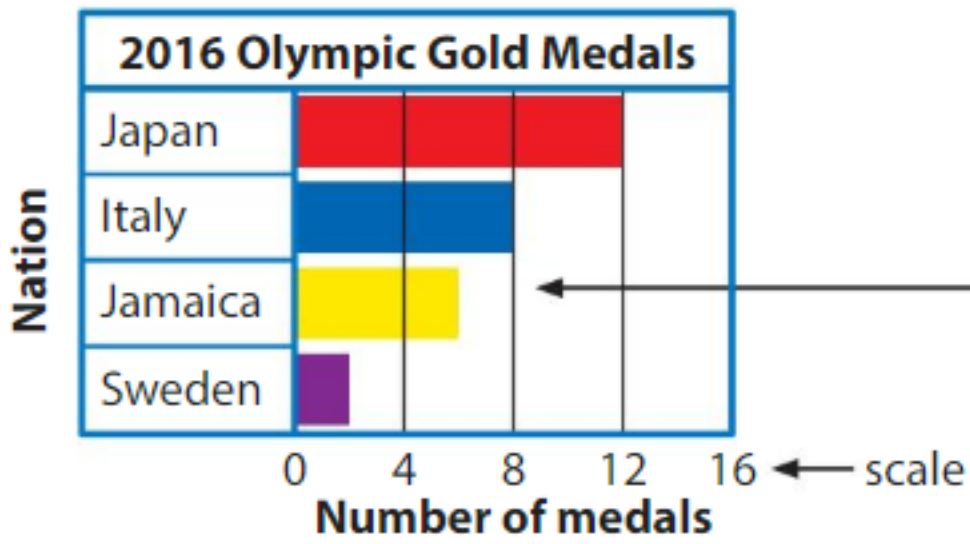
Think and Grow: Read and Interpret Bar Graphs

A **bar graph** shows data using bars. The **scale** of a bar graph is the group of labels that shows the values at equally spaced grid lines.

Example Use the graph to answer the questions.



When a bar ends halfway between two grid lines, the data value for the bar is halfway between the two numbers on the scale.

How many gold medals did Japan win?

Japan won _____ gold medals.

How many gold medals did Jamaica win?

Jamaica won _____ gold medals.

Which country won the fewest gold medals?

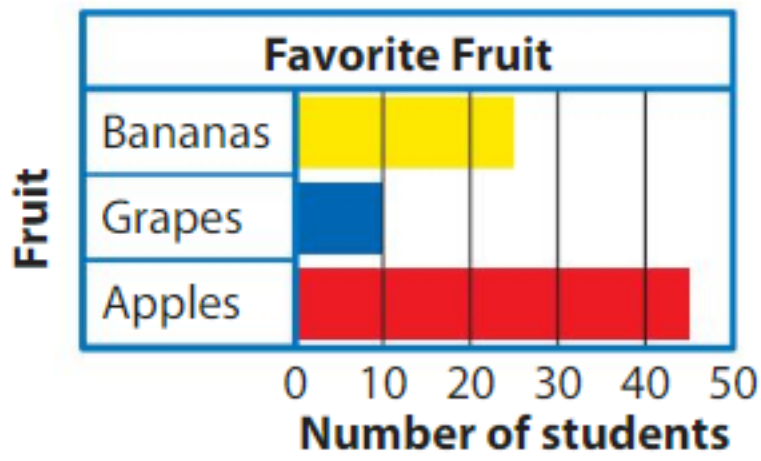
_____ won the fewest gold medals.

Show and Grow

1. Use the graph to answer the questions.

How many students chose grapes?

Which fruit is the most favorite?



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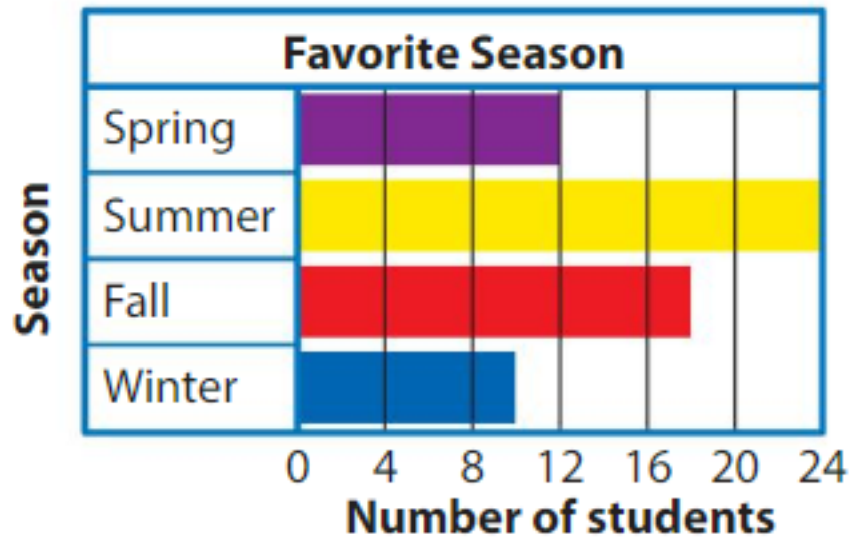
English Spanish

Name _____

Apply and Grow: Practice

2. Use the graph to answer the questions.



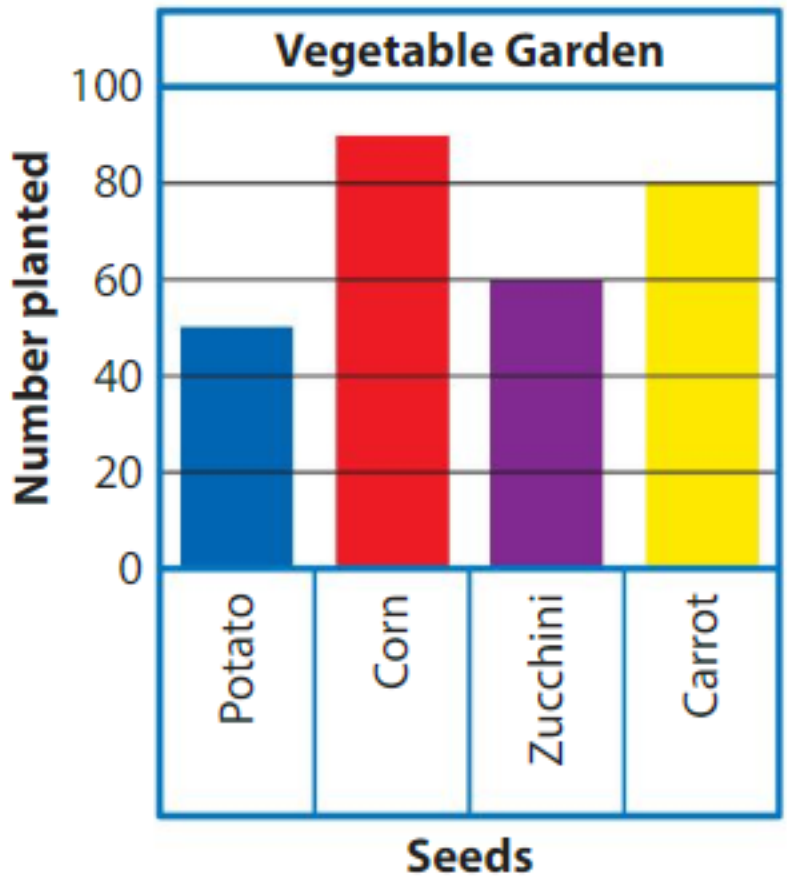
How many students does each grid line represent?

How many students chose fall?

Which season is the least favorite?

---

3. Use the graph to answer the questions.



How many vegetable seeds did the farmer plant in all?

The farmer wants to plant green bean seeds. She plants more green bean seeds than zucchini seeds, but fewer than carrot seeds. How many green bean seeds could the farmer have planted?

The farmer plants 30 more potato seeds. Will the farmer have more potatoes or more corn?

---

4. **Writing** Do you think a bar graph or a picture graph is easier to read? Explain.

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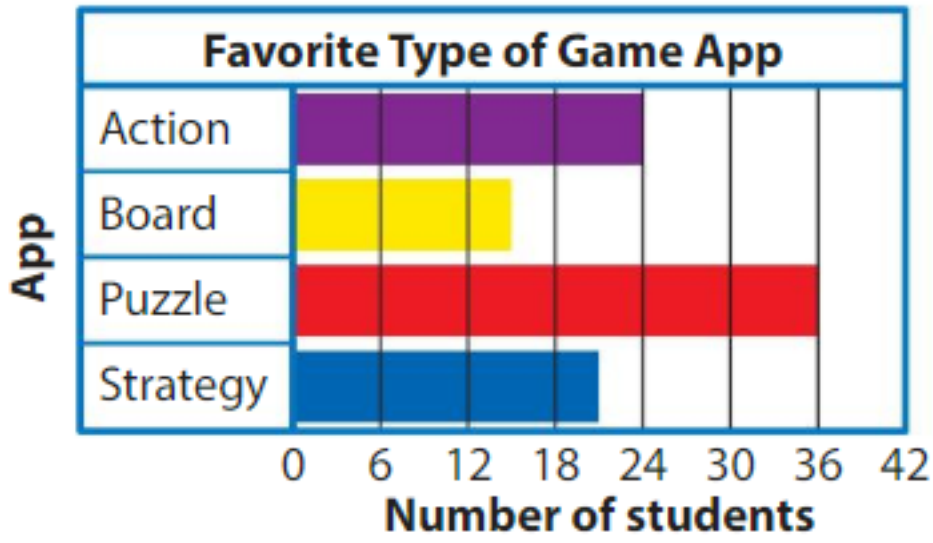
English Spanish

Think and Grow: Modeling Real Life

How many more students need to choose the strategy app so that strategy is the most favorite?



Understand the problem:

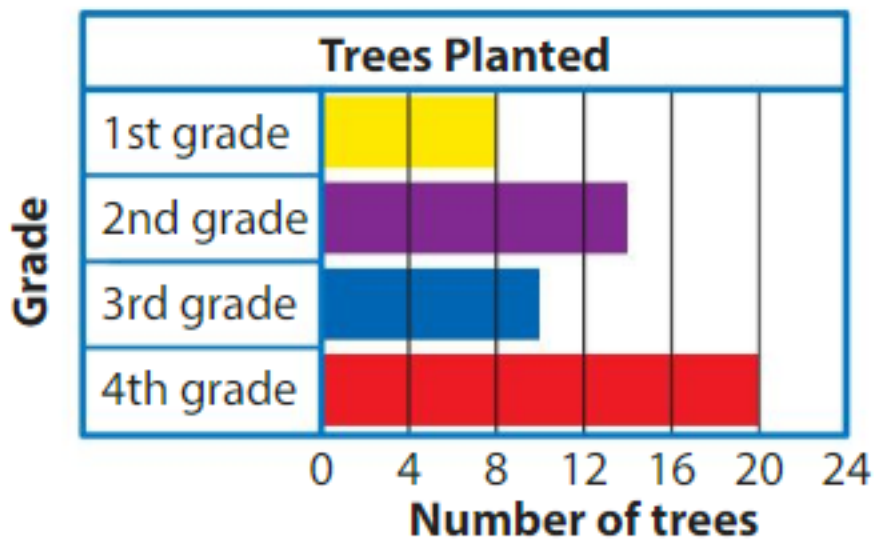
Make a plan:

Solve:

_____ more students need to choose the strategy app so it is the most favorite.

Show and Grow

5. Each grade needs to plant 20 trees. How many more trees does second grade need to plant to complete the goal?



How many more trees did fourth grade plant than first grade and third grade combined?

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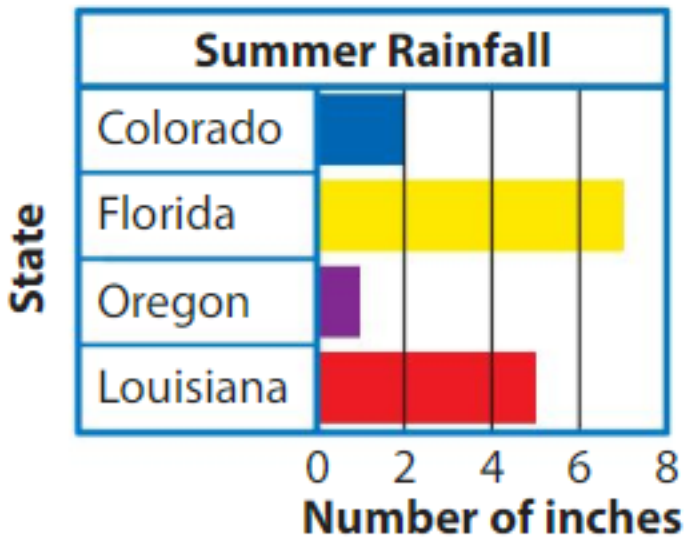
English Spanish

Name _____

Homework & Practice 14.3

Learning Target: Understand the data shown by a bar graph.

Example Use the graph to answer the questions.



How many inches of rain did Colorado have during the summer?

Colorado had 2 inches of rain.

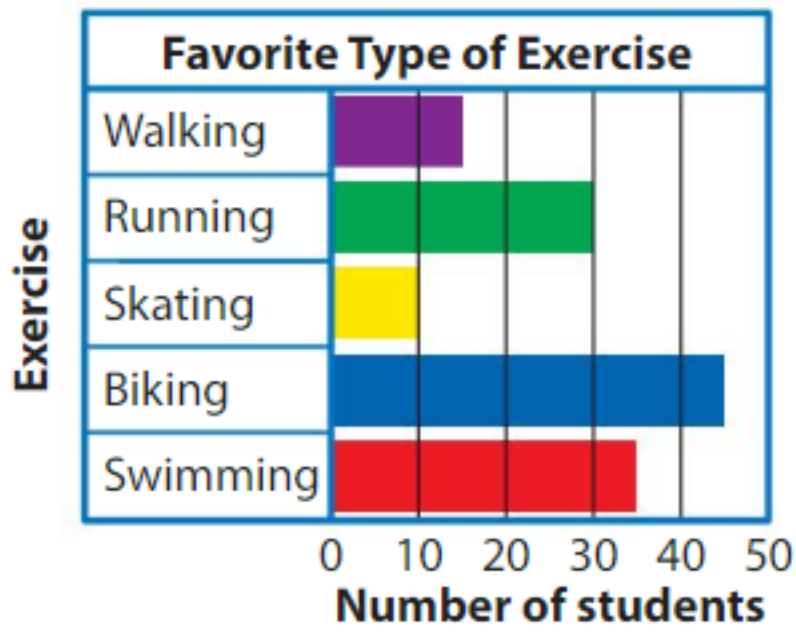
How many inches of rain did Louisiana have during the summer?

Louisiana had 5 inches of rain.

Which state had the most rainfall during the summer?

Florida had the most rainfall.

1. Use the graph to answer the questions.



How many students does each grid line represent?

Which type of exercise is the least favorite?

How many fewer students chose running than swimming?

How many students chose walking or biking?

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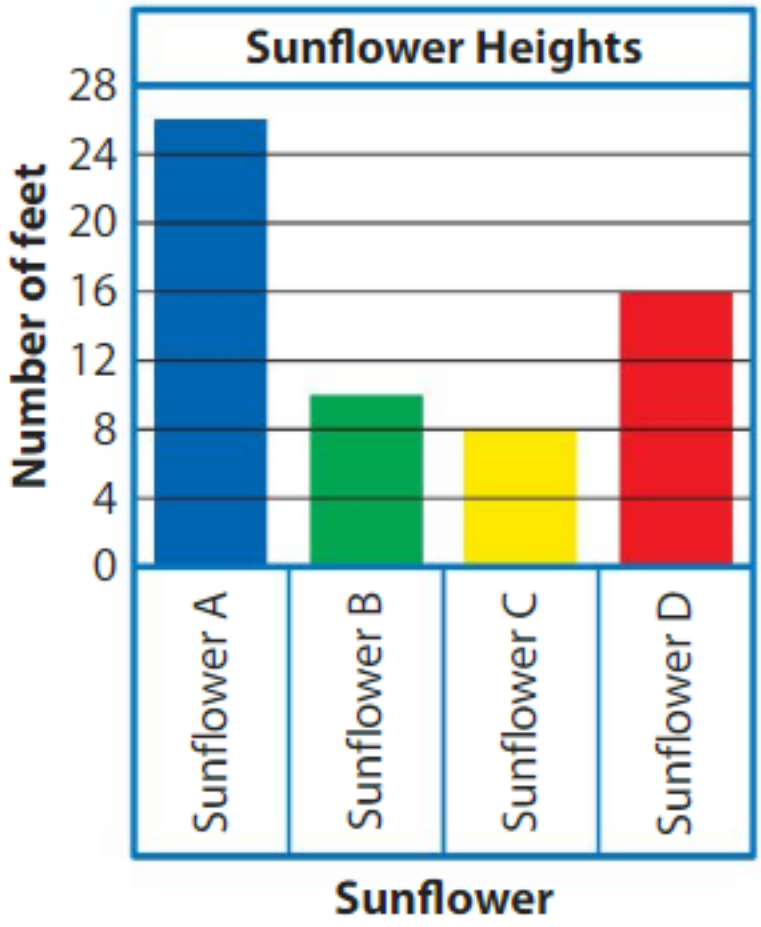
English Spanish

2. Use the graph to answer the questions.



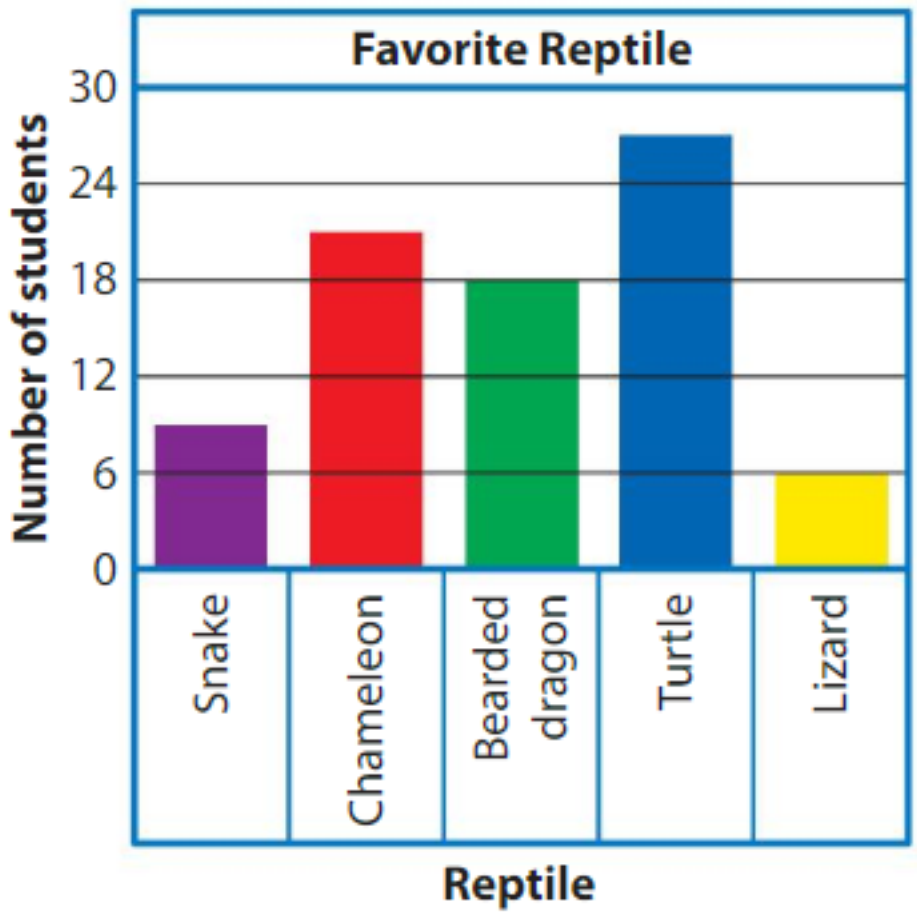
Which sunflowers are taller than 11 feet?

Sunflower E has a height of 15 feet. How much taller is Sunflower A than Sunflower E?

Writing Which sunflower is the shortest? Explain.

---

3. Modeling Real Life Use the graph to answer the questions.



How many more students need to choose chameleon so that chameleon is the most favorite?

You survey 10 more students and they all choose snake. What is the new total number of students who chose snake?

How many more students chose turtle than bearded dragon and lizard combined?

Review & Refresh

Estimate the difference.

4. 96 − 47 ____ − ____ = ____

5. 678 − 142 ____ − ____ = ____

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English Spanish

Name _____

Make Bar Graphs 14.4

Learning Target: Use data to make bar graphs.

Success Criteria:

- I can read a frequency table.
- I can choose a scale for a bar graph.
- I can use a frequency table to make a bar graph.

FLORIDA STANDARDS
MAFS.3.MD.2.3

Explore and Grow

Spin the Color Spinner 10 times. Record the results. Then complete the bar graph.

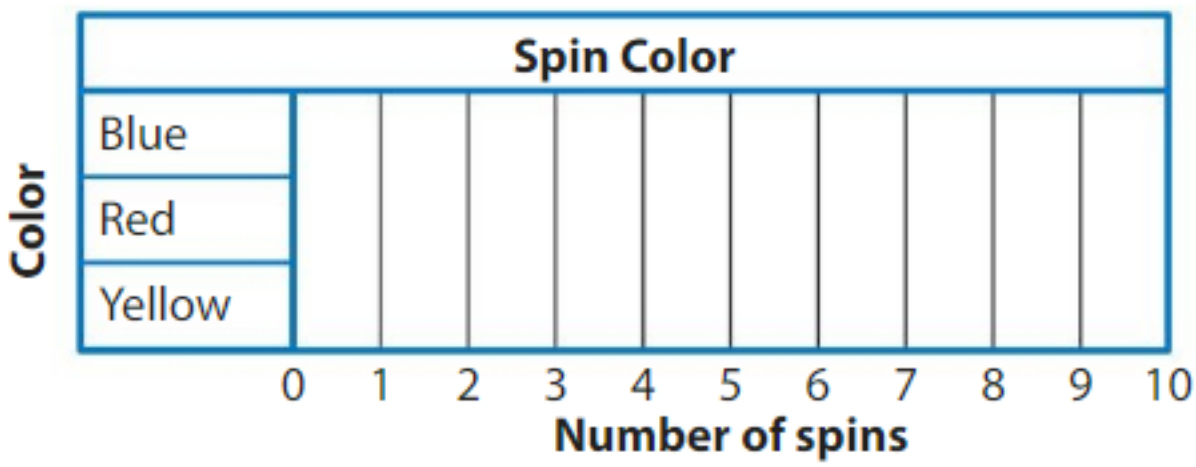
Tally Chart

Spin Color	
Blue	
Red	
Yellow	

Frequency Table

Spin Color	
Blue	
Red	
Yellow	

Bar Graph



MP **Reasoning** Explain how you would change the scale if you spin the spinner 100 times.

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English Spanish

Think and Grow: Make Bar Graphs

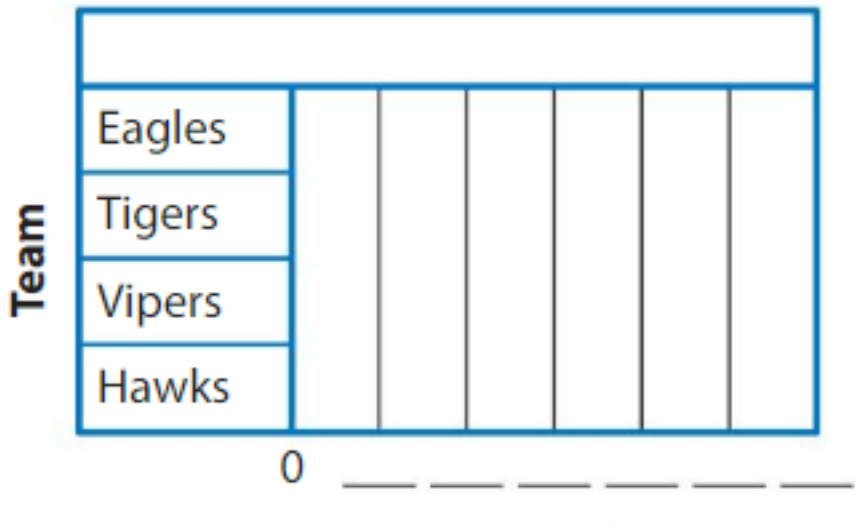
Example You record the number of times each baseball team wins. The frequency table shows the results. Use the table to complete the bar graph.

Team	Wins
Eagles	6
Tigers	3
Vipers	12
Hawks	9

Step 1: Write the title at the top of the bar graph. Label a row for each category. Label the categories.

Step 2: Look at the numbers in the table. Use a scale so that most of the bars end on a grid line. Label the scale.

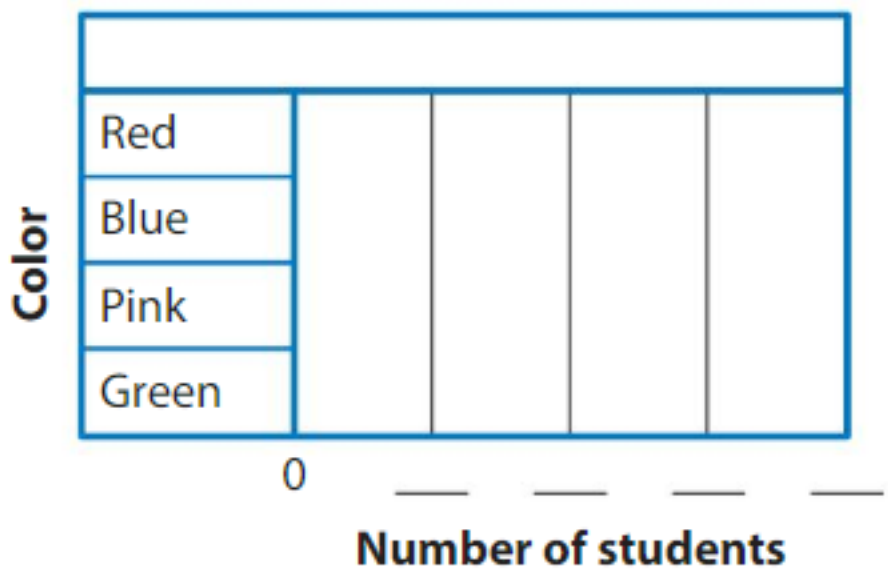
Step 3: Draw and shade a bar for each team.



Show and Grow

1. Use the frequency table to complete the bar graph.

Favorite Color	
Red	2
Blue	8
Pink	4
Green	5



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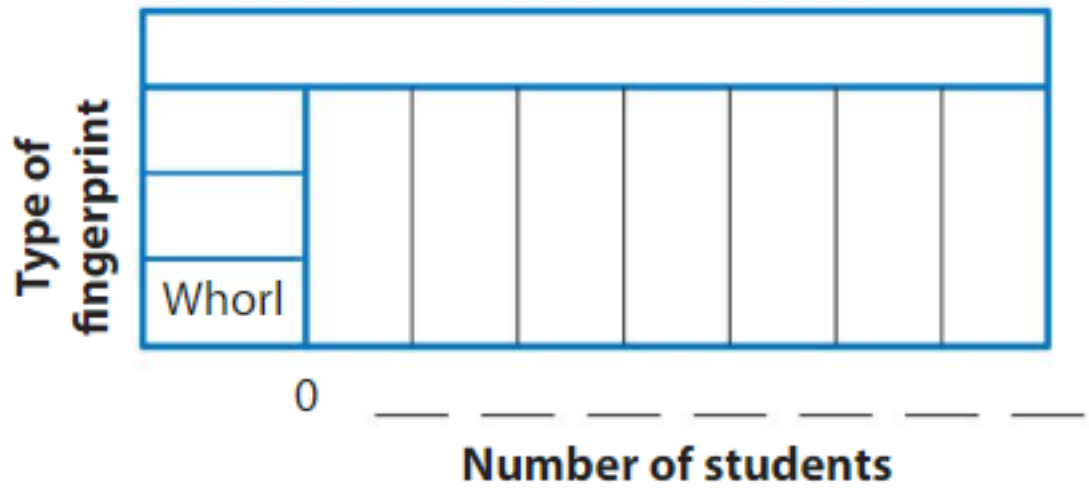
English Spanish

Name _____

Apply and Grow: Practice

2. Use the frequency table to complete the bar graph.

Type of Fingerprint	
Arch	100
Loop	110
Whorl	80

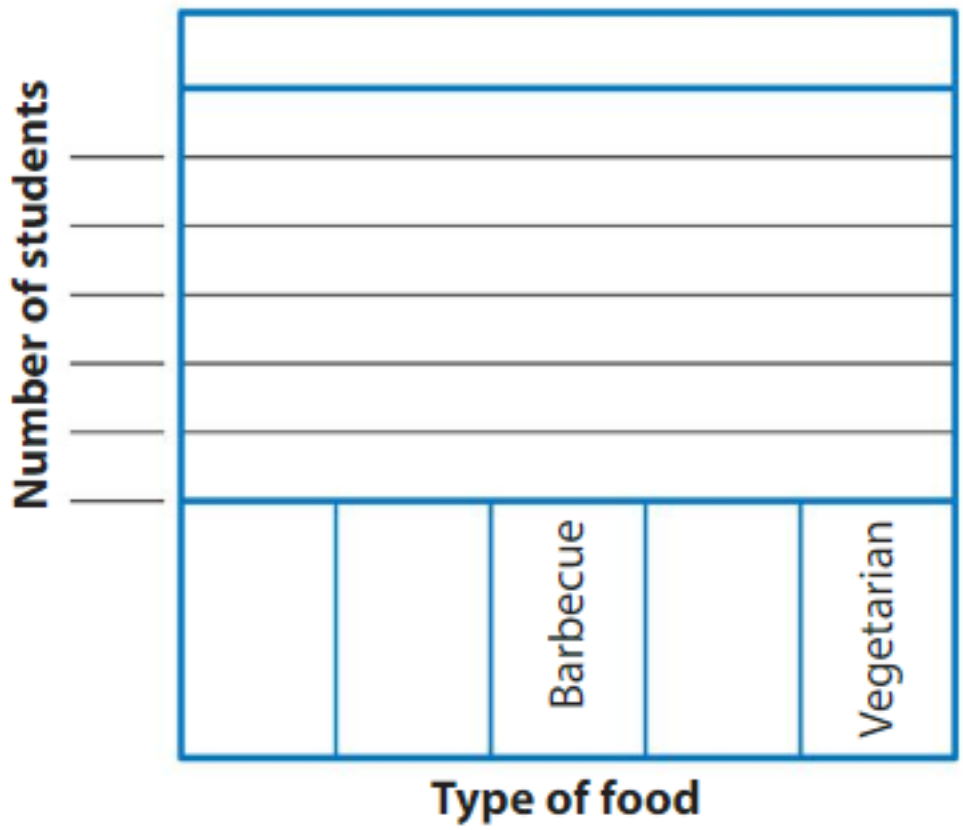


How would you use the graph to decide which type of fingerprint is the most common?

3. Use the frequency table to complete the bar graph.

Favorite Type of Food	
Italian	16
Mexican	18
Barbecue	12
Asian	6
Vegetarian	4

How many fewer students chose the least favorite type of food than the most favorite type of food?



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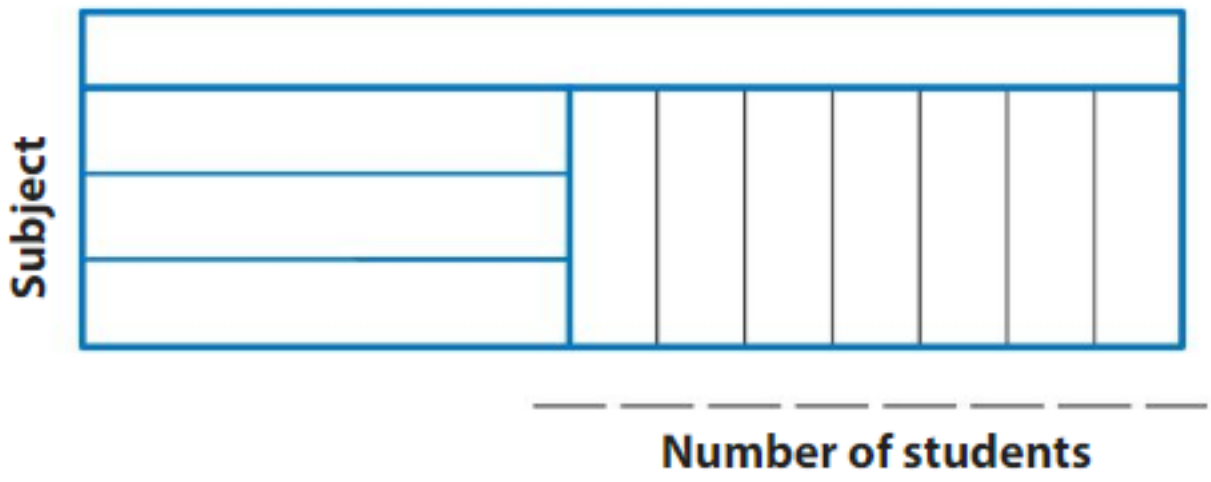
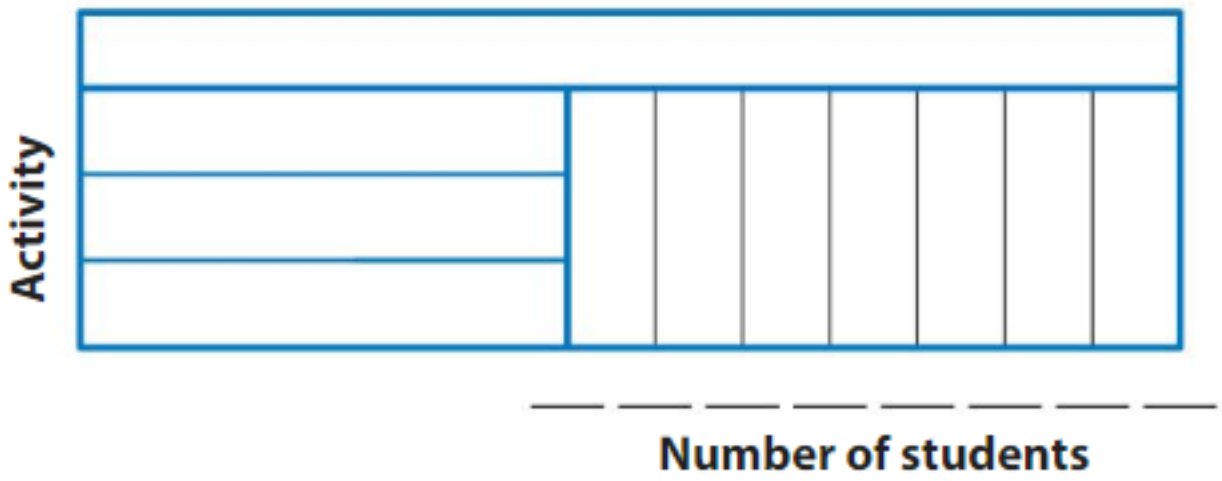
Think and Grow: Modeling Real Life

You survey 27 students about their favorite subject. Nine students choose science. Six fewer students choose English than science. The rest of the students choose math. Complete the bar graph.



Show and Grow

4. You survey 22 students about their favorite camp activity. Eight students choose archery. Four more students choose swimming than archery. The rest of the students choose hiking. Complete the bar graph.



How many fewer students chose archery than swimming and hiking combined?

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English Spanish

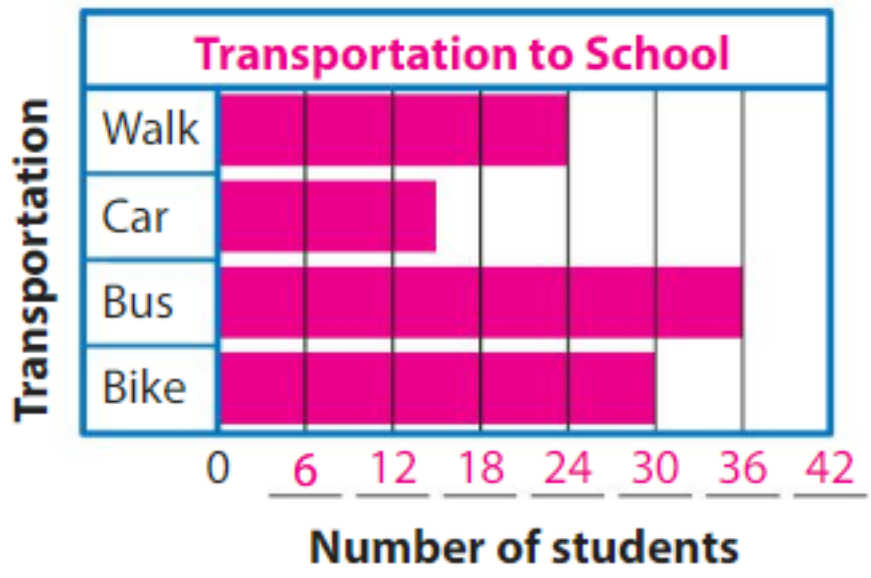
Name _____

Homework & Practice 14.4

Learning Target: Use data to make bar graphs.

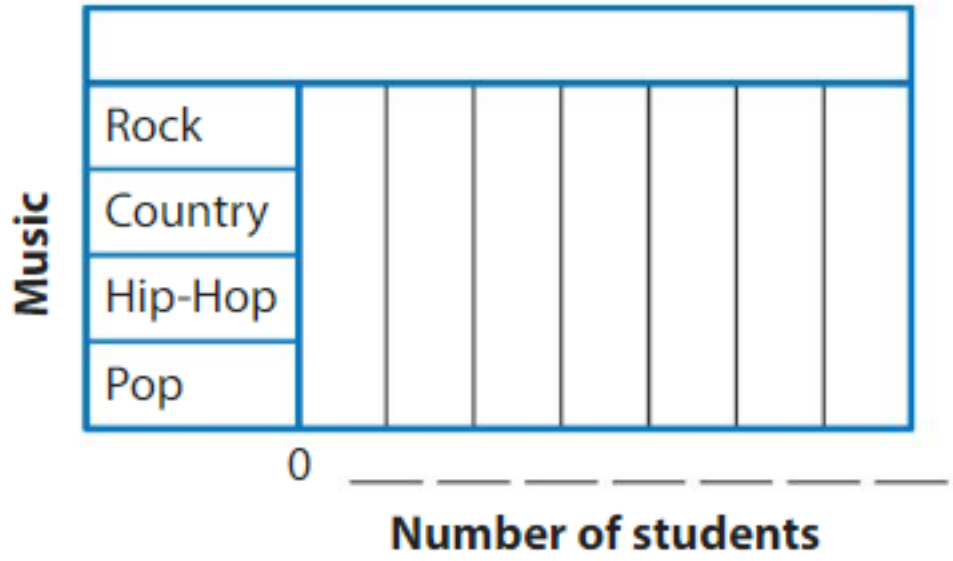
Example Use the frequency table to complete the bar graph.

Transportation to School	
Walk	24
Car	15
Bus	36
Bike	30



1. Use the frequency table to complete the bar graph.

Favorite Type of Music	
Rock	5
Country	10
Hip-Hop	10
Pop	30



How many students does each grid line represent?

How would you use the graph to find the most favorite type of music?

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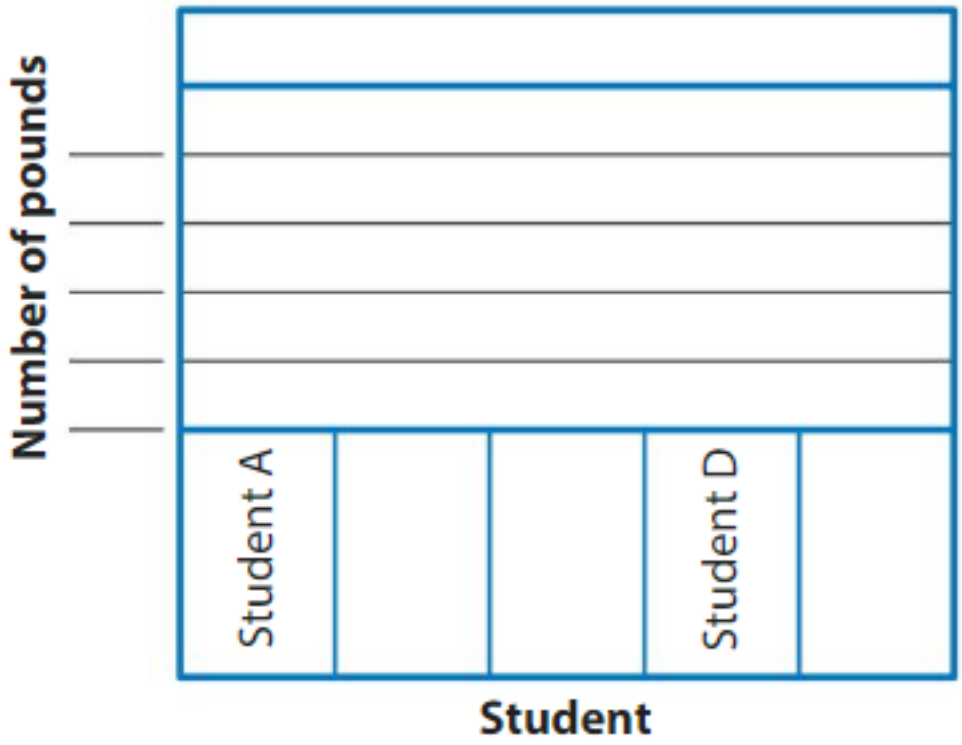
2. Use the frequency table to complete the bar graph.

Weight of Backpack (pounds)	
Student A	12
Student B	10
Student C	16
Student D	4
Student E	6

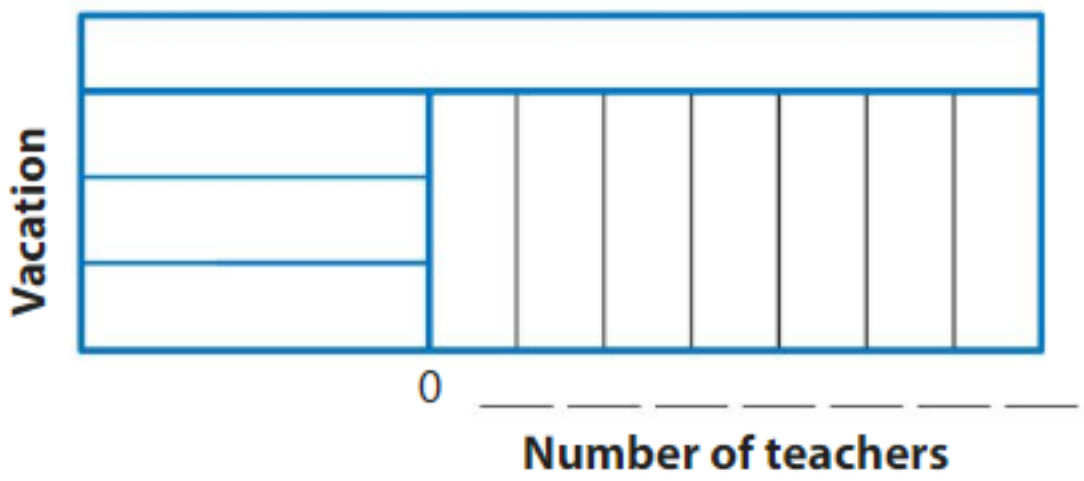


MP **Structure** On the last day of school, each backpack weighs less than 5 pounds. How could the scale of the bar graph change?

---

3. **Modeling Real Life** You survey 26 teachers about their favorite vacation spot. Six teachers choose amusement park. Two more teachers choose camping than amusement park. The rest of the teachers choose beach. Complete the bar graph.

How many fewer teachers chose camping than amusement park and beach combined?



Review & Refresh

Find the difference.

4. 474 − 19 = _____ | **5.** 615 − 204 = _____ | **6.** 232 − 53 = _____

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English Spanish

Name _____

Make Line Plots 14.5

Learning Target: Use data to make line plots.

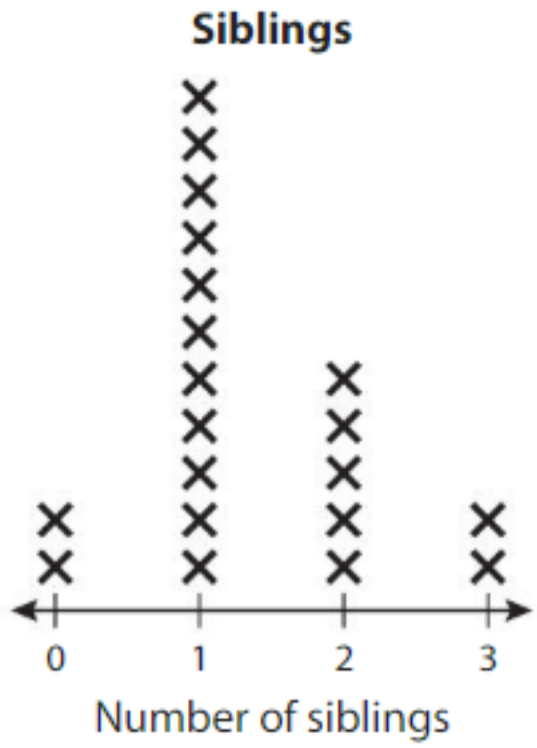
Success Criteria:

- I can read the data shown in a table.
- I can label the scale for a line plot.
- I can make a line plot.

FLORIDA STANDARDS
MAFS.3.MD.2.4

Explore and Grow

A teacher asks students to line up according to the number of siblings they have. The results are shown. Create a Line Plot for the number of siblings the students in your class have.



MP **Structure** Compare the two line plots. How are the line plots the same? How are they different?

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Think and Grow: Make Line Plots

A **line plot** uses marks above a number line to show data values.

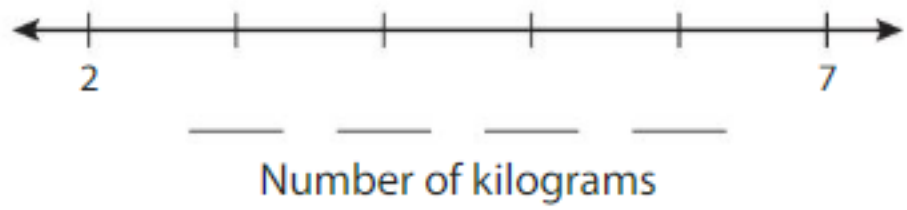
Example The table shows the weights of 15 bald eagles. Use the table to complete the line plot.

Bald Eagle Weights (kilograms)		
3	5	4
4	5	5
5	6	4
4	3	3
4	6	4

Step 1: Write the title at the top of the line plot.

Step 2: Look at the numbers in the table. Use a scale that shows all of the data values. Draw a number line using the scale. Label the scale.

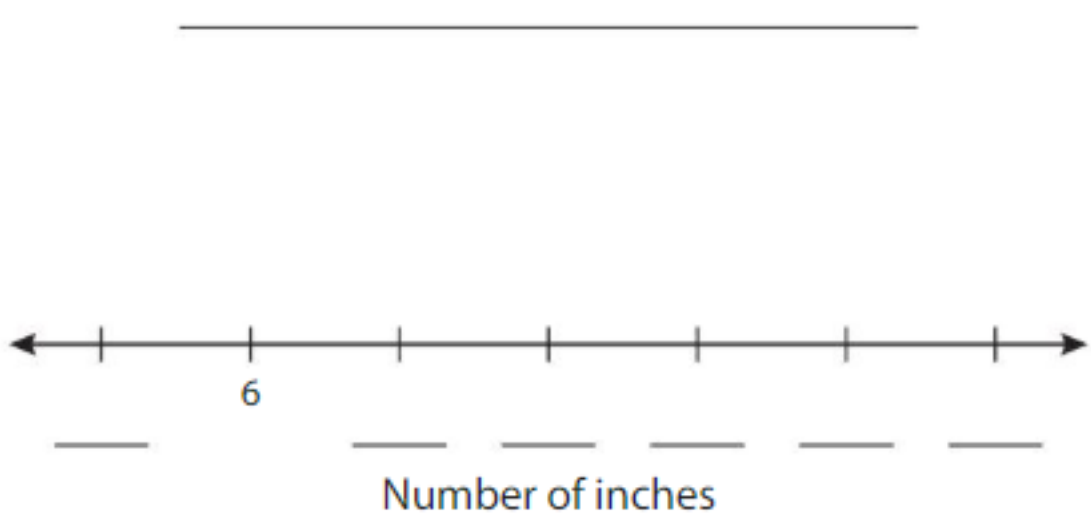
Step 3: Mark an X for each data value.



Show and Grow

1. Use the table to complete the line plot.

Flower Heights (inches)		
8	10	9
6	9	8
7	10	8
7	8	10
8	8	7



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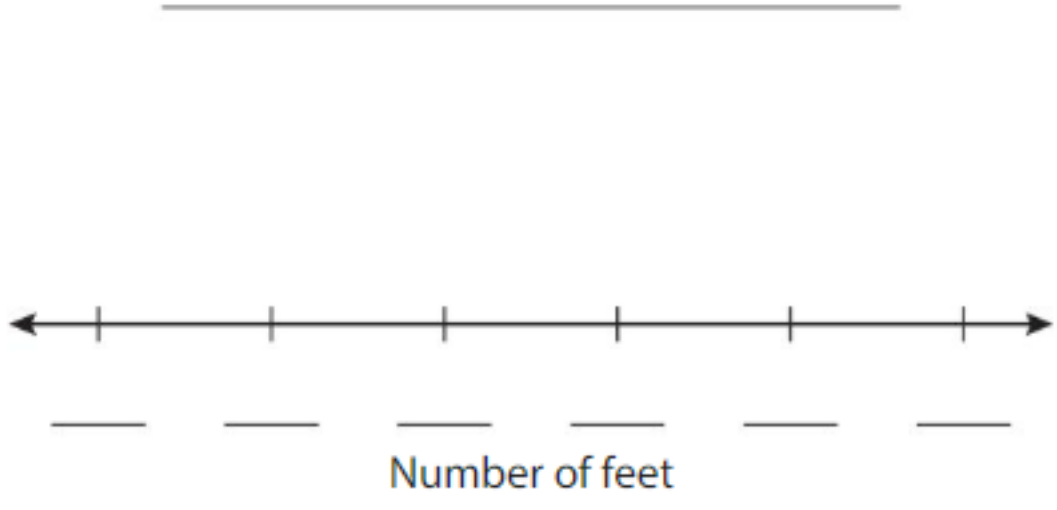
English Spanish

Name _____

Apply and Grow: Practice

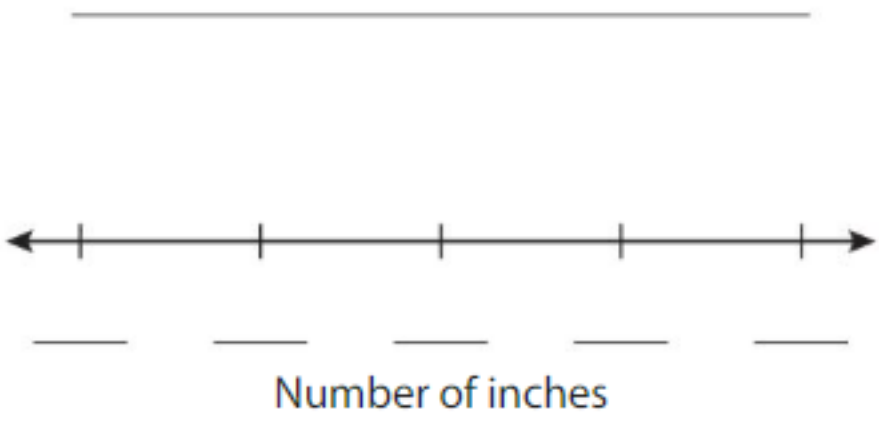
2. Use the table to complete the line plot.

Wave Heights (feet)	
29	30
25	29
28	27
30	25
29	30
27	29
28	25



How many waves were 26 feet tall or taller?

3. Use the table to complete the line plot.



Giraffe Tongue Lengths (inches)	
19	20
17	19
21	20
19	21
20	17
18	20
20	17

Which giraffe tongue length is the most common?

MP **Precision** How many giraffe tongues are 19 inches long?

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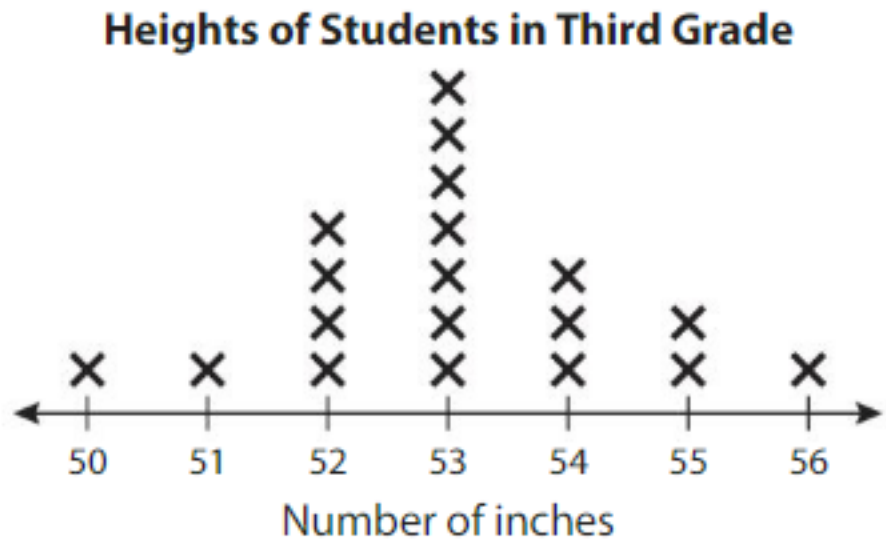
English Spanish

Think and Grow: Modeling Real Life

What is the difference in height of the tallest student and the shortest student?

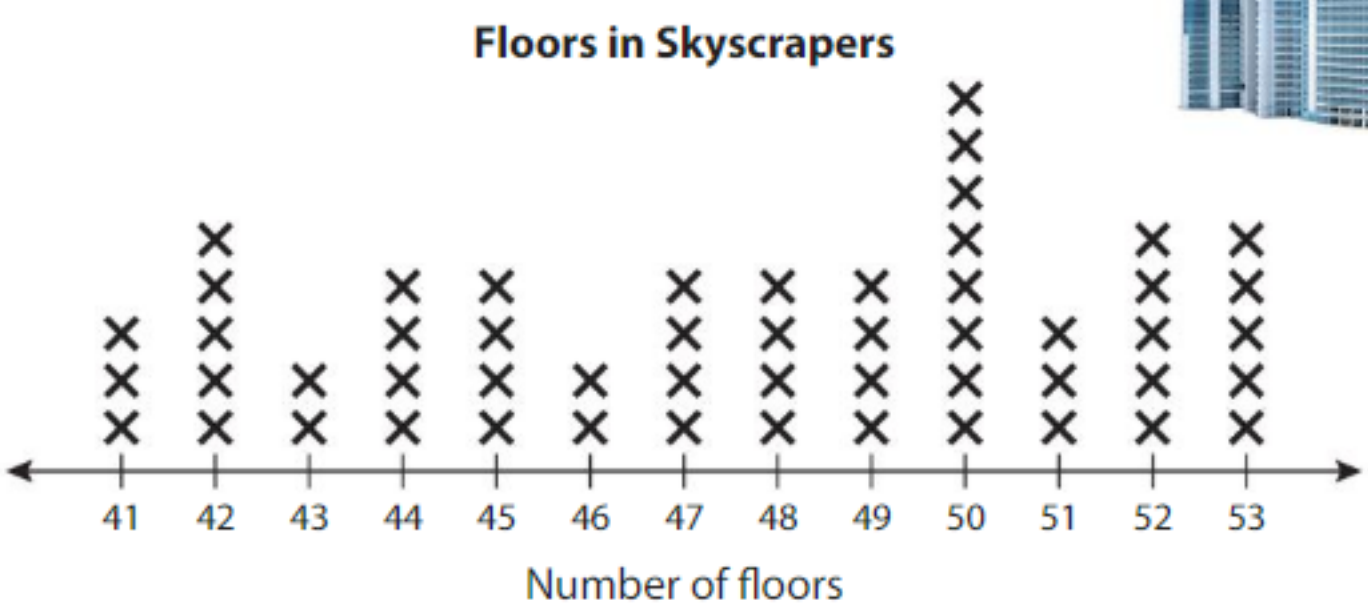
Subtraction equation:



The difference in height is _____ inches.

Show and Grow

4. What is the difference between the greatest number of floors and the least number of floors?



How many fewer skyscrapers are there with over 50 floors than skyscrapers with under 50 floors?

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English Spanish

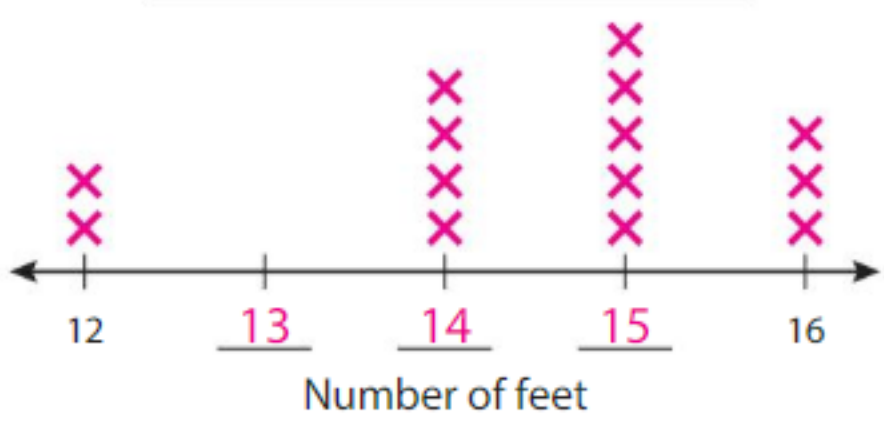
Name _____

Homework & Practice 14.5

Learning Target: Use data to make line plots.

Example Use the table to complete the line plot.

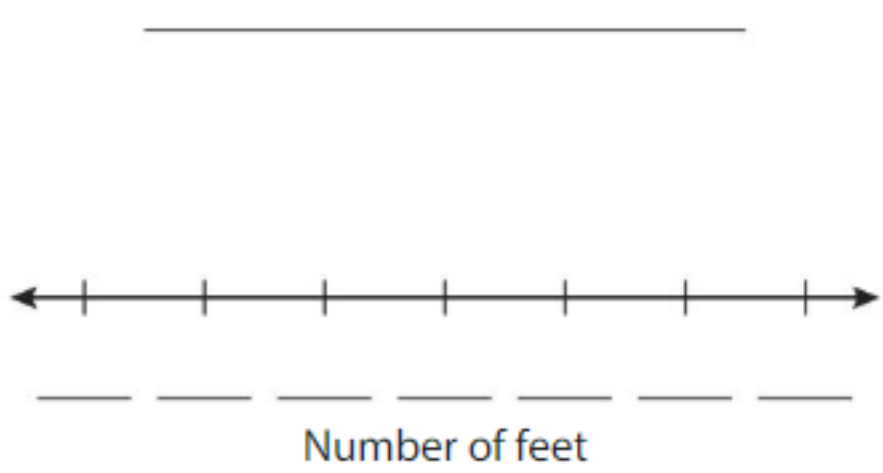
Cornstalk Heights (feet)	
16	15
14	14
12	15
15	15
14	12
16	16
15	14



How many cornstalks are 15 feet tall?

5 cornstalks are 15 feet tall.

1. Use the table to complete the line plot.



How many snakes are longer than 10 feet?

Which snake length is the most common?

Snake Lengths (feet)	
10	11
7	7
6	10
9	5
10	6
7	10
6	9

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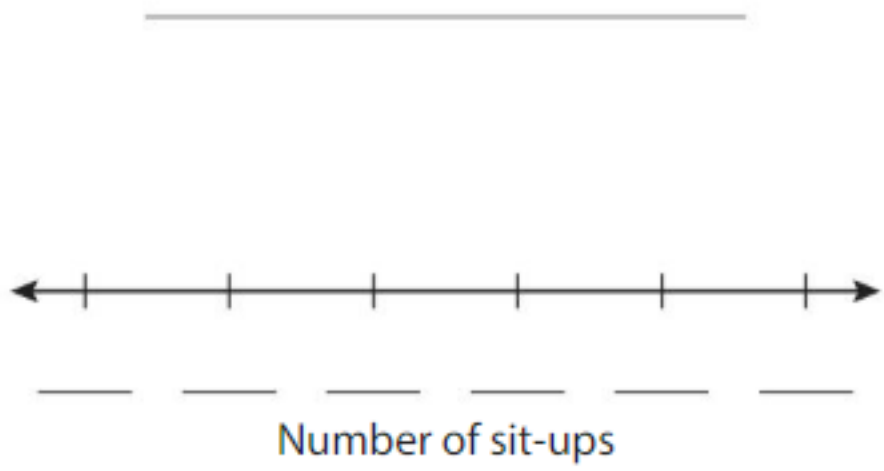
English Spanish

2. Use the table to complete the line plot.

Sit-Ups	
30	27
27	32
32	29
28	27
27	29
29	27
27	32

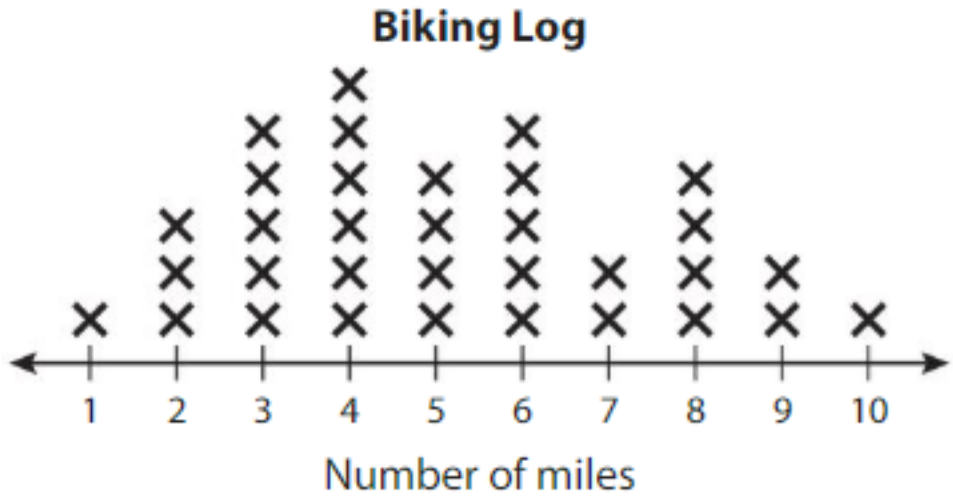


MP **Reasoning** Are most of the students able to complete 30 sit-ups? Explain.

DIG DEEPER! Student H completed more sit-ups than Student F, but fewer sit-ups than Student B. How many sit-ups could Student H have completed?

---

3. Modeling Real Life What is the difference of the most number of miles biked and the least number of miles biked?



Review & Refresh

Find the sum or difference. Use the inverse operation to check.

4. 523 + 237

5. 403 − 252

6. 612 + 387

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English Spanish

Name _____

Measure Lengths: Half Inch

14.6

Learning Target: Measure objects to the nearest half inch and make line plots.

Success Criteria:

- I can measure the lengths of objects to the nearest half inch.
- I can record lengths on a line plot.

FLORIDA STANDARDS

MAFS.3.NF.1.2a
MAFS.3.NF.1.2b
MAFS.3.MD.2.4

Explore and Grow

How much longer is the green ribbon than the yellow ribbon? How do you know?

How much longer is the purple ribbon than the orange ribbon? How do you know?

MP **Structure** How can you use a ruler to measure an object to the nearest half inch?

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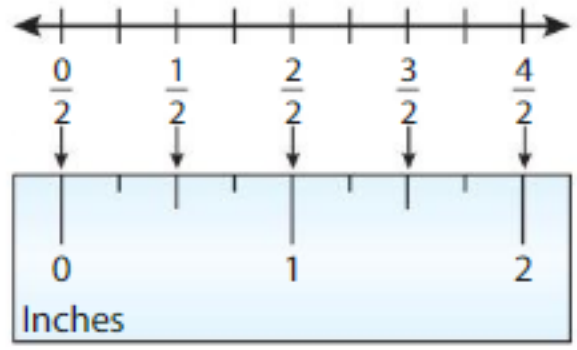
English Spanish

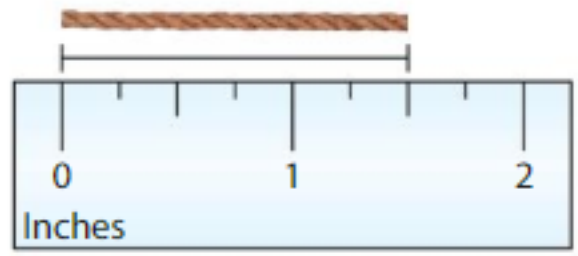
Think and Grow: Measure Lengths: Half Inch

Not all objects are whole numbers of inches long. You can use a ruler to measure length to the nearest half inch. Remember to line up the end of the object with 0.

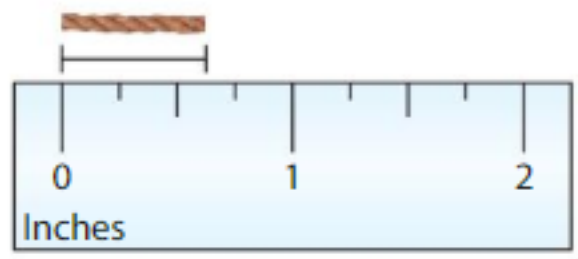


Example Measure the length of each string to the nearest half inch.

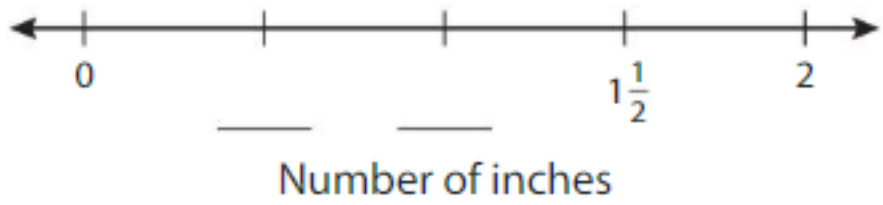
The string is $\frac{3}{2}$ inches long. You can also represent the length as 1 whole inch and one $\frac{1}{2}$ inch, or $1\frac{1}{2}$ inches.



The string is between $\frac{1}{2}$ inch and 1 inch long. The half-inch marking that is closest to the end of the string is $\frac{1}{2}$. So, the string is about $\frac{1}{2}$ inch long.



Example Measure the length of each line to the nearest half inch. Then record each length on the line plot.



Show and Grow

1. Measure the length of each line to the nearest half inch. Then record each length on the line plot above.

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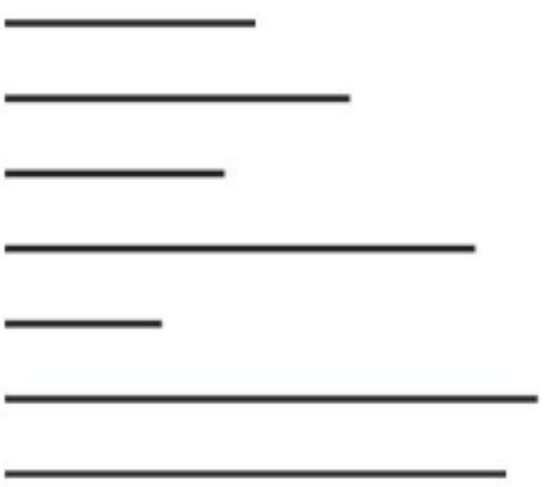
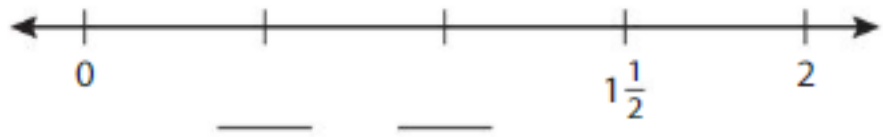
English Spanish

Name _____

Apply and Grow: Practice

2. Measure the length of each line to the nearest half inch. Record each length on the line plot.



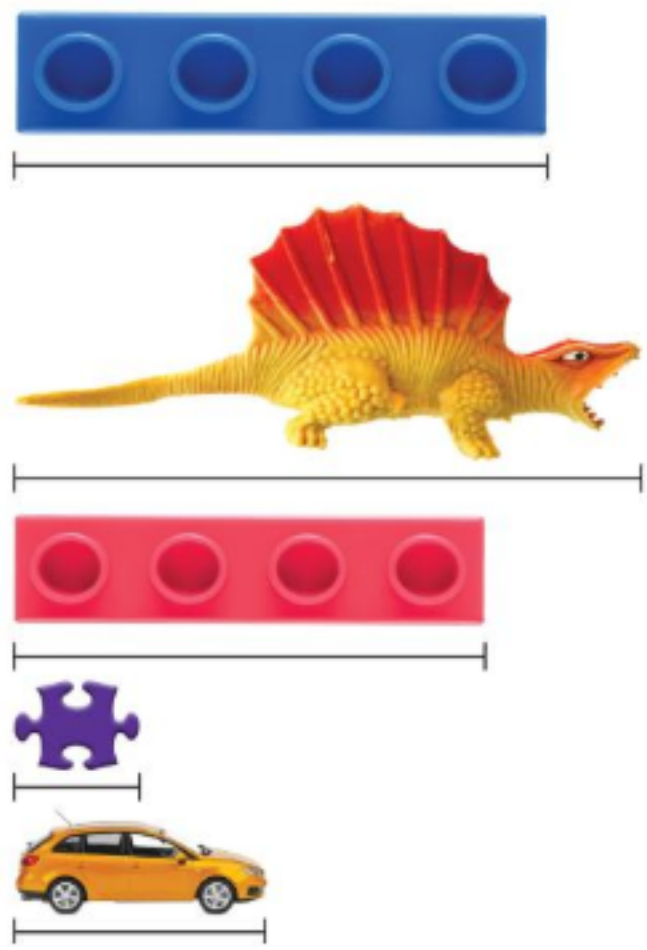


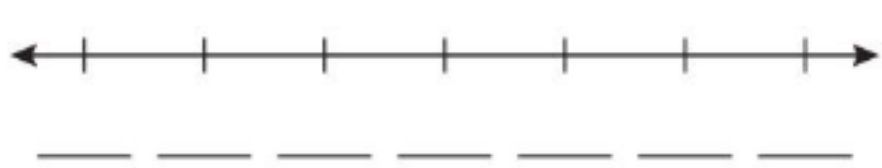
Number of inches

How might the scale change if the length of the line below is recorded on the line plot?

_____

3. Measure the length of each toy to the nearest half inch. Then record each length on the line plot.





Number of inches

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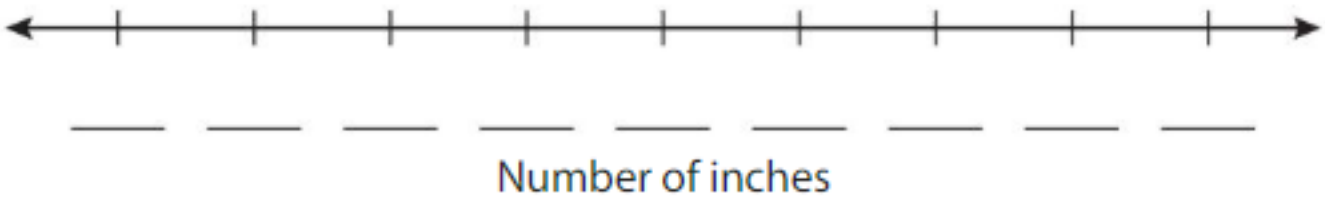
English Spanish

Think and Grow: Modeling Real Life

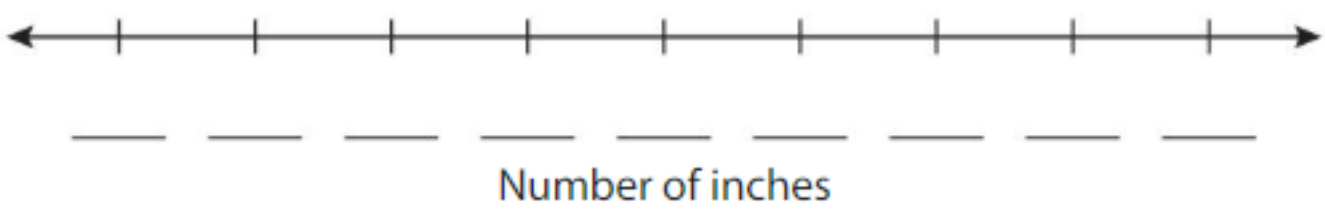
Measure the lengths of 10 crayons to the nearest half inch.
Record each length on the line plot.



Number of inches

Show and Grow

4. Measure the lengths of 10 shoes to the nearest half inch. Record each length on the line plot.



Number of inches

What is the length of the longest shoe? What is the length of the shortest shoe?

What length of shoe is the most common?

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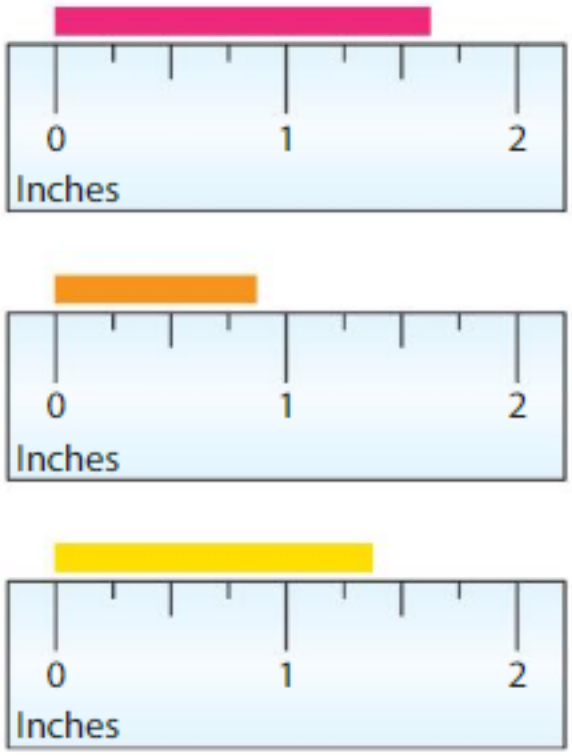
English Spanish

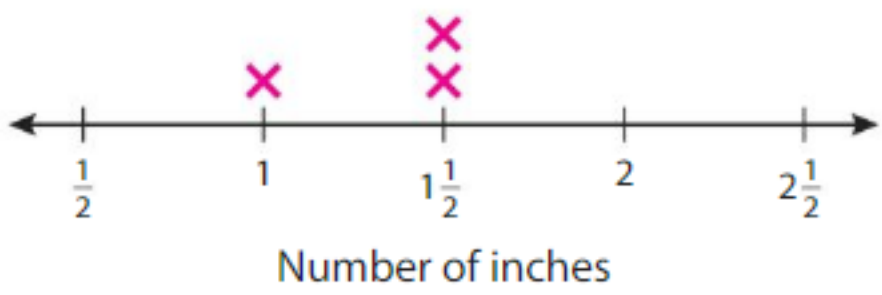
Name _____

Homework & Practice 14.6

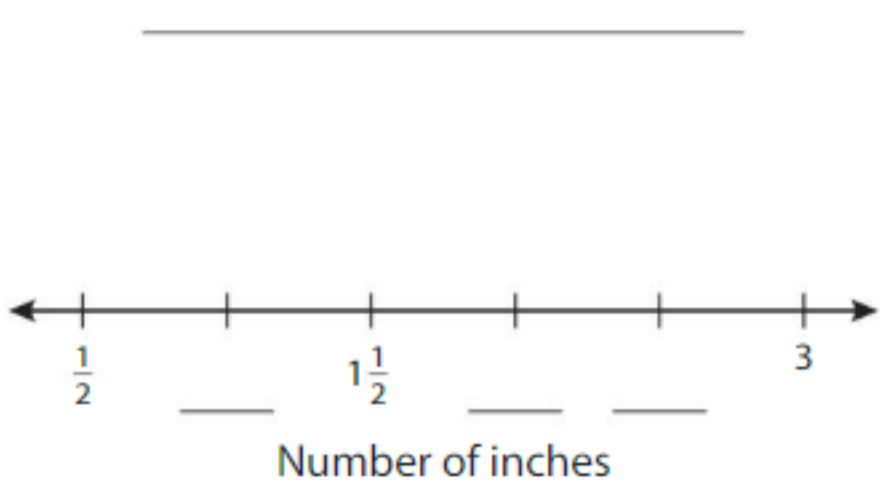
Learning Target: Measure objects to the nearest half inch and make line plots.

Example Measure the length of each ribbon to the nearest half inch. Then record each length on the line plot.





1. Measure the length of each pretzel stick to the nearest half inch. Record each length on the line plot.



How many pretzel sticks are 1 inch?

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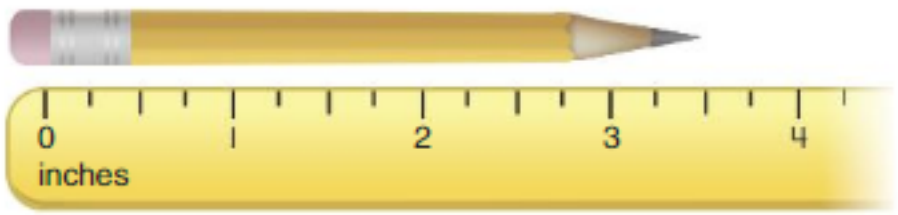
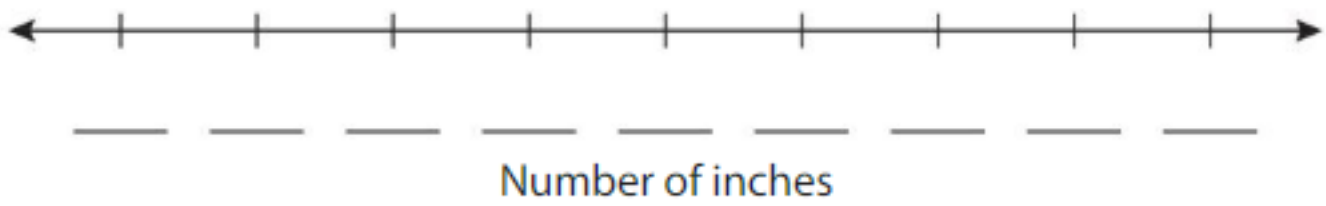
English Spanish

2. **YOU BE THE TEACHER** Descartes says the pencil is $3\frac{1}{2}$ inches long. Is he correct? Explain.



3. **Reasoning** Your friend's wrist measures $\frac{13}{2}$ inches around. His friendship bracelet is $6\frac{1}{2}$ inches. Will the bracelet fit around his wrist? Explain.

4. **Modeling Real Life** Measure the lengths of 10 plant leaves to the nearest half inch. Record each length on the line plot.



Number of inches

What is the length of the longest leaf?
What is the length of the shortest leaf?

What leaf length is the most common?

Review & Refresh

Find the product.

5. $5 \times 30 =$ _____

6. $9 \times 50 =$ _____

7. $6 \times 70 =$ _____

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English Spanish

Name _____

Measure Lengths: Quarter Inch 14.7

Learning Target: Measure objects to the nearest quarter inch and make line plots.

Success Criteria:

- I can measure the lengths of objects to the nearest quarter inch.
- I can record lengths on a line plot.

FLORIDA STANDARDS

MAFS.3.NF.1.2a
MAFS.3.NF.1.2b
MAFS.3.MD.2.4

Explore and Grow

How much longer is the green ribbon than the yellow ribbon? How do you know?

How much longer is the purple ribbon than the orange ribbon? How do you know?

MP **Reasoning** Measure the line to the nearest half inch and the nearest quarter inch. Which measurement is better? Why?

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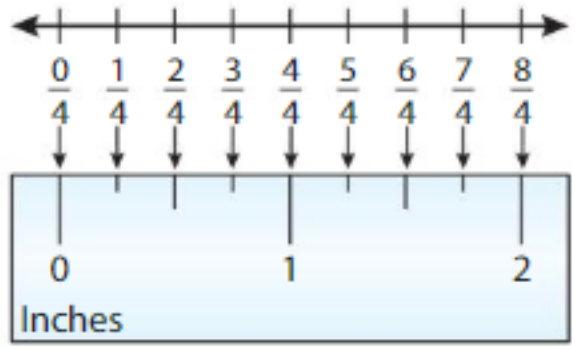
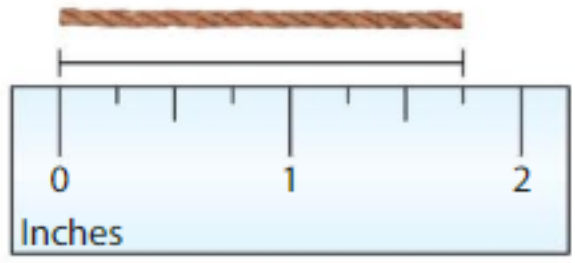
Think and Grow: Measure Lengths: Quarter Inch

You know how to use a ruler to measure lengths to the nearest half inch. You can also use a ruler to measure lengths to the nearest quarter-inch.

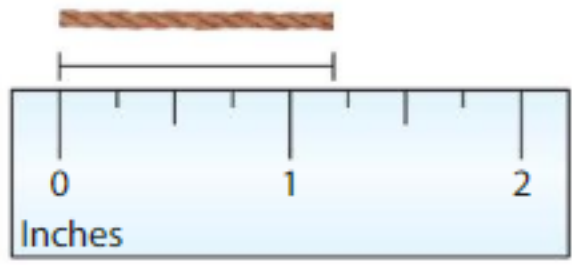


Example Measure the length of each string to the nearest quarter inch.

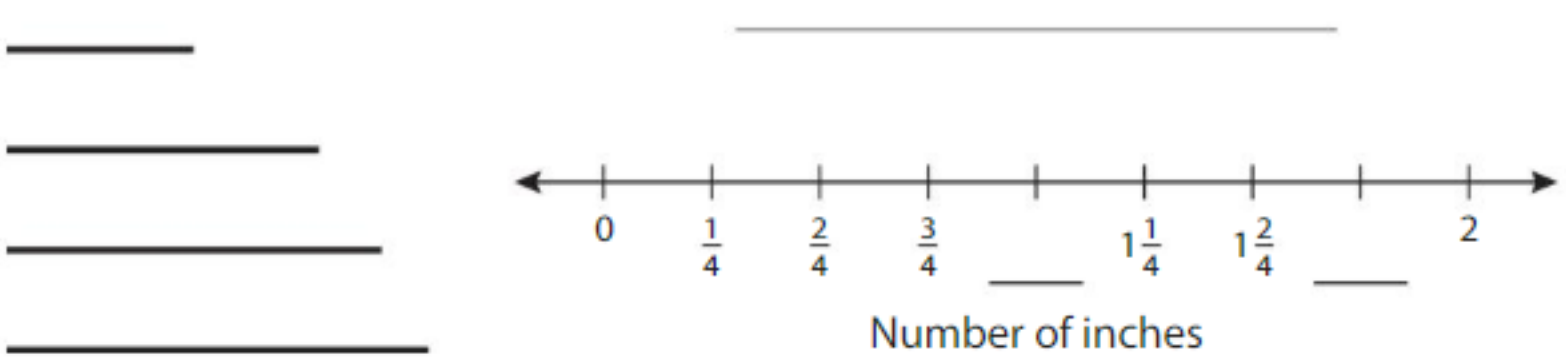
The string is $\frac{7}{4}$ inches long. You can also represent the length as 1 whole inch and three $\frac{1}{4}$ inches, or $1\frac{3}{4}$ inches.



The string is between 1 inch and $1\frac{1}{4}$ inches long. The quarter-inch marking that is closest to the end of the string is $1\frac{1}{4}$. So, the string is about $1\frac{1}{4}$ inches long.



Example Measure the length of each line to the nearest quarter inch. Then record each length on the line plot.



Show and Grow

1. Measure the length of each line to the nearest quarter inch. Then record each length on the line plot above.

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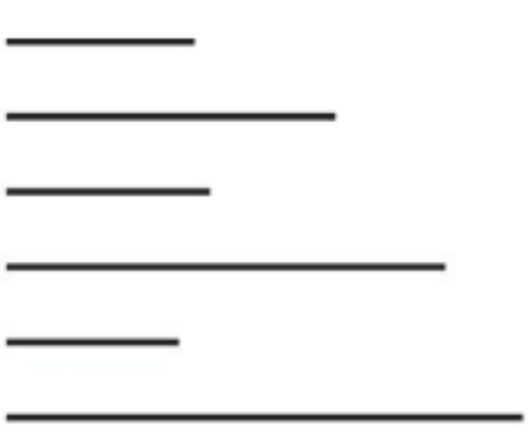
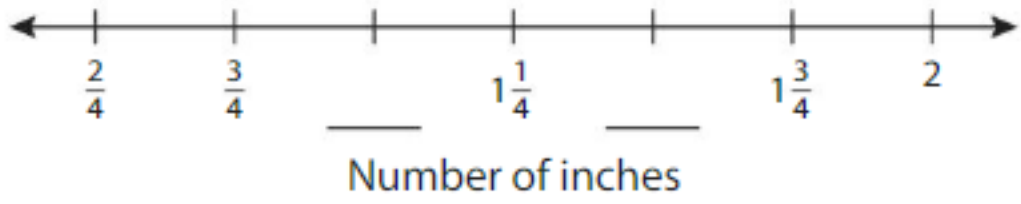
English Spanish

Name _____

Apply and Grow: Practice

2. Measure the length of each line to the nearest quarter inch. Record each length on the line plot.



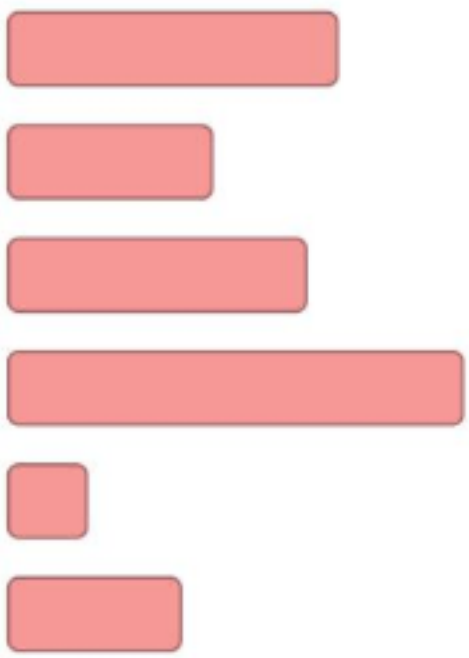


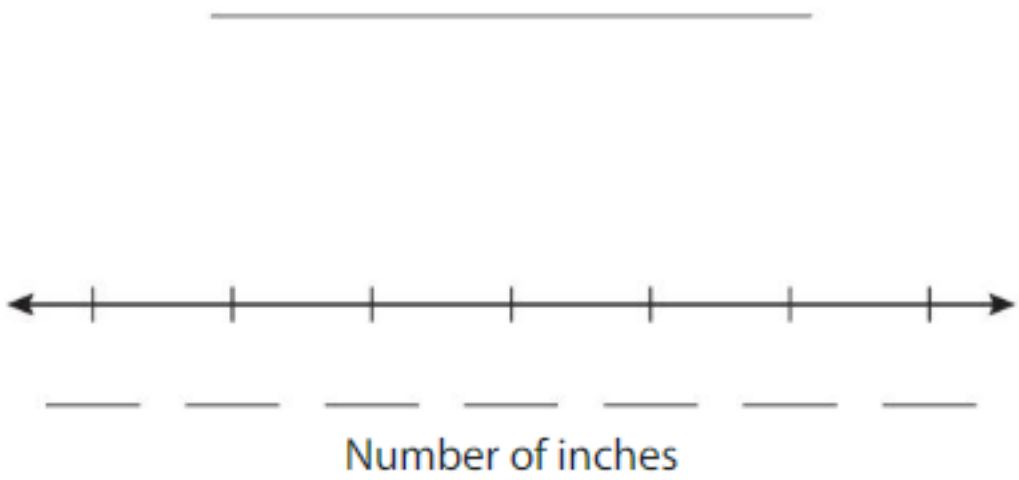
How might the scale change if the two lines below are recorded in the line plot?

_____

_____

3. Measure the length of each eraser to the nearest quarter inch. Then record each length on the line plot.





4. MP **Precision** Draw a line that measures $5\frac{3}{4}$ inches long.

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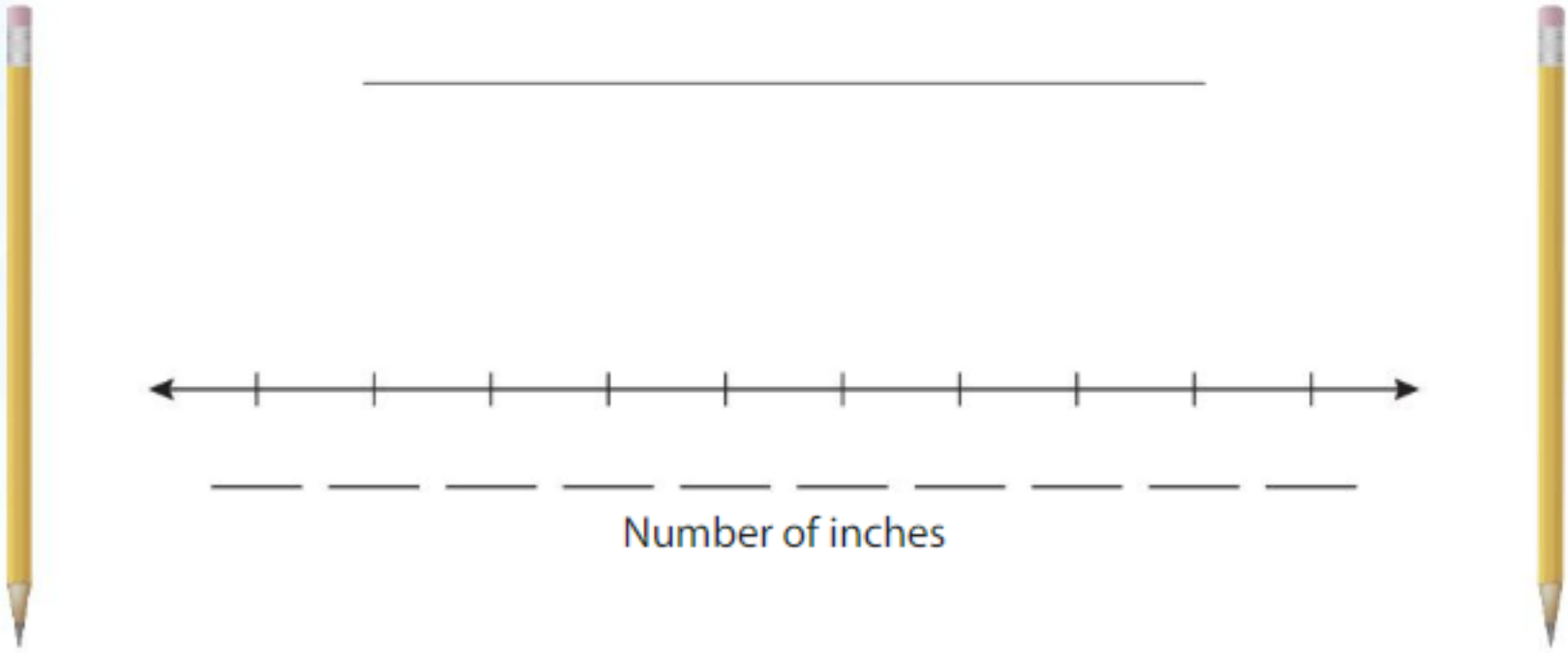
English Spanish

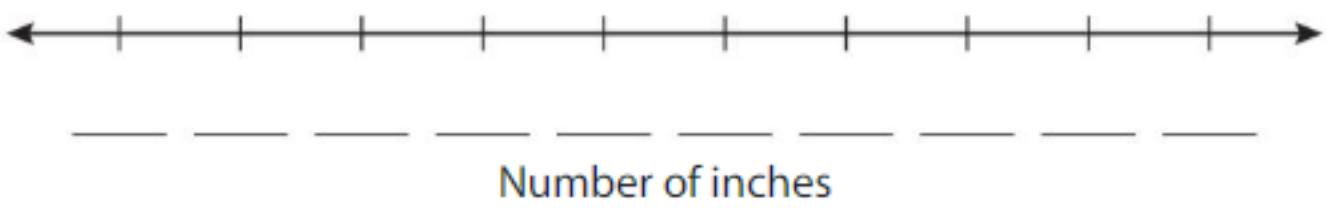
Think and Grow: Modeling Real Life

Measure the lengths of 10 pencils to the nearest quarter inch.
Record each length on the line plot.



Show and Grow

5. Measure the heights of 10 books to the nearest quarter inch. Record each length on the line plot.



Write and answer a question about your line plot.

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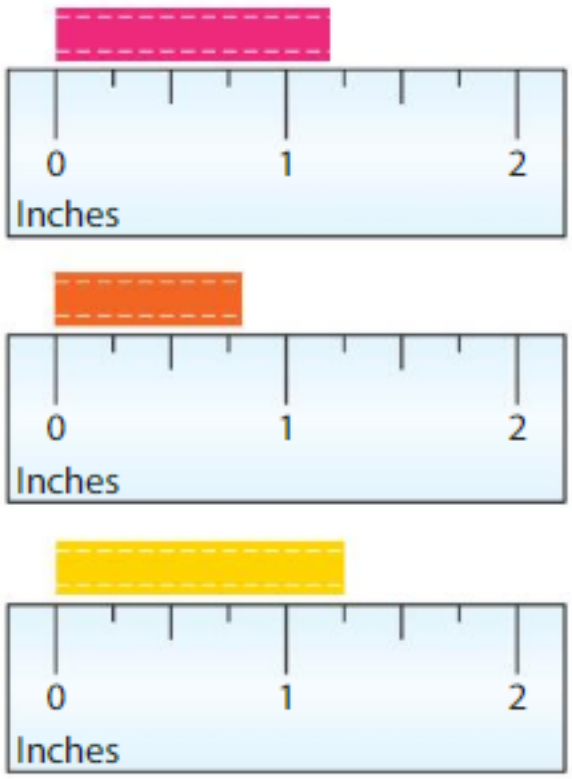
English Spanish

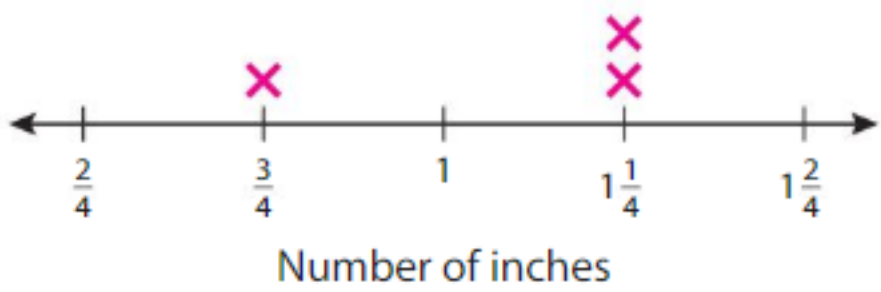
Name _____

Homework & Practice 14.7

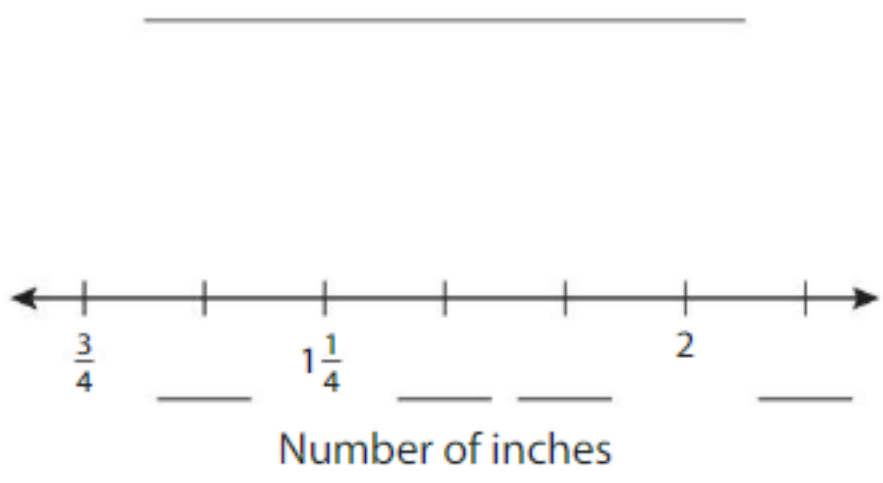
Learning Target: Measure objects to the nearest quarter inch and make line plots.

Example Measure the length of each ribbon to the nearest quarter inch. Then record each length on the line plot.





1. Measure the length of each celery stick to the nearest quarter inch. Record each length on the line plot.



Which celery stick length is the most common?

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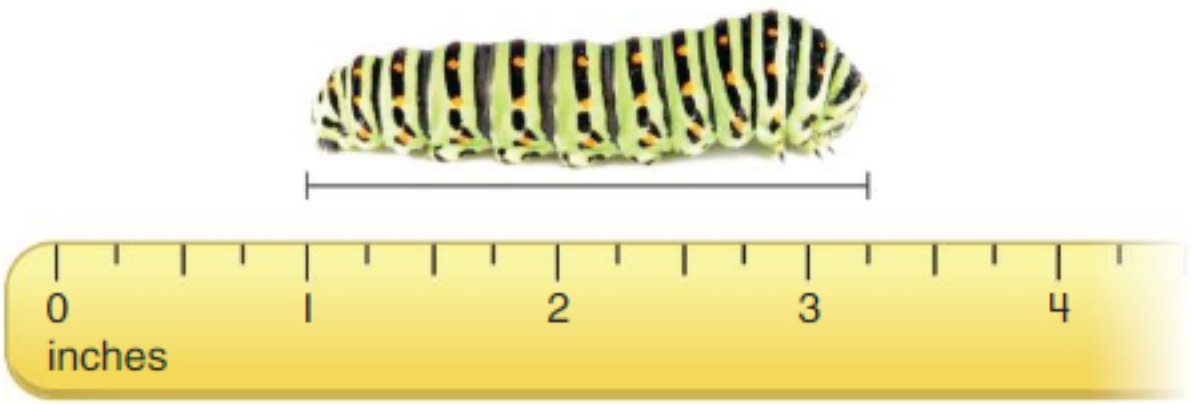
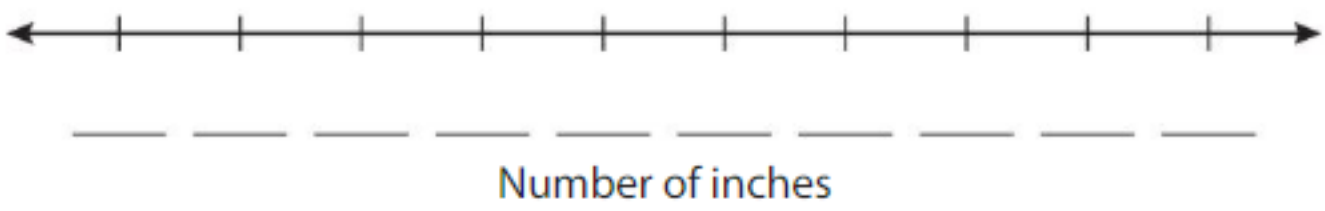
English Spanish

2. Which One Doesn't Belong? Which does *not* belong with the other three?

3. Precision Find the length of the caterpillar to the nearest quarter inch. Explain.



4. Modeling Real Life Measure the lengths of your 10 fingers to the nearest quarter inch. Record each length on the line plot.



Write and answer a question about your line plot.

Review & Refresh

What fraction of the whole is shaded?

5.

$\frac{\square}{\square}$ is shaded.

6.

$\frac{\square}{\square}$ is shaded.

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English Spanish

Name _____

Performance Task 14

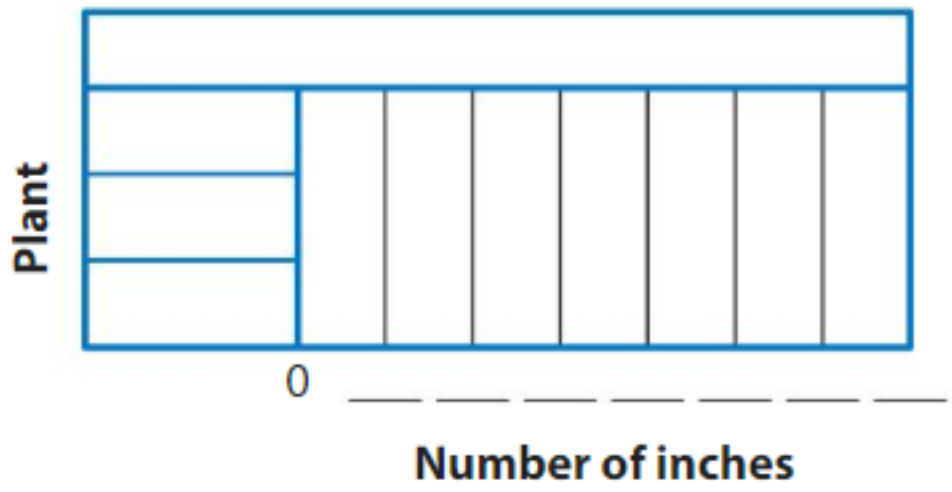
1. You plant 3 bamboo seeds during the first week. You measure and record the growth of your bamboo plants for the next 3 weeks.

Week 2	
Plant	**Growth**
A	3 in.
B	2 in.
C	4 in.

Week 3	
Plant	**Growth**
A	3 in.
B	3 in.
C	4 in.

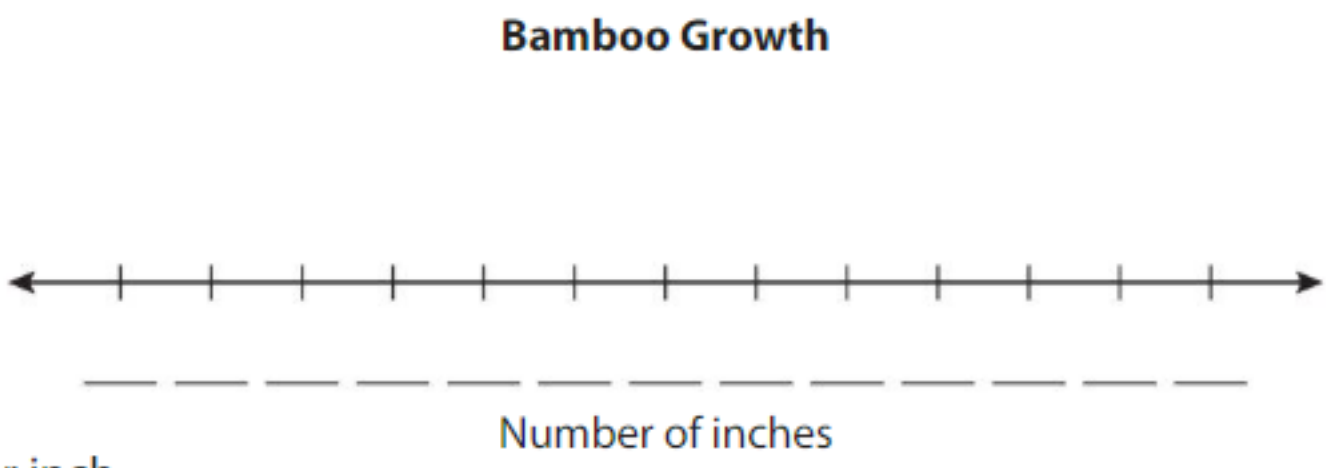
Week 4	
Plant	**Growth**
A	4 in.
B	3 in.
C	4 in.

a. Find the height of each plant after the fourth week. Make a bar graph of the plant heights.



b. Do you think any of the plants will be taller than 15 inches after 5 weeks? Explain.

2. a. Measure and record the height of each bamboo plant on Bamboo Growth to the nearest quarter inch.



b. Which height occurs the most?

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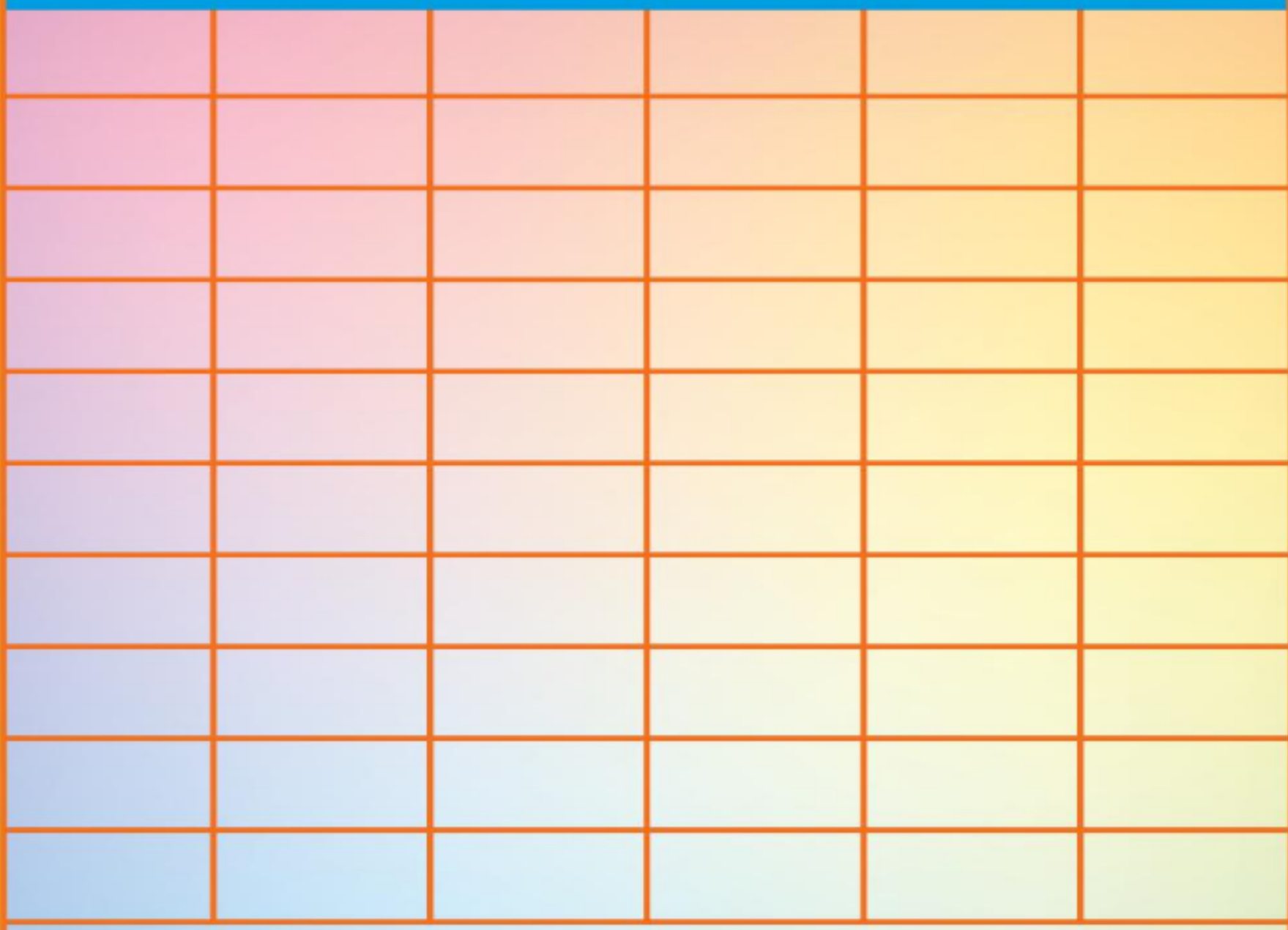
Roll and Graph

Directions:

1. Players take turns rolling a die.
2. Record each of your rolls on your line plot.
3. The first player to get 10 rolls of one number wins!

Die Rolls



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Name _____

Chapter Practice 14

14.1 Read and Interpret Picture Graphs

1. Use the graph to answer the questions.
How many tickets were sold in August?

How many more tickets were sold in July or August than in May, June, or September?

Amusement Park Ticket Sales	
May	Ticket Ticket
June	Ticket Ticket Ticket Tic
July	Ticket Ticket Ticket Ticket Ticket
August	Ticket Ticket Ticket Ticket Tic
September	Ticket Tic

Each Ticket = 20 tickets.

Which month had more ticket sales than June, but fewer ticket sales than July? How many tickets were sold this month?

14.2 Make Picture Graphs

2. You collect supplies for an animal shelter. You receive 4 collars, 20 tennis balls, 18 dog bones, and 12 cat toys. Complete the picture graph.

Each ◯ = _____ supplies.

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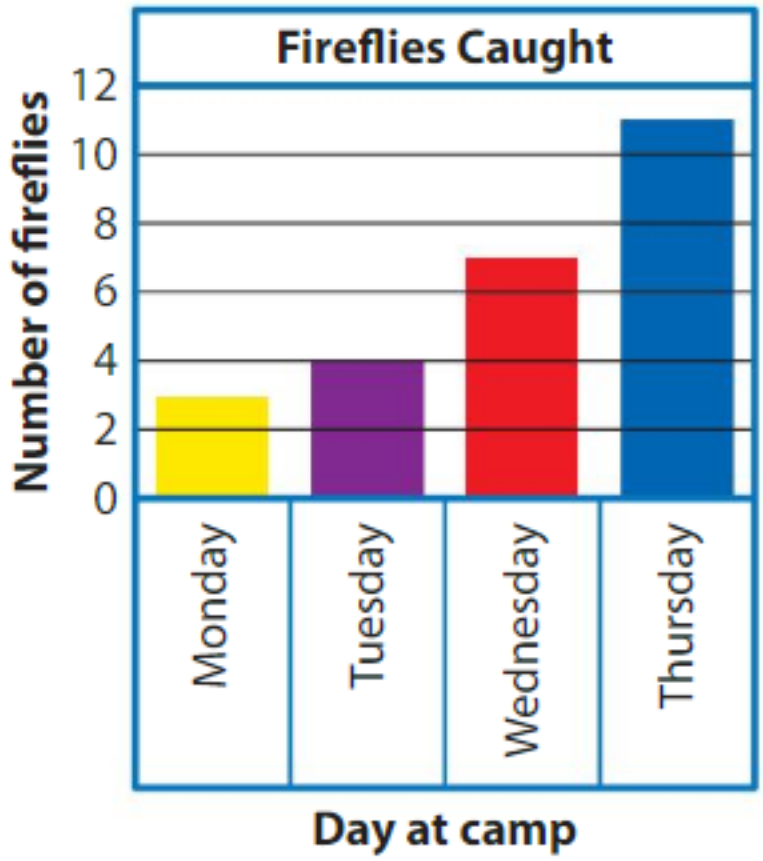
3. A zookeeper takes care of 30 animals. There are 6 monkeys, 12 flamingos, and 9 kangaroos. The rest of the animals are giraffes. Complete the picture graph.

Each ◯ = _____ animals.

14.3 Read and Interpret Bar Graphs

4. Use the graph to answer the questions.

How many more fireflies does your friend catch on Thursday than on Monday?



MP **Patterns** What do you notice about the number of fireflies caught from Monday to Thursday?

On which two days did your friend catch 10 fireflies combined?

You catch 5 fireflies on Monday, 4 fireflies on Tuesday, 8 fireflies on Wednesday, and 7 fireflies on Thursday. Who caught more fireflies at camp?

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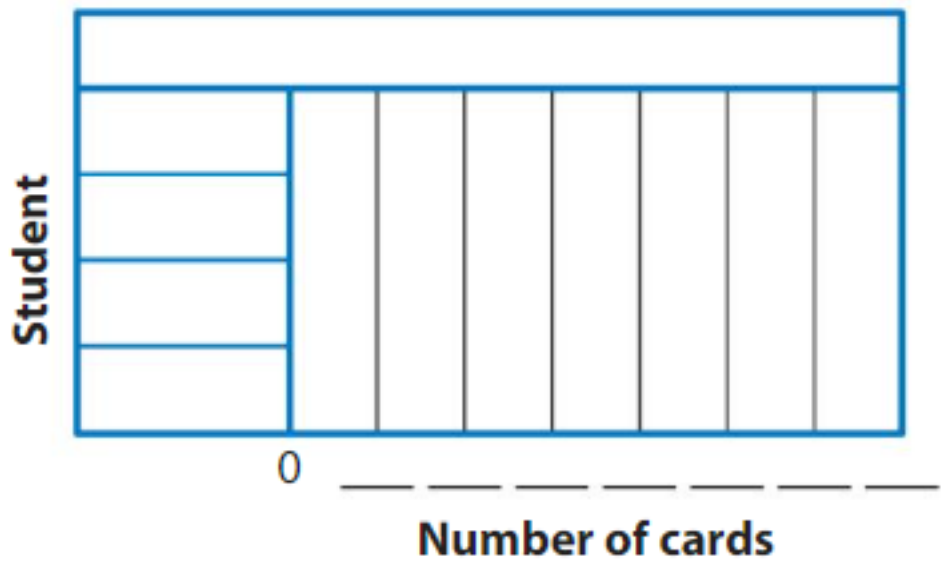
14.4 Make Bar Graphs

5. Use the frequency table to complete the bar graph.

Trading Cards	
Student A	30
Student B	15
Student C	10
Student D	15

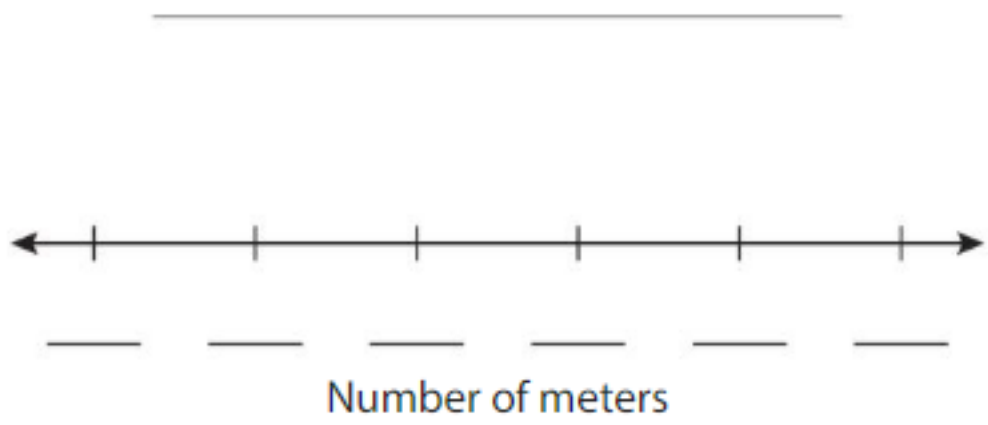


Another student, Student E, has 45 trading cards. How would the bar graph change?

Modeling Real Life Including the number of trading cards of Student E, order the numbers of cards from least to greatest.

14.5 Make Line Plots

6. Use the table to complete the line plot.



Tree Heights (meters)	
23	19
19	24
24	21
21	22
24	21
19	19

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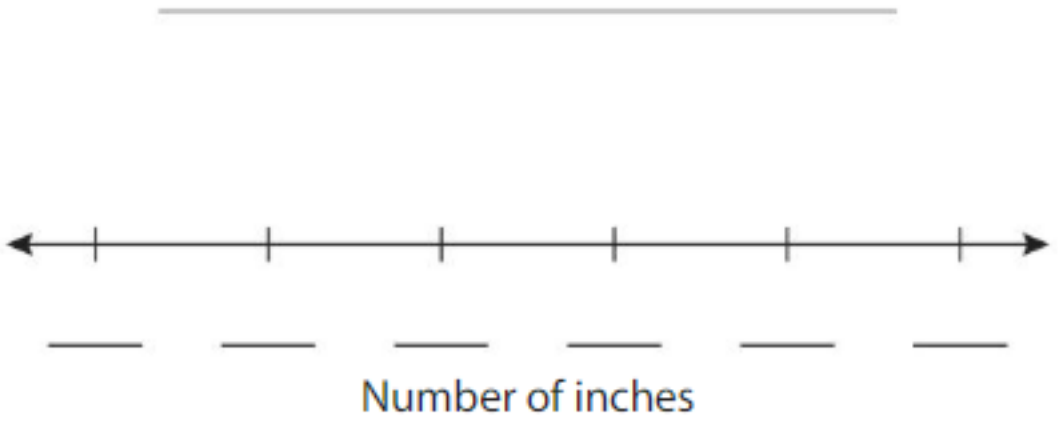
14.6 Measure Lengths: Half Inch

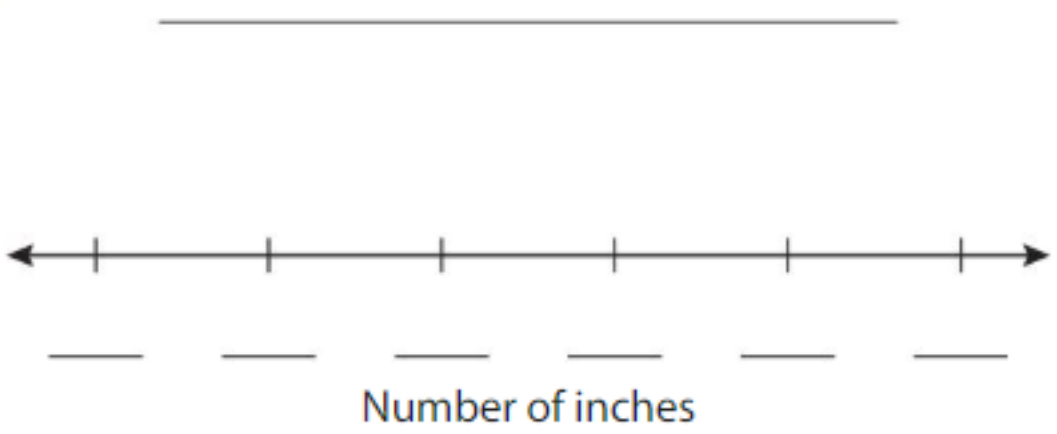
7. Measure the length of each snail trail from a snail race to the nearest half inch. Record each length on the line plot.



Modeling Real Life What is the length of the longest snail trail? What is the length of the shortest snail trail?

14.7 Measure Lengths: Quarter Inch

8. Measure the length of each feather to the nearest quarter inch. Then record each length on the line plot.



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15 Find Perimeter and Area

- Imagine you build a tree house. Where would you build it? When would you go to your tree house?
- How can you use math to determine the amount of wood needed to build a tree house? Why is it important to have precise measurements?

Chapter Learning Target:
Understand perimeter and area.

Chapter Success Criteria:
- I can identify the perimeter of a shape.
- I can describe the area of a shape.
- I can compare the area and perimeter of a shape.
- I can find the area and perimeter of a shape.

Name _____

15 Vocabulary

Review Words

area

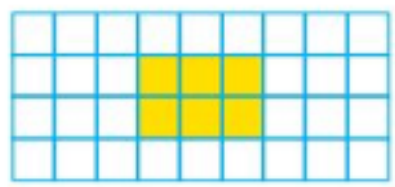
square unit

Organize It

Use the review words to complete the graphic organizer.

_____

The amount of surface a shape covers

 = 1 _____

Define It

What am I?

The distance around a figure

$4 \times 2 = M$ $2 \times 2 = R$ $6 \times 2 = E$

$3 \times 2 = I$ $8 \times 2 = T$ $5 \times 2 = P$

10	12	4	6	8	12	16	12	4

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Chapter 15 Vocabulary Cards

perimeter

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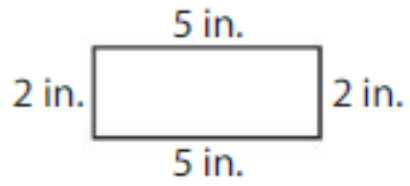
The distance around a figure



The perimeter of the rectangle is 14 inches.

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Understand Perimeter 15.1

Learning Target: Find perimeters of figures.

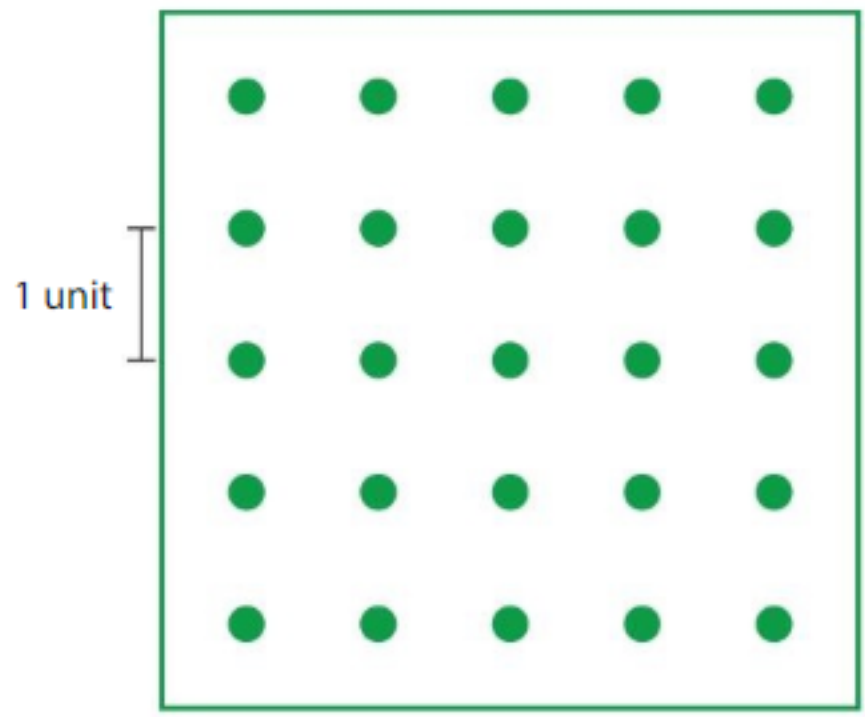
Success Criteria:

- I can count the number of units around a figure.
- I can tell the perimeter of a figure using standard units.
- I can use a ruler to find the perimeter of a figure.

FLORIDA STANDARDS
MAFS.3.MD.4.8

Explore and Grow

Model a rectangle on your geoboard. Draw the rectangle and label its side lengths. What is the distance around the rectangle?



_____ units

MP **Structure** Change the side lengths of the rectangle on your geoboard. What do you notice about the distance around your rectangle compared to the distance around the rectangle above? Explain.

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Think and Grow: Understand Perimeter

Perimeter is the distance around a figure. You can measure perimeter using standard units, such as inches, feet, centimeters, and meters.

Example Find the perimeter of the rectangle.

Choose a unit to begin counting. Count each unit around the rectangle.

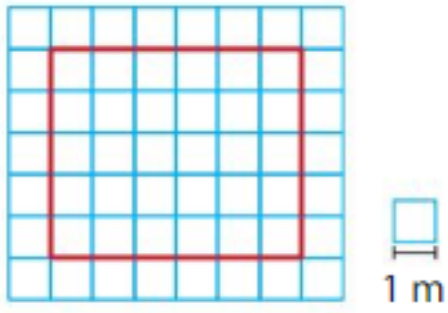
Each unit is _____. There are _____ units around the figure.

So, the perimeter is _____ inches.

Show and Grow

Find the perimeter of the figure.

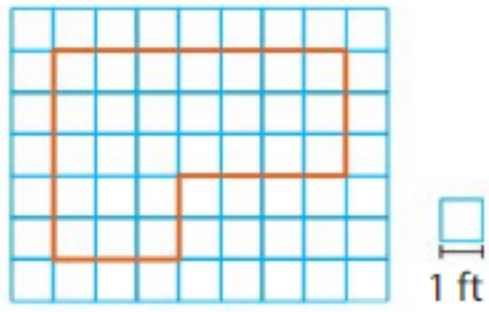
1.



There are _____ units around the figure.

So, the perimeter is _____ meters.

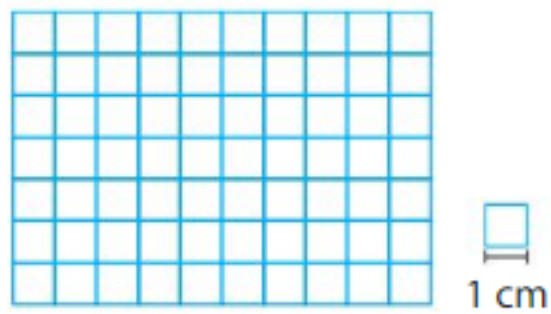
2.



There are _____ units around the figure.

So, the perimeter is _____ feet.

3. Draw a figure that has a perimeter of 16 centimeters.



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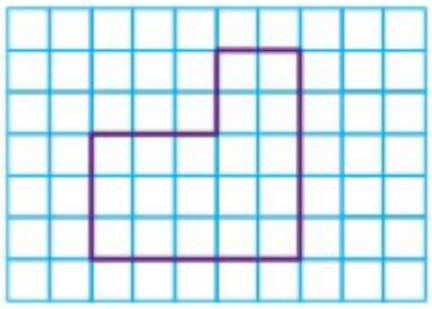
Name _____

Apply and Grow: Practice

Find the perimeter of the figure.

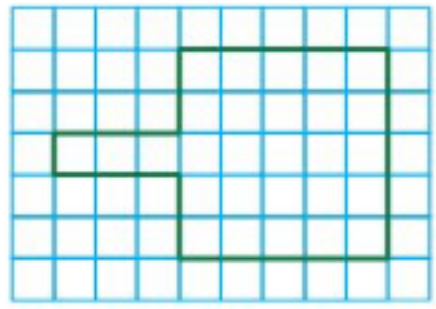
4.



There are _____ units around the figure.

So, the perimeter is _____.

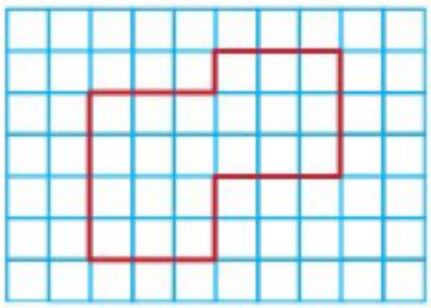
5.



There are _____ units around the figure.

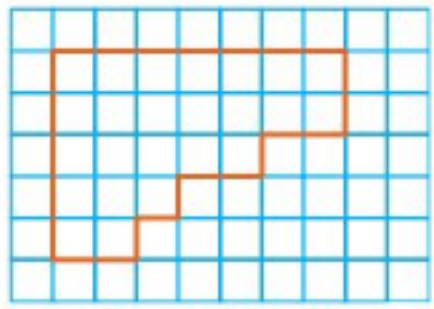
So, the perimeter is _____.

6.



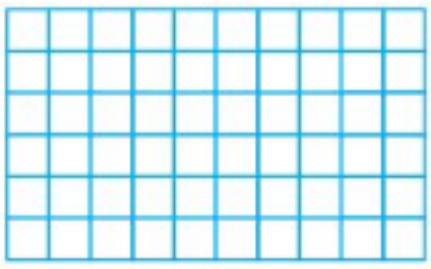
Perimeter = _____

7.



Perimeter = _____

8. Draw a figure that has a perimeter of 14 centimeters.

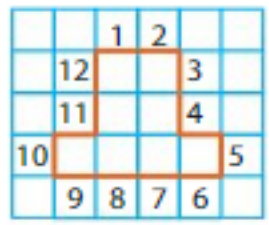


9. MP **Precision** Which is the most likely measurement for the perimeter of a photo?

20 inches 100 meters

5 centimeters 2 inches

10. **YOU BE THE TEACHER** Your friend counts the units around the figure and says the perimeter is 12 units. Is your friend correct? Explain.



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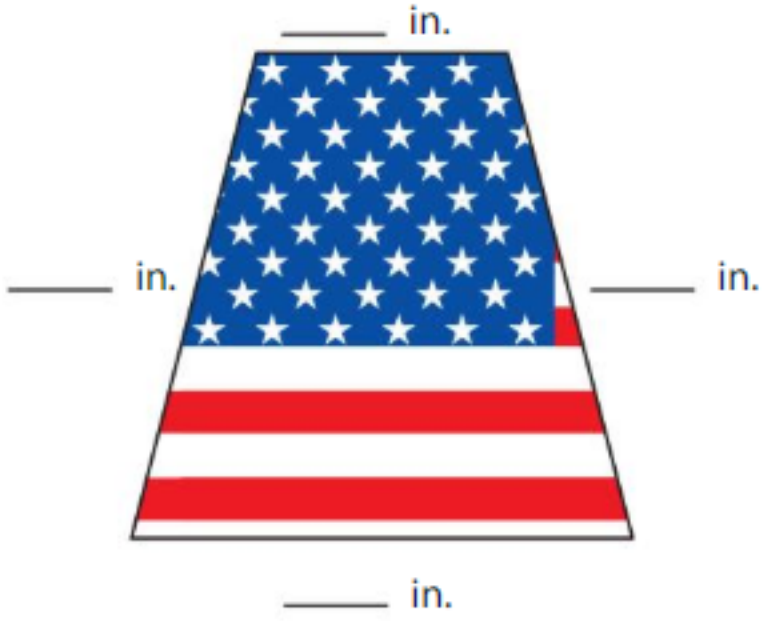
Think and Grow: Modeling Real Life

Use a centimeter ruler to find the perimeter of the bookmark.

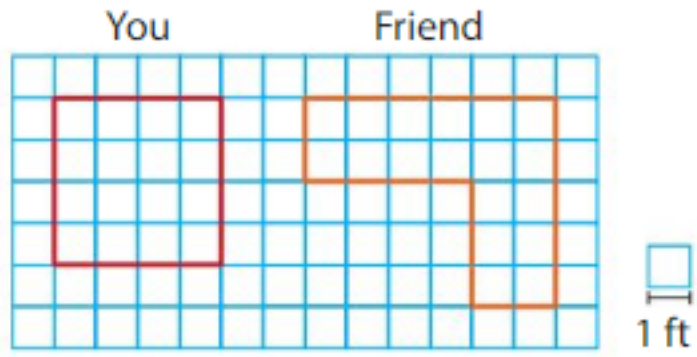
The perimeter is _____.

Show and Grow

11. Use an inch ruler to find the perimeter of the decal.



12. How much greater is the perimeter of your friend's desk than the perimeter of your desk?



13. **DIG DEEPER!** Explain how you might use a centimeter ruler and string to estimate the perimeter of the photo of the window.

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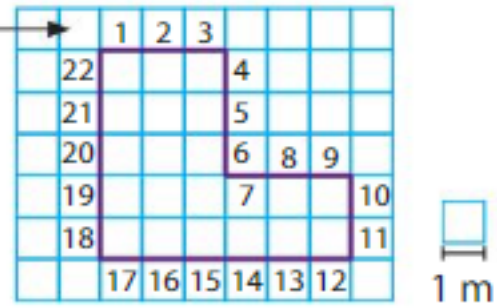
Name _____

Homework & Practice 15.1

Learning Target: Find perimeters of figures.

Example Find the perimeter of the figure.

Choose a unit to begin counting. Count each unit around the figure.



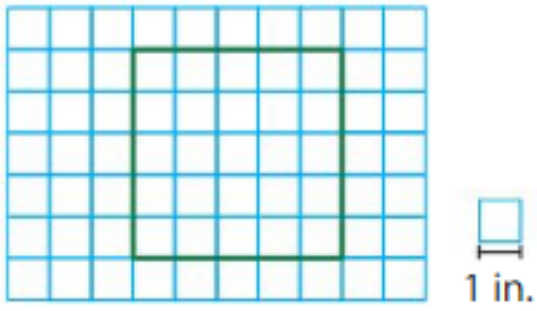
Each unit is 1 meter.

There are 22 units around the figure.

So, the perimeter is 22 meters.

Find the perimeter of the figure.

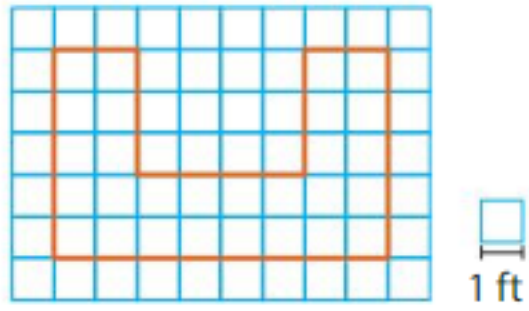
1.



There are _____ units around the figure.

So, the perimeter is _____ inches.

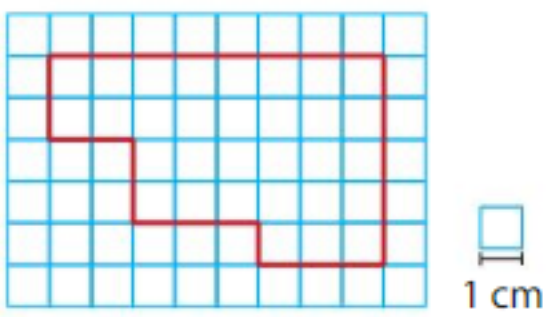
2.



There are _____ units around the figure.

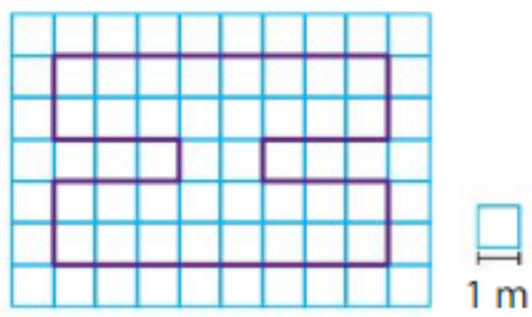
So, the perimeter is _____ feet.

3.



Perimeter = _____

4.



Perimeter = _____

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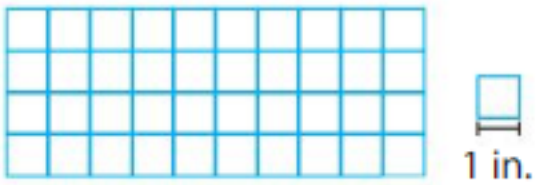
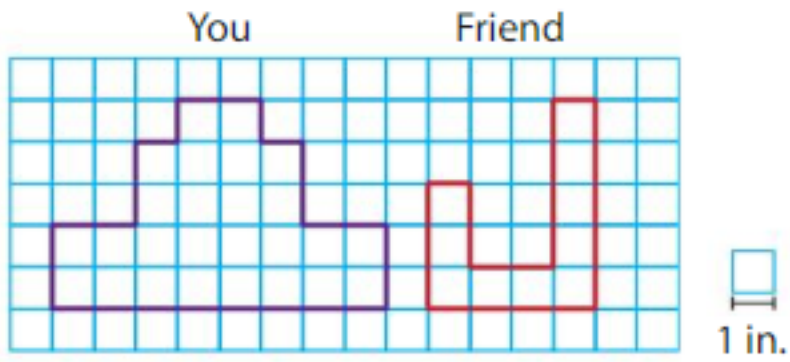
5. Draw a figure that has a perimeter of 18 inches.



6. MP **Reasoning** Which color represents the perimeter of the rectangle? What does the other color represent?

7. **Modeling Real Life** Use a centimeter ruler to find the perimeter of the library card.

8. **Modeling Real Life** How much greater is the perimeter of your piece of fabric than the perimeter of your friend's piece of fabric?



Review & Refresh

Write two equivalent fractions for the whole number.

9. $1 = \frac{\square}{4} = \frac{\square}{6}$

10. $4 = \frac{\square}{1} = \frac{\square}{2}$

11. $6 = \frac{\square}{4} = \frac{\square}{6}$

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Name _____

Find Perimeters of Polygons

15.2

Learning Target: Find perimeters of polygons.

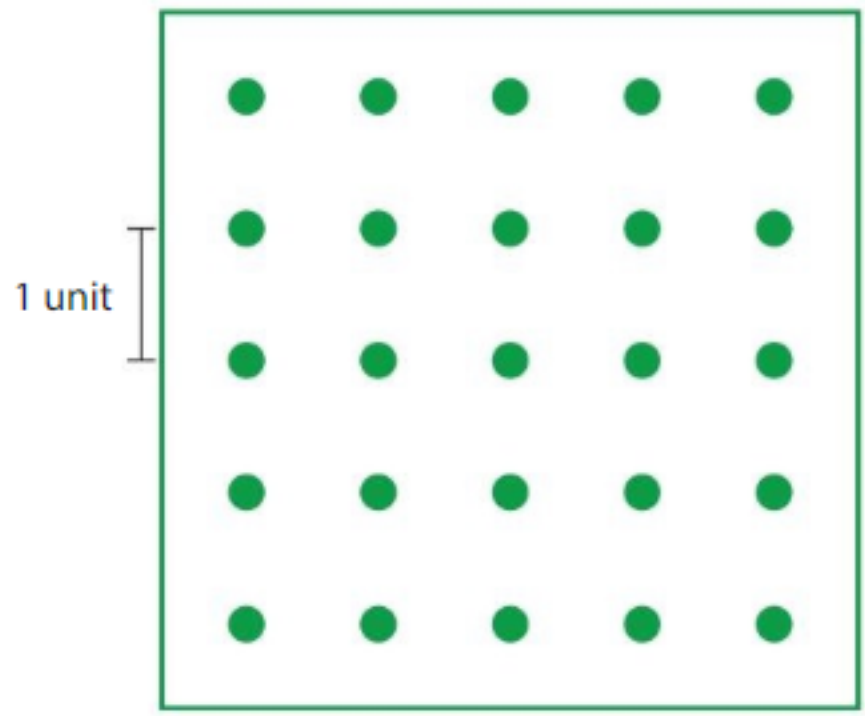
Success Criteria:

- I can add all the side lengths to find the perimeter of a polygon.
- I can multiply to find the perimeter of some polygons.

FLORIDA STANDARDS
MAFS.3.MD.4.8

Explore and Grow

Model a rectangle on your geoboard. Draw the rectangle and label its side lengths. Then find the perimeter in more than one way.



_____ units

MP **Critique the Reasoning of Others** Compare your methods of finding the perimeter to your partner's methods. Explain how they are alike or different.

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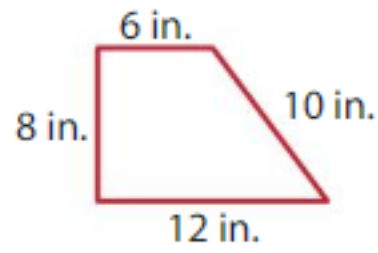
Think and Grow: Find Perimeter

Example Find the perimeter of the trapezoid.



You can find the perimeter of a figure by adding all of the side lengths.

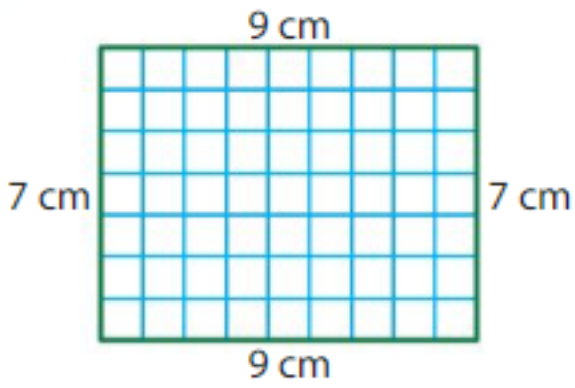
____ + ____ + ____ + ____ = P

____ = P

Write an equation. The letter P represents the unknown perimeter. Add the side lengths.

So, the perimeter is _____.

Example Find the perimeter of the rectangle.



Because a rectangle has two pairs of equal sides, you can also use multiplication to solve.

Remember, you can count each unit around the rectangle to find the perimeter.

One Way:

____ + ____ + ____ + ____ = P

____ = P

Another Way:

2 × ____ + 2 × ____ = P

____ + ____ = P

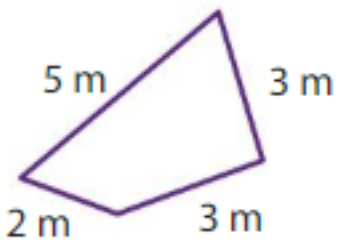
____ = P

So, the perimeter is _____.

Show and Grow

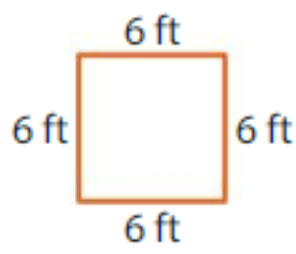
Find the perimeter of the polygon.

1.



The perimeter is _____.

2.



The perimeter is _____.

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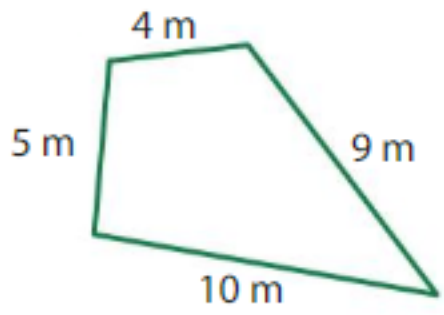
Name _____

Apply and Grow: Practice

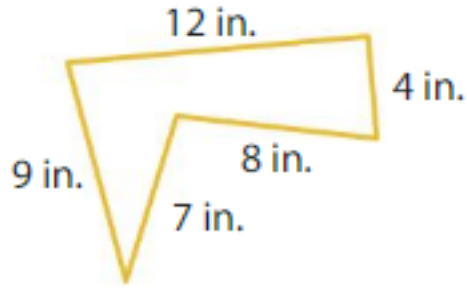
Find the perimeter of the polygon.

3.



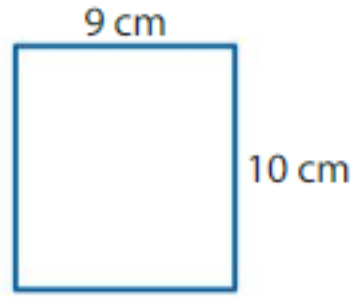
Perimeter = _____

4.



Perimeter = _____

5. Rectangle

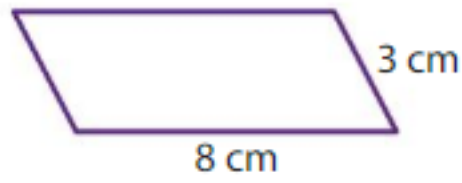


Perimeter = _____

6. Rhombus

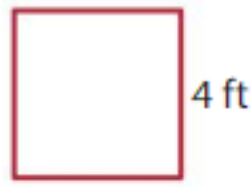
Perimeter = _____

7. Parallelogram



Perimeter = _____

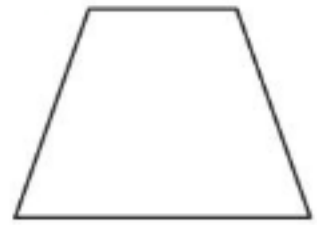
8. Square



Perimeter = _____

9. You build a pentagon out of wire for a social studies project. Each side is 8 centimeters long. What is the perimeter of the pentagon?

10. MP **Number Sense** The top length of the trapezoid is 4 feet. The bottom length is double the top. The left and right lengths are each 2 feet less than the bottom. Label the side lengths and find the perimeter of the trapezoid.



11. **Writing** Explain how finding the perimeter of a rectangle is different from finding its area.

12. DIG DEEPER! A rectangle has a perimeter of 12 feet. What could its side lengths be?

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English Spanish

Think and Grow: Modeling Real Life

The rectangular sign is 34 feet longer than it is wide. What is the perimeter of the sign?

Understand the problem:

Make a plan:

Solve:

The perimeter is _____.

Show and Grow

13. A city has a rectangular sidewalk in a park. The sidewalk is 4 feet wide and is 96 feet longer than it is wide. What is the perimeter of the sidewalk?

14. A team jogs around a rectangular field three times. The field is 80 yards long and 60 yards wide. How many yards does the team jog?

15. Each side of the tiles is 8 centimeters long. What is the sum of the perimeters?

You put the tiles together as shown. Is the perimeter of this new shape the same as the sum of the perimeters above? Explain.

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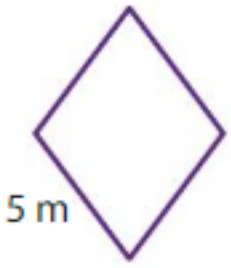
English Spanish

Name _____

Homework & Practice 15.2

Learning Target: Find perimeters of polygons.

Example Find the perimeter of the rhombus.



Because a rhombus has four equal sides, you can also use multiplication to solve.

The letter *P* represents the unknown perimeter.

One Way:

$5 + 5 + 5 + 5 = P$

$20 = P$

Another Way:

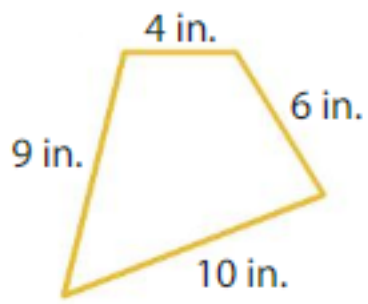
$4 \times 5 = P$

$20 = P$

So, the perimeter is 20 meters.

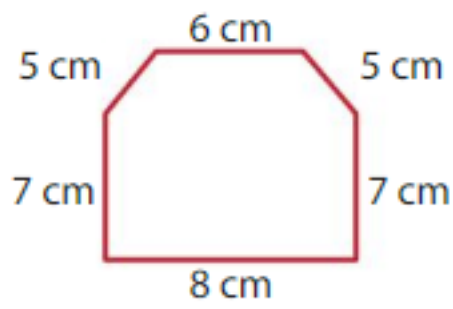
Find the perimeter of the polygon.

1.



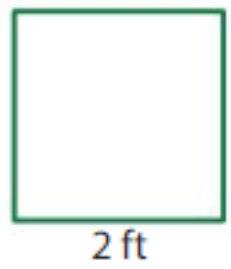
Perimeter = _____

2.



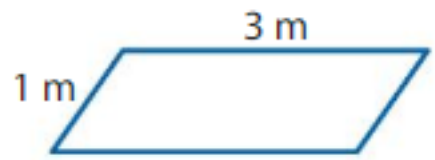
Perimeter = _____

3. Square



Perimeter = _____

4. Parallelogram

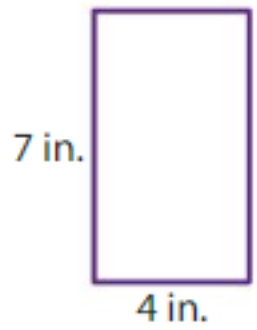


Perimeter = _____

5. Rhombus

Perimeter = _____

6. Rectangle



Perimeter = _____

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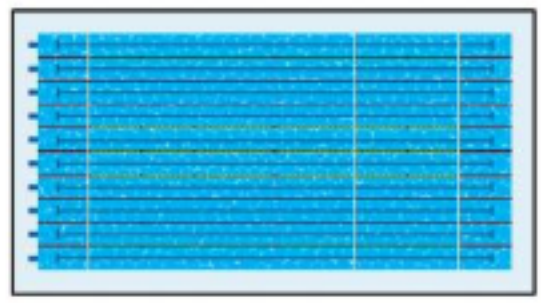
English Spanish

7. Each side of a triangle is 5 centimeters long. What is the perimeter of the triangle?

8. **YOU BE THE TEACHER** Descartes says that a square will always have a greater perimeter than a triangle because it has more sides. Is he correct? Explain.

9. **Structure** Draw a pentagon and label its sides so that it has the same perimeter as the rectangle.

10. **Modeling Real Life** An Olympic swimming pool is 82 feet longer than it is wide. What is the perimeter of the swimming pool?



11. **Modeling Real Life** You put painter's tape around two rectangular windows. The windows are each 52 inches long and 28 inches wide. How much painter's tape do you need?

Review & Refresh

Find the sum.

12.
$$\begin{array}{r} 590 \\ +\ 147 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 636 \\ +\ 258 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 476 \\ +\ 329 \\ \hline \end{array}$$

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English Spanish

Name _____

Find Unknown Side Lengths 15.3

Learning Target: Use perimeter to find the unknown side lengths of a polygon.

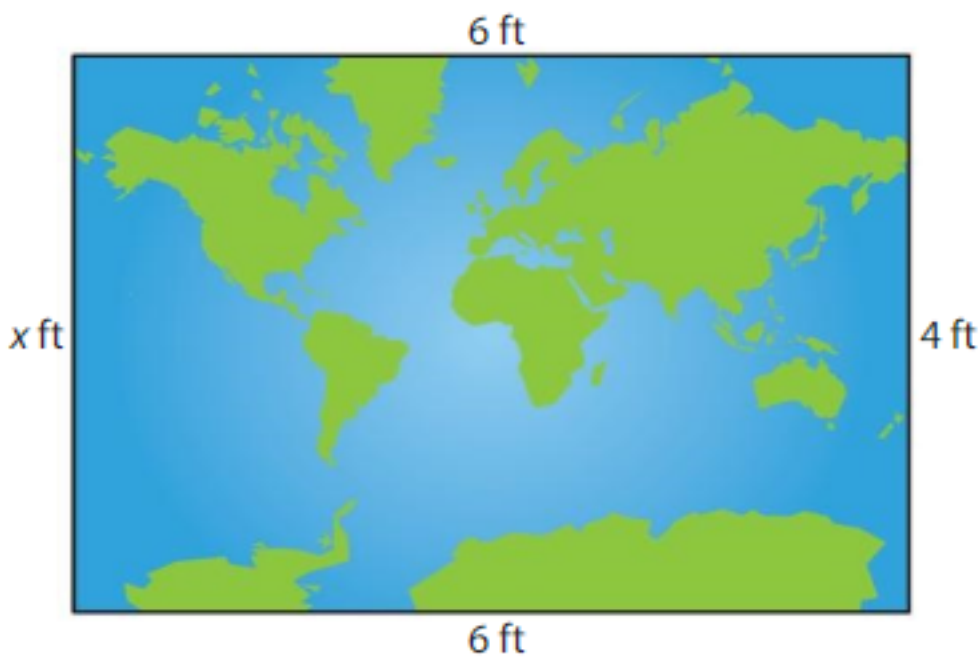
Success Criteria:

- I can use perimeter to find an unknown side length.
- I can use multiplication and the perimeter to find the unknown side length when all sides are equal.

FLORIDA STANDARDS
MAFS.3.MD.4.8

Explore and Grow

You have a map with the three side lengths shown. The perimeter of the map is 20 feet. Describe how you can find the fourth side length of your map without measuring.



MP **Repeated Reasoning** How is finding the unknown side length of a square different from finding the unknown side length of a rectangle?

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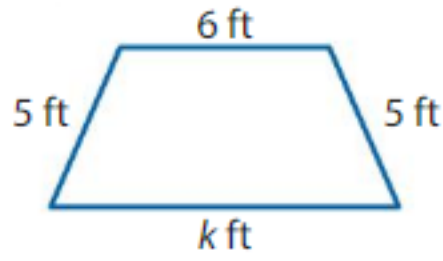
English Spanish

Think and Grow: Find Unknown Side Lengths

Example The perimeter of the trapezoid is 26 feet. Find the unknown side length.



$k +$ _____ $+$ _____ $+$ _____ $= 26$ Write an equation for the perimeter.

$k + 16 = 26$ Add the known side lengths.

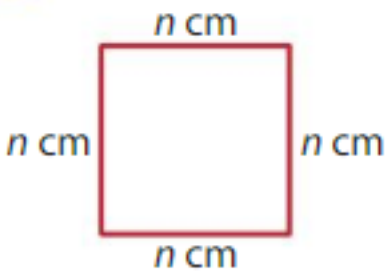
_____ $+ 16 = 26$ What number plus 16 equals 26?

So, $k =$ _____.

The unknown side length is _____.

Because the square has 4 equal sides, use a multiplication equation to find each unknown side length.

Example The perimeter of the square is 32 centimeters. Find the length of each side of the square.



$4 \times n = 32$ Write an equation for the perimeter.

$4 \times$ _____ $= 32$ 4 times what number equals 32?

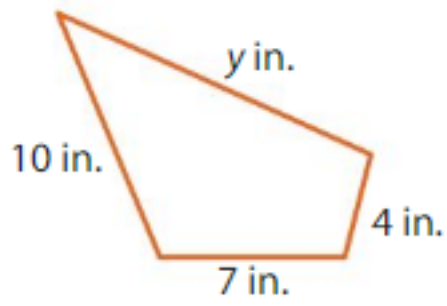
So, $n =$ _____.

So, the length of each side is _____.

Show and Grow

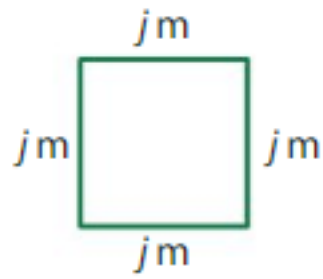
Find the unknown side length.

1. Perimeter = 34 inches



$y =$ _____

2. Perimeter = 20 meters



$j =$ _____

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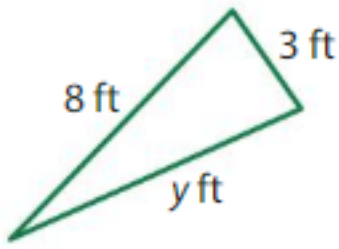
English Spanish

Name _____

Apply and Grow: Practice

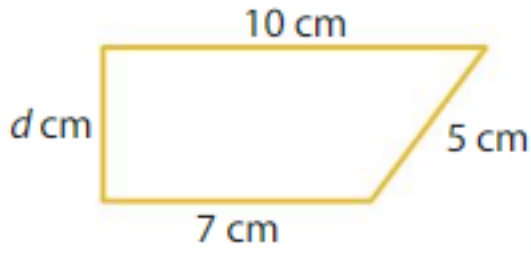
Find the unknown side length.

3. Perimeter = 19 feet



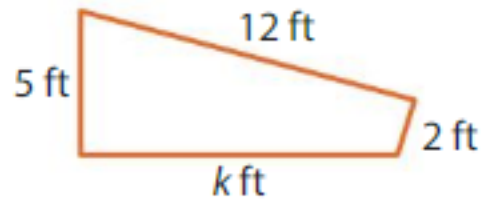
$y =$ _____

4. Perimeter = 26 centimeters



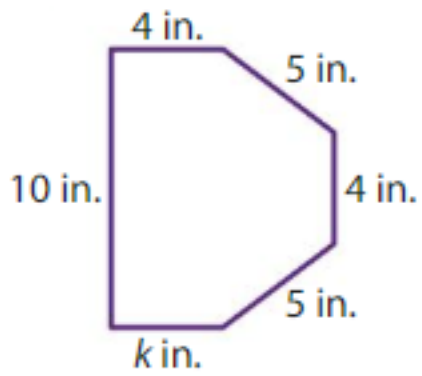
$d =$ _____

5. Perimeter = 30 feet



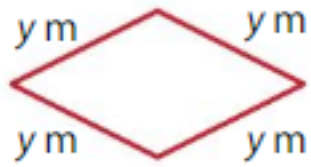
$k =$ _____

6. Perimeter = 32 inches



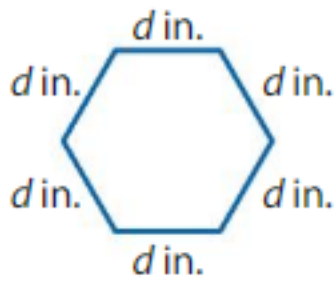
$k =$ _____

7. Perimeter = 8 meters



$y =$ _____

8. Perimeter = 48 inches



$d =$ _____

9. MP **Number Sense** A rectangle has a perimeter of 30 centimeters. The left side is 7 centimeters long. What is the length of the top side?

10. **Writing** A triangle has three equal sides and a perimeter of 21 meters. Explain how to use division to find the side lengths.

11. DIG DEEPER! Newton draws and labels the square and rectangle below. The perimeter of the combined shape is 36 feet. Find the unknown side length.

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English Spanish

Think and Grow: Modeling Real Life

The perimeter of the rectangular vegetable garden is 30 meters. What are the lengths of the other three sides?

Understand the problem:

Make a plan:

Solve:

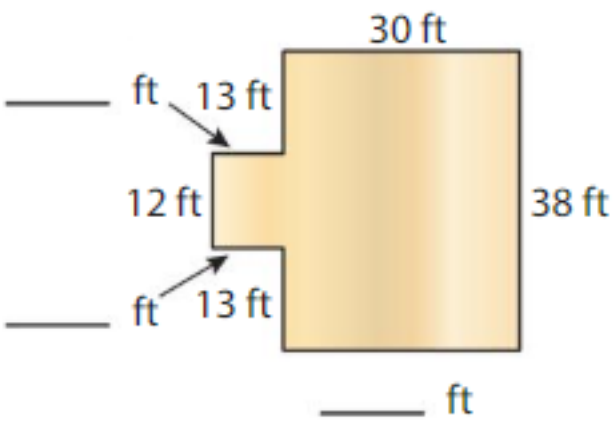
The lengths of the other three sides are

_____, _____, and _____.

Show and Grow

12. The perimeter of the rectangular zoo enclosure is 34 meters. What are the lengths of the other three sides?

13. The floor of an apartment is made of two rectangles. The perimeter is 154 feet. What are the lengths of the other three sides?



14. **DIG DEEPER!** You want to make a flower bed in the shape of a pentagon. Two sides of the flower bed are each 7 inches long, and two sides are each 16 inches long. The perimeter is 57 inches. Sketch the flower bed and label all of the side lengths.

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English Spanish

Name _____

Homework & Practice 15.3

Learning Target: Use perimeter to find the unknown side lengths of a polygon.

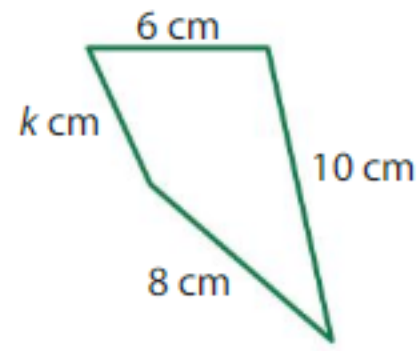
Example The perimeter of the quadrilateral is 29 centimeters. Find the unknown side length.

$k + \underline{6} + \underline{10} + \underline{8} = 29$

$k + 24 = 29$

$\underline{5} + 24 = 29$

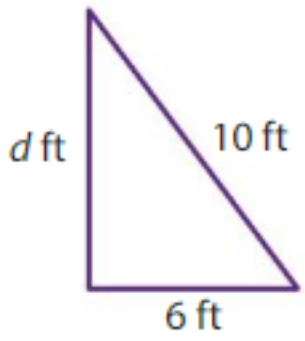
So, $k = \underline{5}$.



The unknown side length is 5 centimeters.

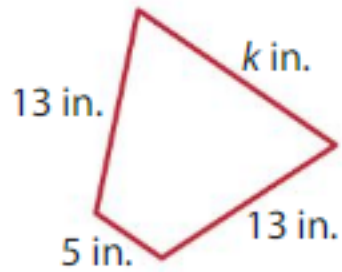
Find the unknown side length.

1. Perimeter = 24 feet



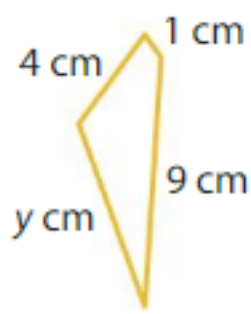
$d =$ _____

2. Perimeter = 46 inches



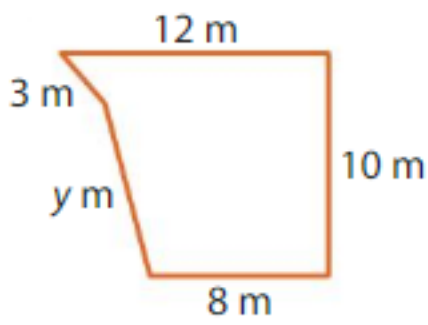
$k =$ _____

3. Perimeter = 21 centimeters



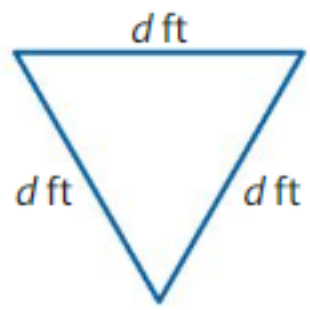
$y =$ _____

4. Perimeter = 41 meters



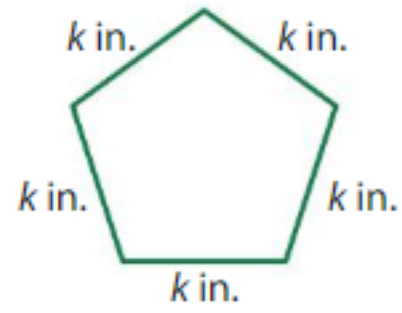
$y =$ _____

5. Perimeter = 12 feet



$d =$ _____

6. Perimeter = 50 inches



$k =$ _____

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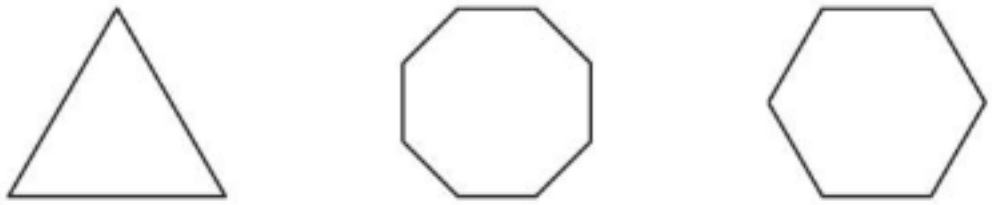
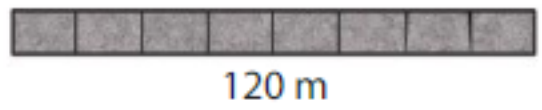
English Spanish

7. **DIG DEEPER!** Each polygon has equal side lengths that are whole numbers. Which polygon could have a perimeter of 16 centimeters? Explain.

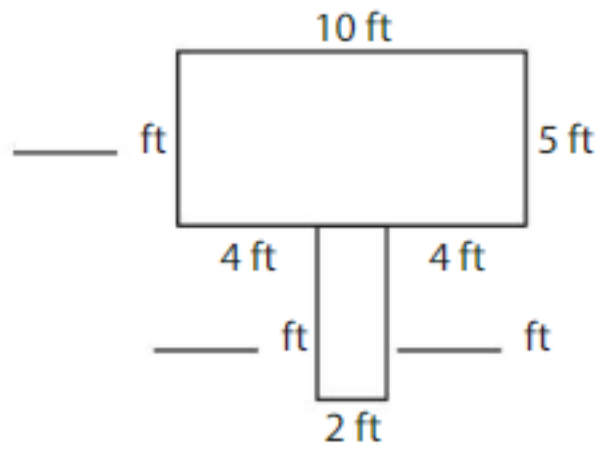


8. **Number Sense** The area of a square is 25 square inches. What is its perimeter?

9. **Modeling Real Life** The perimeter of the rectangular sidewalk is 260 meters. What are the lengths of the other three sides?



10. **Modeling Real Life** Two rectangular tables are pushed together. The perimeter is 40 feet. What are the lengths of the other three sides?



Review & Refresh

Write the time. Write another way to say the time.

11.

12.

13.

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English Spanish

Name _____

Same Perimeter, Different Areas

15.4

Learning Target: Use area to compare rectangles with the same perimeter.

Success Criteria:

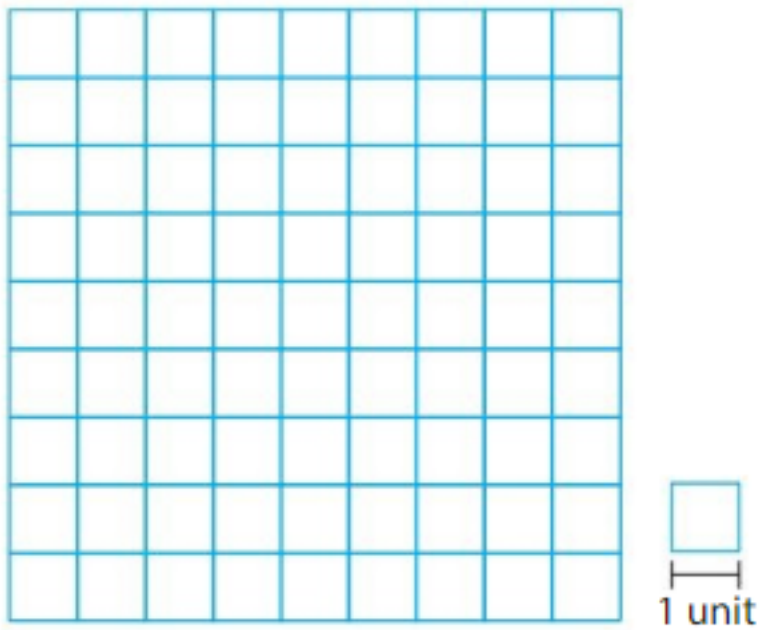
- I can find the perimeter and area of a given rectangle.
- I can draw a rectangle with the same perimeter as a given rectangle.
- I can compare the areas of the rectangles.

FLORIDA STANDARDS

MAFS.3.MD.3.5a
MAFS.3.MD.3.5b
MAFS.3.MD.3.6
MAFS.3.MD.4.8

Explore and Grow

Use color tiles to create two different rectangles that each have a perimeter of 16 units. Then draw your rectangles and label their dimensions. Do the rectangles have the same area? Explain how you know.



MP **Repeated Reasoning** Draw another rectangle that has the same perimeter but different dimensions. Compare the area of the new rectangle to the rectangles above. What do you notice?

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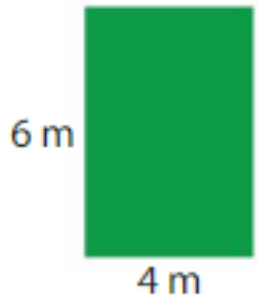
English Spanish

Think and Grow: Same Perimeter, Different Areas

Example Find the perimeter and the area of Rectangle A. Draw a different rectangle that has the same perimeter. Which rectangle has the greater area?

Rectangle A

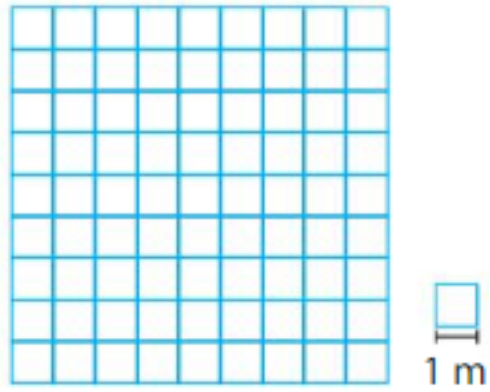


Perimeter = 4 + 6 + 4 + 6

= _____

Area = 6 × 4 = _____

Rectangle B



Perimeter = _____ + _____ + _____ + _____

= _____

Area = _____ × _____ = _____

Rectangle _____ has the greater area.

Show and Grow

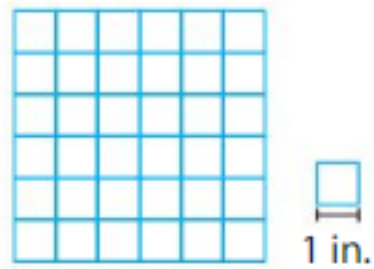
1. Find the perimeter and area of Rectangle A. Draw a different rectangle that has the same perimeter. Which rectangle has the greater area?

Rectangle A

Perimeter = _____

Area = _____

Rectangle B



Perimeter = _____

Area = _____

Rectangle _____ has the greater area.

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English Spanish

Name _____

Apply and Grow: Practice

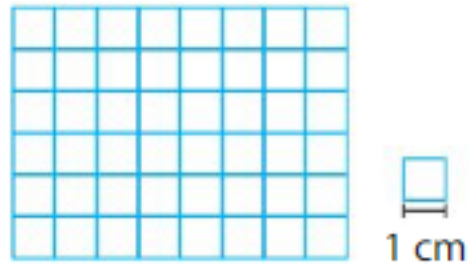
Find the perimeter and area of Rectangle A. Draw a different rectangle that has the same perimeter. Which rectangle has the greater area?

2. Rectangle A

Perimeter = _____

Area = _____

Rectangle B

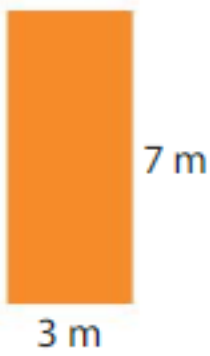


Perimeter = _____

Area = _____

Rectangle _____ has the greater area.

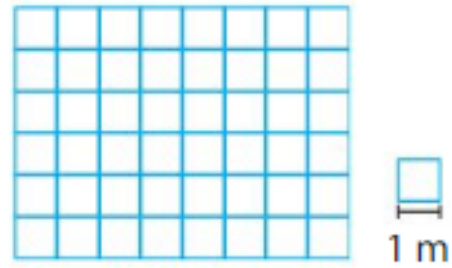
3. Rectangle A



Perimeter = _____

Area = _____

Rectangle B

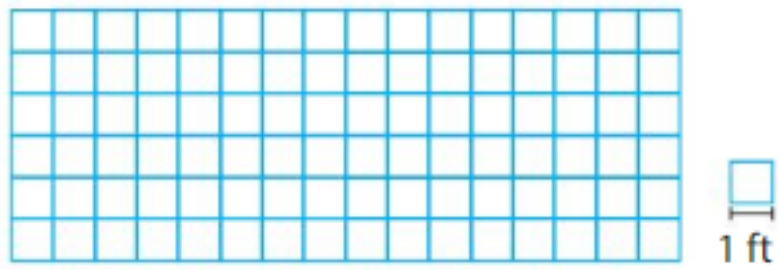


Perimeter = _____

Area = _____

Rectangle _____ has the greater area.

4. MP **Structure** Draw a rectangle that has the same perimeter as the one shown, but with a lesser area. What is the area?



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English Spanish

Think and Grow: Modeling Real Life

A paleontologist has 12 meters of twine to rope off a rectangular section of the ground. How long and wide should she make the roped-off section so it has the greatest possible area?

Draw to show:

She should make the roped-off section _____ meters long and _____ meters wide.

Show and Grow

5. Newton has 16 feet of wood to make a rectangular sandbox. How long and wide should he make the sandbox so it has the greatest possible area?

7 ft

3 ft

6. **DIG DEEPER!** You and Newton are building forts. You each have the same length of rope to make a rectangular perimeter for the fort on the ground. Your roped-off section is shown. Newton's section has a greater area than yours. Draw one way Newton could rope off his fort.

Descartes also builds a fort. He has the same length of rope as you to make a perimeter around his fort. Descartes's roped-off section has a lesser area than yours. Draw one way Descartes could rope off his fort.

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English Spanish

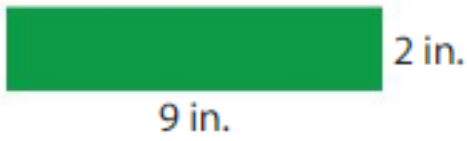
Name _____

Homework & Practice 15.4

Learning Target: Use area to compare rectangles with the same perimeter.

Example Find the perimeter and the area of Rectangle A.
Draw a different rectangle that has the same perimeter?
Which rectangle has the greater area?

Rectangle A



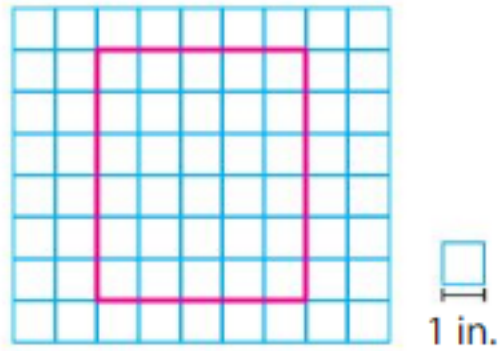
Perimeter = 9 + 2 + 9 + 2

= 22 inches

Area = 9 × 2

= 18 square inches

Rectangle B



Perimeter = 6 + 5 + 6 + 5

= 22 inches

Area = 6 × 5

= 30 square inches

Rectangle B has the greater area.

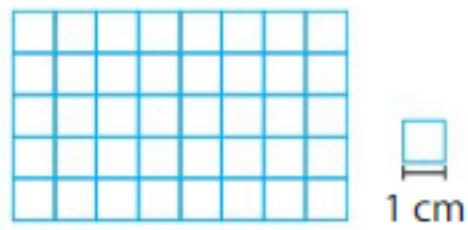
1. Find the perimeter and area of Rectangle A. Draw a different rectangle that has the same perimeter. Which rectangle has the greater area?

Rectangle A

Perimeter = _____

Area = _____

Rectangle B



Perimeter = _____

Area = _____

Rectangle _____ has the greater area.

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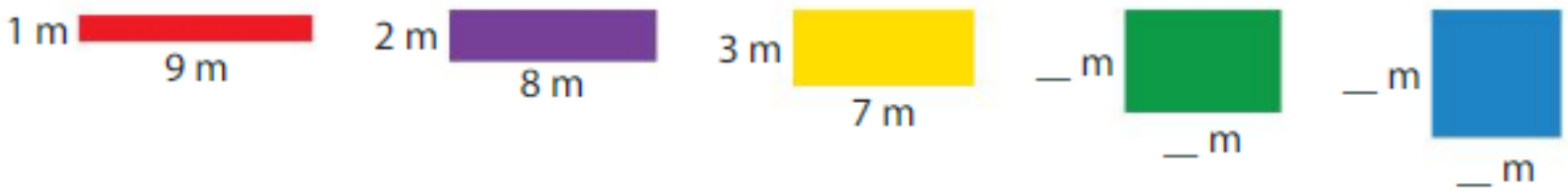
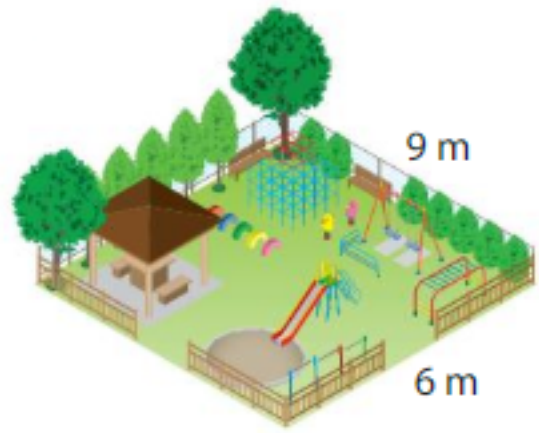
2. MP **Patterns** Complete the pattern. Find the area of each rectangle.



Each rectangle has the same perimeter. As the area increases, what do you notice about the shape of the rectangle?

3. **Modeling Real Life** You are making a card with a 36-centimeter ribbon border. How long and wide should you make the card so you have the greatest possible area to write?

4. DIG DEEPER! A school has two rectangular playgrounds that each have the same perimeter. The first playground is shown. The second has a lesser area than the first. Draw one way the second playground could look.



The school builds another playground. It has the same perimeter as the first. The third playground has a greater area than the first. Draw one way the third playground could look.

Review & Refresh

Find the product.

5. $2 \times 30 =$ _____

6. $6 \times 20 =$ _____

7. $3 \times 90 =$ _____

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English Spanish

Name _____

Same Area, Different Perimeters 15.5

Learning Target: Use perimeter to compare rectangles with the same area.

Success Criteria:

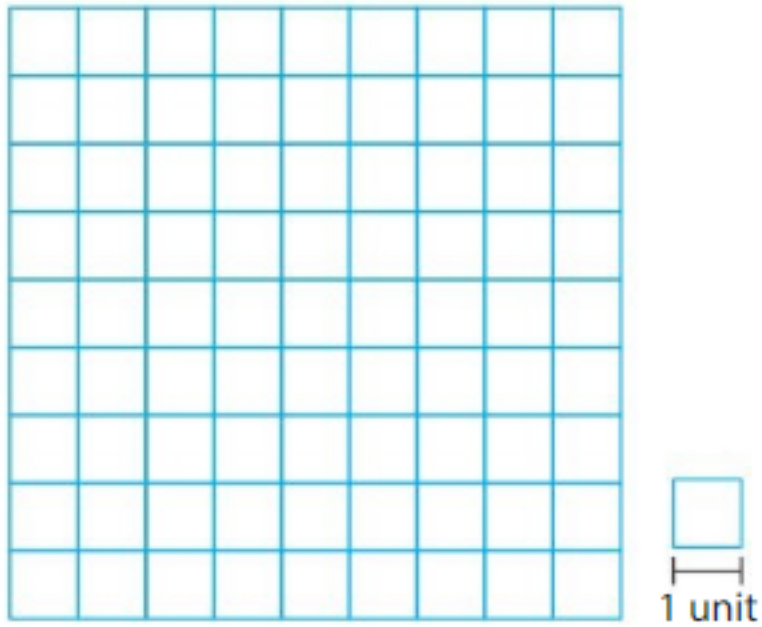
- I can find the area and perimeter of a given rectangle.
- I can draw a different rectangle with the same area as a given rectangle.
- I can compare the perimeters of the rectangles.

FLORIDA STANDARDS

MAFS.3.MD.3.5a
MAFS.3.MD.3.5b
MAFS.3.MD.3.6
MAFS.3.MD.4.8

Explore and Grow

Use color tiles to create two different rectangles that each have an area of 18 square units. Then draw your rectangles and label their dimensions. Do the rectangles have the same perimeter? Explain how you know.



MP **Repeated Reasoning** As the perimeter increases and the area stays the same, what do you notice about the shape of the rectangle?

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Think and Grow: Same Area, Different Perimeters

Example Find the area and the perimeter of Rectangle A. Draw a different rectangle that has the same area. Which rectangle has the lesser perimeter?

Rectangle A

Area = 2 × 6

= _____

Perimeter = 6 + 2 + 6 + 2

= _____

Rectangle B

Area = _____ × _____

= _____

Perimeter = _____ + _____ + _____ + _____

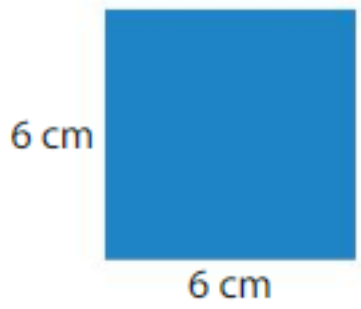
= _____

Rectangle _____ has the lesser perimeter.

Show and Grow

1. Find the area and the perimeter of Rectangle A. Draw a different rectangle that has the same area. Which rectangle has the lesser perimeter?

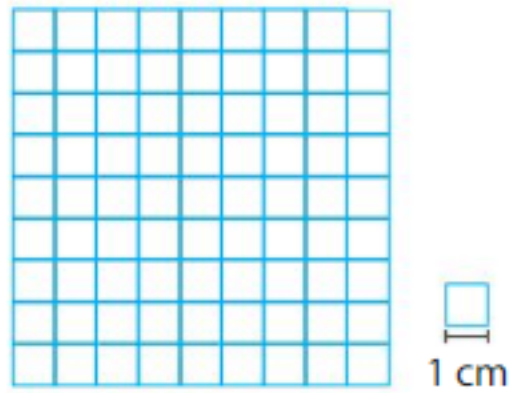
Rectangle A



Area = _____

Perimeter = _____

Rectangle B



Area = _____

Perimeter = _____

Rectangle _____ has the lesser perimeter.

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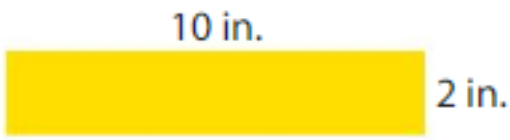
English Spanish

Name _____

Apply and Grow: Practice

Find the area and the perimeter of Rectangle A. Draw a different rectangle that has the same area. Which rectangle has the lesser perimeter?

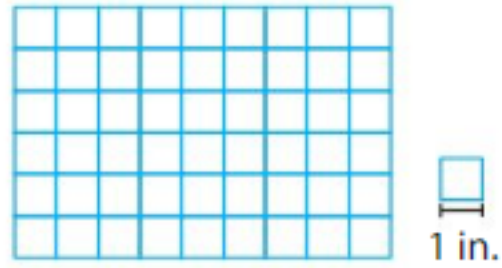
2. Rectangle A



Area = _____

Perimeter = _____

Rectangle B



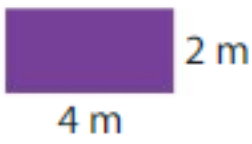
Area = _____

Perimeter = _____

Rectangle ____ has the lesser perimeter.

---

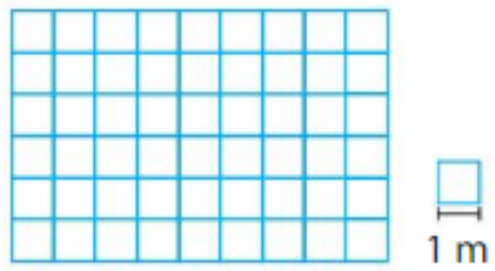
3. Rectangle A



Area = _____

Perimeter = _____

Rectangle B



Area = _____

Perimeter = _____

Rectangle ____ has the lesser perimeter.

---

4. DIG DEEPER! The perimeter of a blue rectangle is 10 feet. The perimeter of a green rectangle is 14 feet. Both rectangles have the same area. Find the area and the dimensions of each rectangle.

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Think and Grow: Modeling Real Life

You have 40 square patio bricks that are each 1 foot long and 1 foot wide. You want to make a rectangular patio with all of the bricks. How long and wide should you make the patio so it has the least possible perimeter?

Draw to show:

You should make the patio _____ feet long and _____ feet wide.

Show and Grow

5. Your friend has 16 square foam tiles that are each 1 foot long and 1 foot wide. He wants to make a rectangular exercise space with all of the tiles. How long and wide should he make the exercise space so it has the least possible perimeter?

6. **DIG DEEPER!** You and your friend each use fencing to make a rectangular playpen for a puppy. Each pen has the same area. Your pen is shown. Your friend's pen uses less fencing than yours. Draw one way your friend could make her pen.

Your cousin makes a playpen for a puppy. His pen has the same area as your pen. Your cousin's pen uses more fencing than yours. Draw one way your cousin could make his pen.

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English Spanish

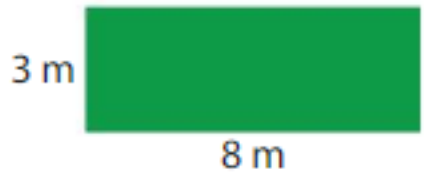
Name _____

Homework & Practice 15.5

Learning Target: Use perimeter to compare rectangles with the same area.

Example Find the area and the perimeter of Rectangle A. Draw a different rectangle that has the same area. Which rectangle has the lesser perimeter?

Rectangle A



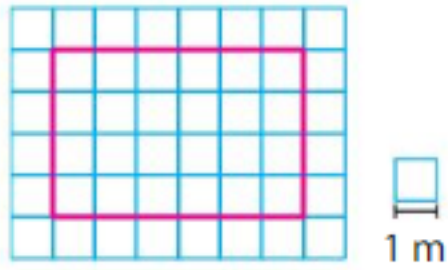
Area = 3×8

= 24 square meters

Perimeter = $3 + 8 + 3 + 8$

= 22 meters

Rectangle B



Area = 4 × 6

= 24 square meters

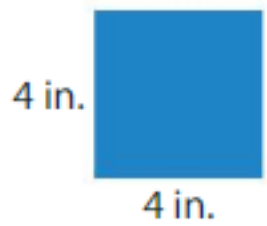
Perimeter = 4 + 6 + 4 + 6

= 20 meters

Rectangle B has the lesser perimeter.

1. Find the area and the perimeter of Rectangle A. Draw a different rectangle that has the same area. Which rectangle has the lesser perimeter?

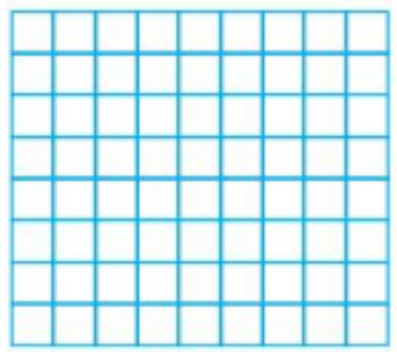
Rectangle A



Area = _____

Perimeter = _____

Rectangle B



Area = _____

Perimeter = _____

Rectangle _____ has the lesser perimeter.

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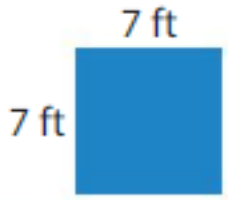
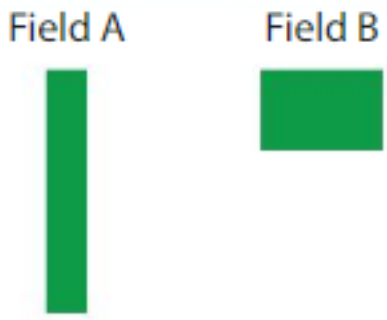
2. **Structure** The dimensions of a rectangle are 4 feet by 10 feet. Which shape has the same area, but a different perimeter?

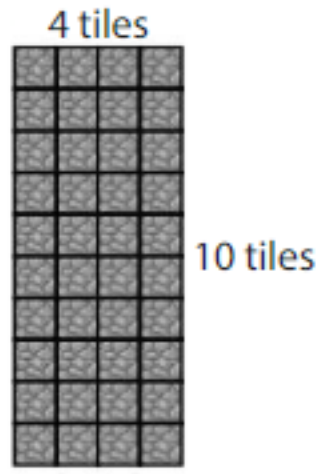


3. **Reasoning** The two fields have the same area. Players run one lap around each field. At which field do the players run farther? Explain.



4. **Modeling Real Life** You have 24 square pieces of T-shirt that are each 1 foot long and 1 foot wide. You want to make a rectangular T-shirt quilt with all of the pieces. How long and wide should you make the quilt so it has the least possible perimeter?

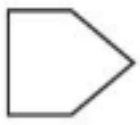
5. **DIG DEEPER!** You and Descartes each have 40 cobblestone tiles to arrange into a rectangular pathway. Your pathway is shown. Descartes's pathway has a lesser perimeter than yours. Draw one way Descartes could make his pathway.



Newton also makes a rectangular pathway with 40 cobblestone tiles. His pathway has a greater perimeter than yours. Draw one way Newton could make his pathway.

Review & Refresh

Identify the number of right angles and pairs of parallel sides.

6. 

Right angles: _____

Pairs of parallel sides: _____

7.

Right angles: _____

Pairs of parallel sides: _____

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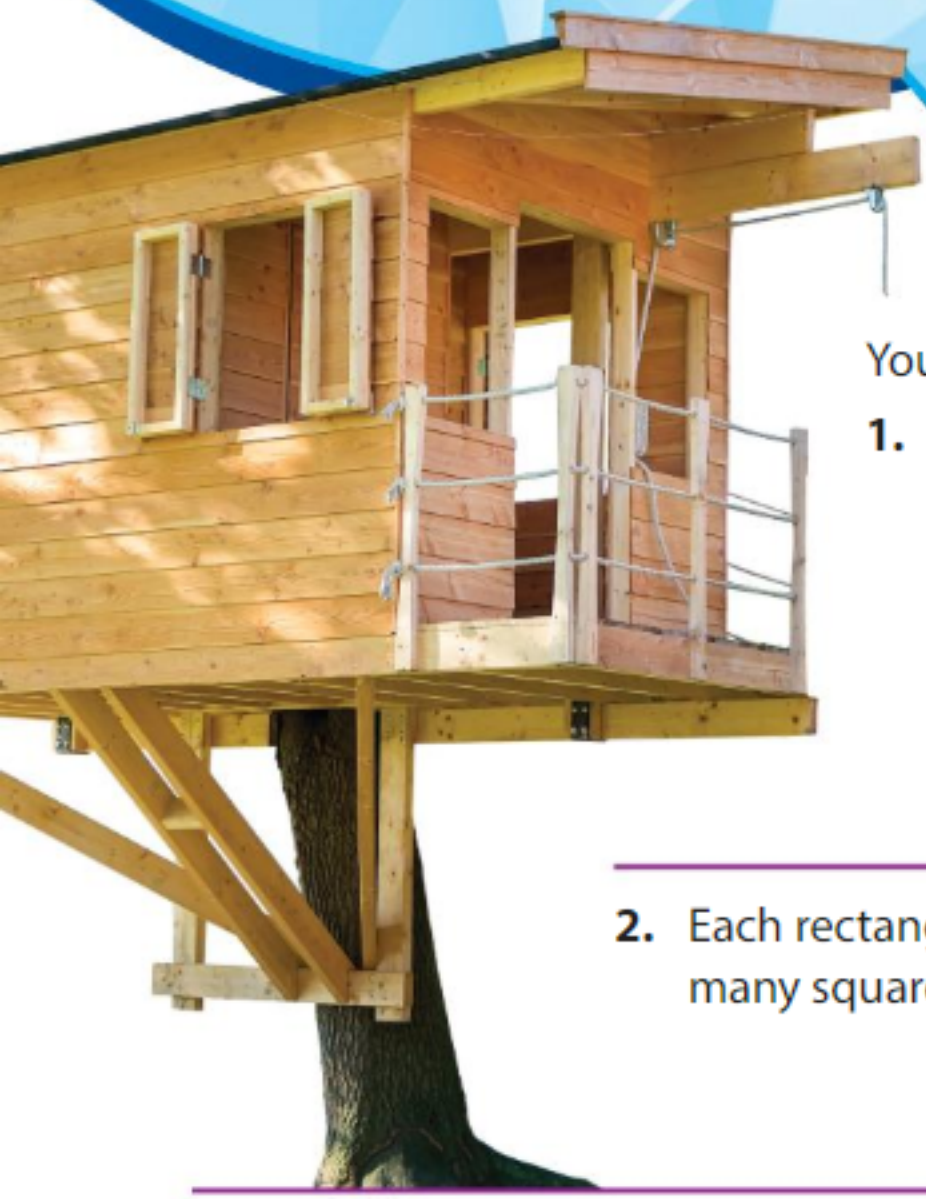
Name _____

Performance Task 15



You and your cousin build a tree house.

1. The floor of the tree house is in the shape of a quadrilateral with parallel sides that are 4 feet long and 10 feet long. The other 2 sides are equal in length. The perimeter is 24 feet. Sketch the floor and label all of the side lengths.

2. Each rectangular wall of the tree house is 5 feet tall. How many square feet of wood is needed for all of the walls?

3. You cut out a door in the shape of a rectangle with sides that are whole numbers. Its area is 8 square feet. What is the height of the door?

4. You want to paint the floor and walls on the inside of your tree house. The area of the floor is 28 square feet. Each quart of paint covers 100 square feet.

a. How many quarts of paint do you need to buy?

b. Do you have enough paint to paint the outside walls of the tree house? Explain.

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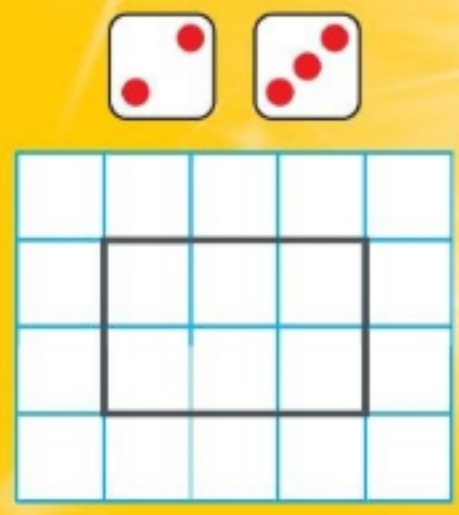
Perimeter Roll and Conquer

Directions:

1. Players take turns rolling two dice.
2. On your turn, draw a rectangle on the board using the numbers on the dice as the side lengths. Your rectangle cannot cover another rectangle.
3. Write an equation to find the perimeter of the rectangle.
4. If you cannot fit a rectangle on the board, then you lose your turn. Play 10 rounds, if possible.
5. Add all of your rectangles' perimeters together. The player with the greatest sum wins!

Example:



$2 \times 2 + 2 \times 3 = 10$

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English Spanish

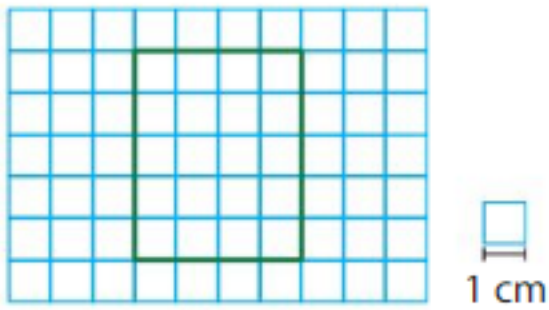
Name _____

Chapter Practice 15

15.1 Understand Perimeter

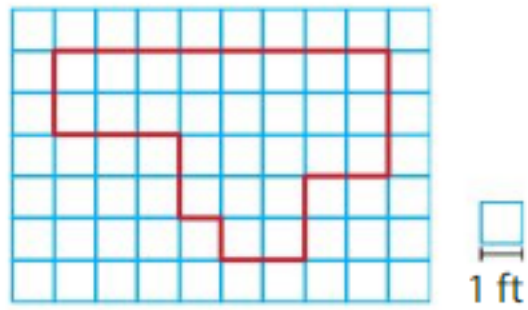
Find the perimeter of the figure.

1.



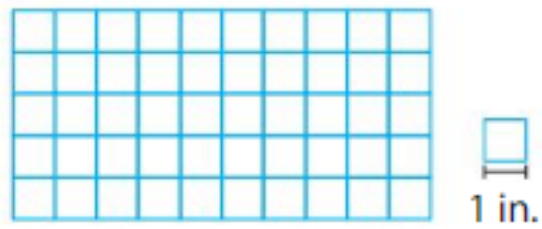
Perimeter = _____

2.



Perimeter = _____

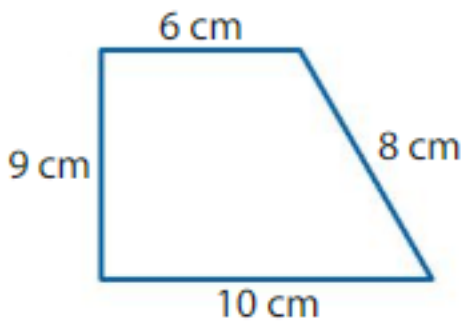
3. Draw a figure that has a perimeter of 10 inches.



15.2 Find Perimeter of Polygons

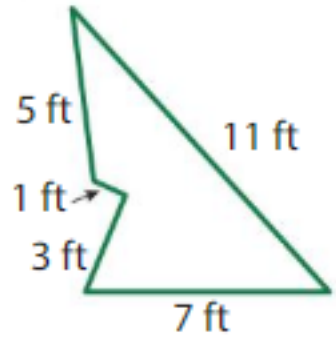
Find the perimeter of the polygon.

4.



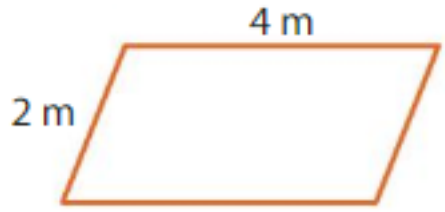
Perimeter = _____

5.



Perimeter = _____

6. Parallelogram



Perimeter = _____

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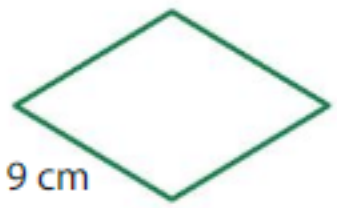
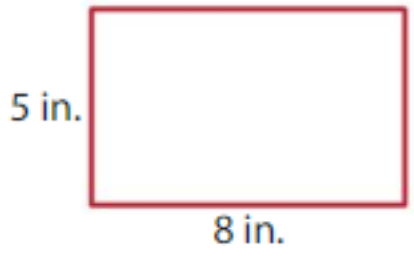
Find the perimeter of the polygon.

7. Rhombus



Perimeter = _____

8. Rectangle

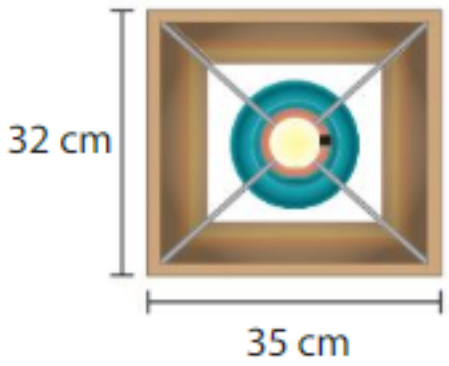


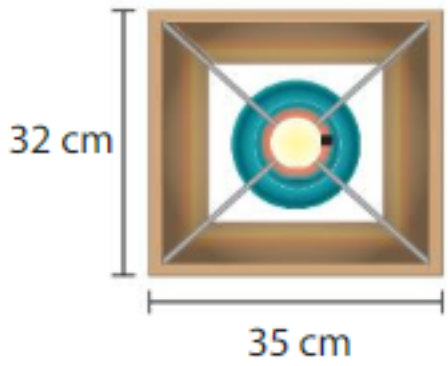
Perimeter = _____

9. Square

Perimeter = _____

10. **Modeling Real Life** You want to put lace around the tops of the two rectangular lampshades. How many centimeters of lace do you need?

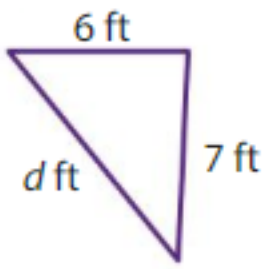




15.3 Find Unknown Side Lengths

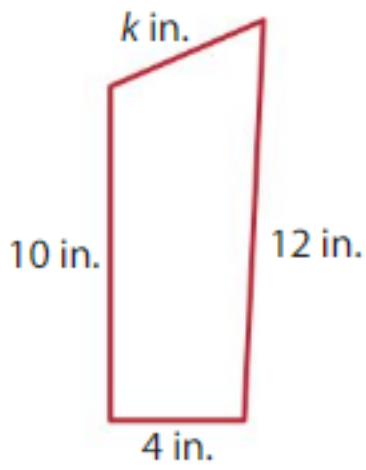
Find the unknown side length.

11. Perimeter = 22 feet



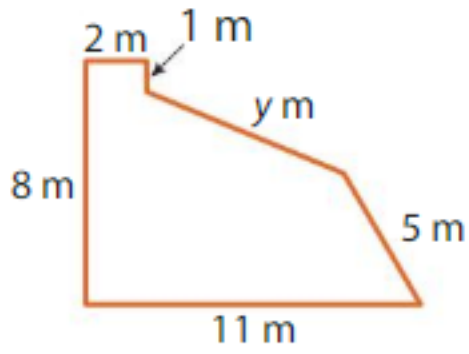
d = _____

12. Perimeter = 31 inches



k = _____

13. Perimeter = 34 meters



y = _____

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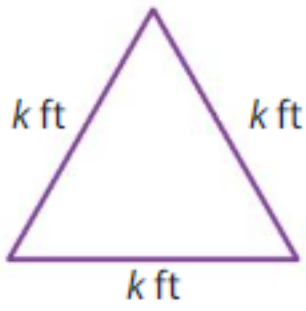
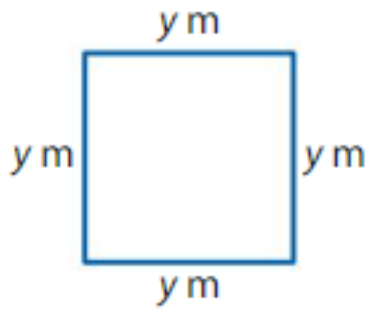
Find the unknown side length.

14. Perimeter = 24 feet



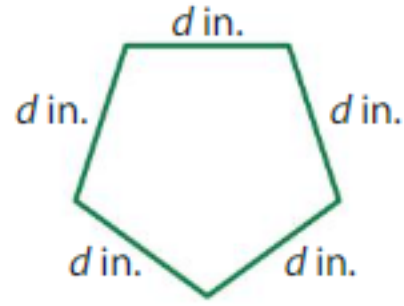
$k =$ _____

15. Perimeter = 16 meters



$y =$ _____

16. Perimeter = 30 inches



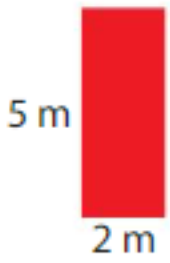
$d =$ _____

17. **Number Sense** A rectangle has a perimeter of 38 centimeters. The left side length is 10 centimeters. What is the length of the top side?

15.4 Same Perimeter, Different Areas

18. Find the perimeter and area of Rectangle A. Draw a different rectangle that has the same perimeter. Which rectangle has the greater area?

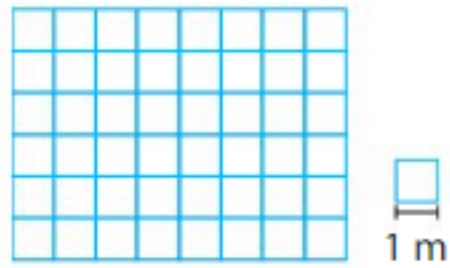
Rectangle A



Perimeter = _____

Area = _____

Rectangle B



Perimeter = _____

Area = _____

Rectangle _____ has the greater area.

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19. **Patterns** Each rectangle has the same perimeter. Are the areas increasing or decreasing? Explain.

15.5 Same Area, Different Perimeters

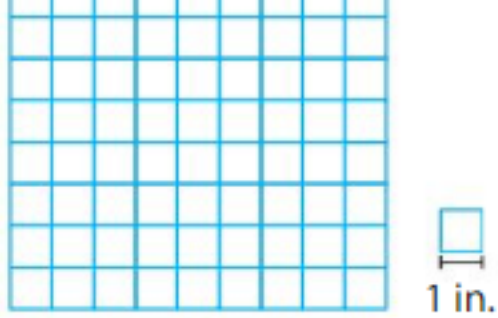
20. Find the area and the perimeter of Rectangle A. Draw a different rectangle that has the same area. Which rectangle has the lesser perimeter?

Rectangle A

Area = _____

Perimeter = _____

Rectangle B

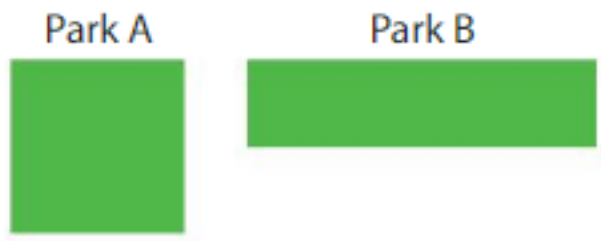


Area = _____

Perimeter = _____

Rectangle _____ has the lesser perimeter.

21. **Reasoning** The two dirt-bike parks have the same area. Kids ride dirt bikes around the outside of each park. At which park do the kids ride farther? Explain.



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Name _____

Cumulative Practice 1–15

1. A mango has a mass that is 369 grams greater than the apple. What is the mass of the mango?

Ⓐ 471 grams

Ⓑ 369 grams

Ⓒ 267 grams

Ⓓ 461 grams

---

2. Which term describes two of the shapes shown, but *not* all three of the shapes?

Ⓐ polygon

Ⓑ rectangle

Ⓒ square

Ⓓ parallelogram

---

3. A rectangular note card has an area of 35 square inches. The length of one of its sides is 7 inches. What is the perimeter of the note card?

Ⓐ 5 inches

Ⓑ 24 inches

Ⓒ 84 inches

Ⓓ 12 inches

---

4. How many minutes are equivalent to 4 hours?

Ⓐ 400 minutes

Ⓑ 240 minutes

Ⓒ 24 minutes

Ⓓ 40 minutes

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5. A balloon artist has 108 balloons. He has 72 white balloons, and an equal number of red, blue, green, and purple balloons. How many purple balloons does he have?

Ⓐ 36 Ⓑ 180 Ⓒ 9 Ⓓ 32

6. Which statements about the figures are true?

Square

6 in.

Rectangle

4 in.

9 in.

- ☐ The shapes have different perimeters.
- ☐ The shapes have the same areas.
- ☐ The shapes have the same perimeters.
- ☐ The shapes have different areas.

7. The graph shows how many students ordered each lunch option.

Think
Solve
Explain

Lunch Orders	
Grilled chicken	☺ ☺ ☺ ◔
Turkey hot dog	☺ ◔
Peanut butter and jelly sandwich	☺ ☺
Salad bar	☺ ☺ ☺

Each ☺ = 6 students.

Part A How many students ordered lunch?

Part B Choose a lesser value for the key. How will the graph change?

8. Find the sum.

$$\begin{array}{r} 354 \\ 297 \\ 156 \\ +\ 128 \\ \hline \end{array}$$

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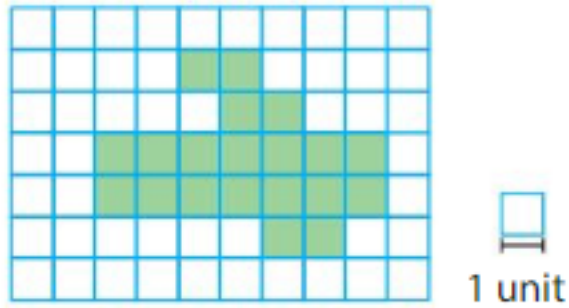
9. What is the perimeter of the figure?

Ⓐ 26 units

Ⓑ 22 units

Ⓒ 20 units

Ⓓ 16 units

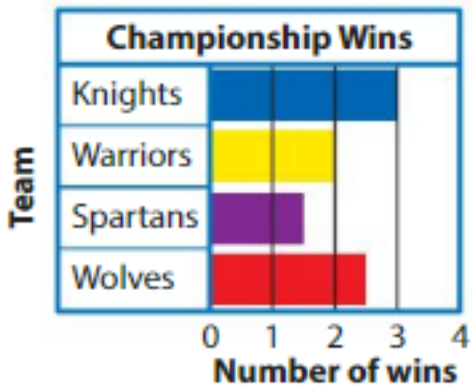


---

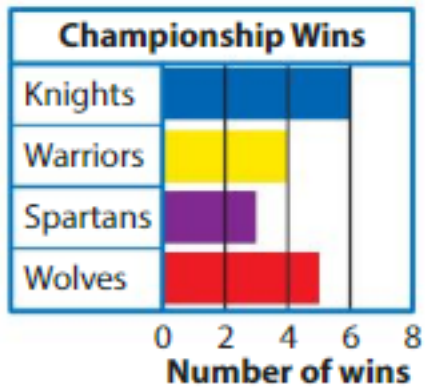
10. Which bar graph correctly shows the data?

Championship Wins	
Knights	6
Warriors	4
Spartans	3
Wolves	5

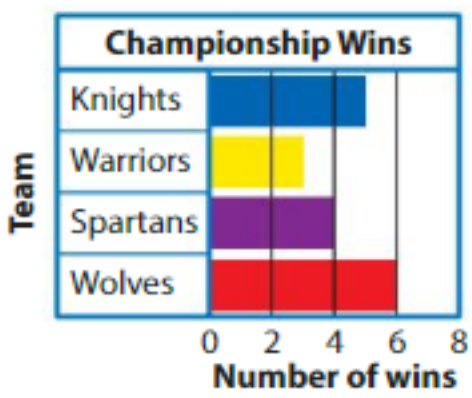
Ⓐ



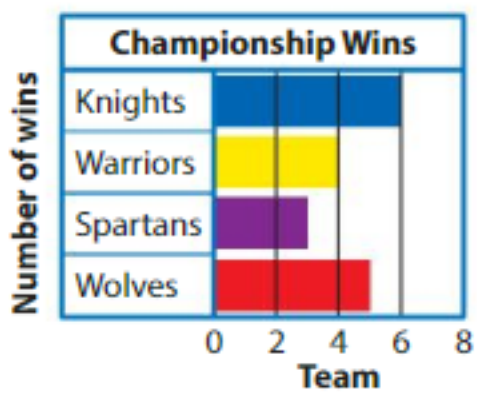
Ⓑ



Ⓒ

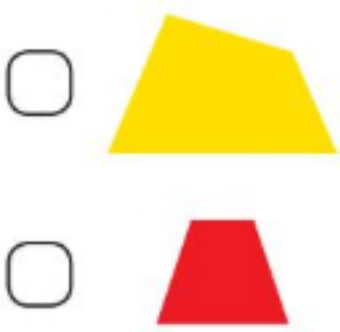


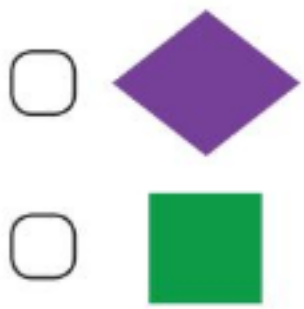
Ⓓ



---

11. Which polygons have at least one pair of parallel sides?





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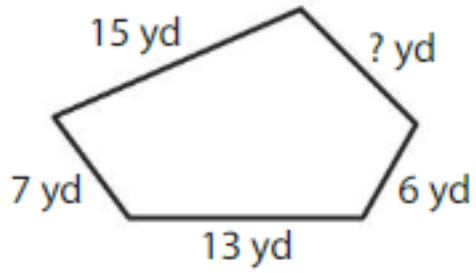
12. The perimeter of the polygon is 50 yards. What is the missing side length?

Ⓐ 41 yards

Ⓑ 10 yards

Ⓒ 91 yards

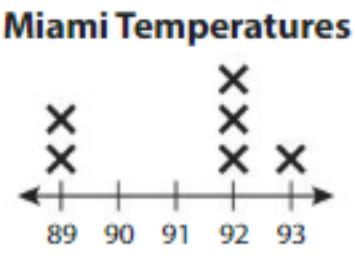
Ⓓ 9 yards



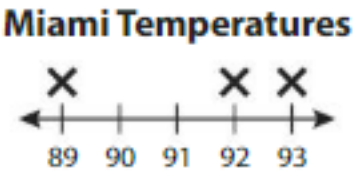
---

13. Which line plot correctly shows the data?

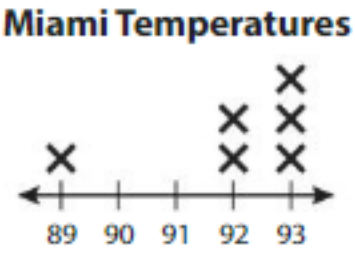
Ⓐ



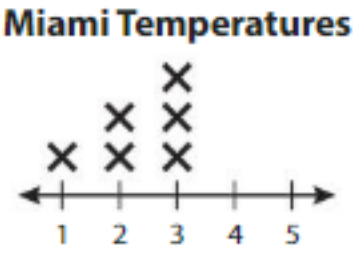
Ⓑ



Ⓒ



Ⓓ



Miami High Temperatures (degrees Fahrenheit)	
Monday	89
Tuesday	92
Wednesday	92
Thursday	92
Friday	93
Saturday	89

---

14. Your friend is asked to draw a quadrilateral with four right angles. She says it can only be a square. Is she correct?

Ⓐ Yes, there is no other shape it can be.

Ⓑ No, it could also be a rectangle.

Ⓒ No, it could also be a hexagon.

Ⓓ No, it could also be a trapezoid.

---

15. Which numbers round to 480 when rounded to the nearest ten?

☐ 484

☐ 478

☐ 472

☐ 485

☐ 475

☐ 489

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English Spanish

Name _____

STEAM Performance Task 1–15

1. Use the Internet or some other resource to learn more about crested geckos.

a. Write three interesting facts about geckos.

b. Geckos need to drink water every day. Is this amount of water measured in *milliliters* or *liters*? Explain.

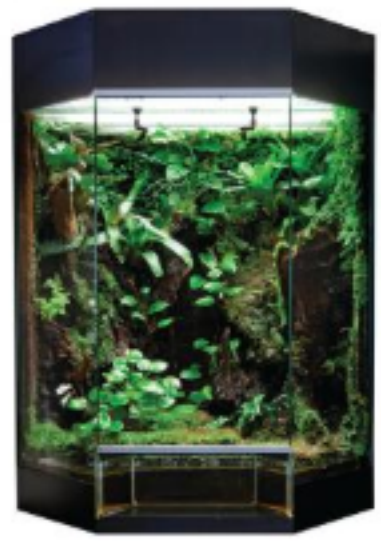
c. Geckos can live in a terrarium. Is the capacity of this terrarium measured in *milliliters* or *liters*? Explain.

2. Your class designs a terrarium for a gecko.

a. The base of the terrarium is a hexagon. Each side of the hexagon is 6 inches long. What is the perimeter of the base?

b. The terrarium is 20 inches tall. All of the side walls are made of glass. How many square inches of glass is needed for the terrarium?

c. Another class designs a terrarium with a rectangular base. All of its sides are equal in length. The base has the same perimeter as the base your class designs. What is the perimeter of the base? What is the area?



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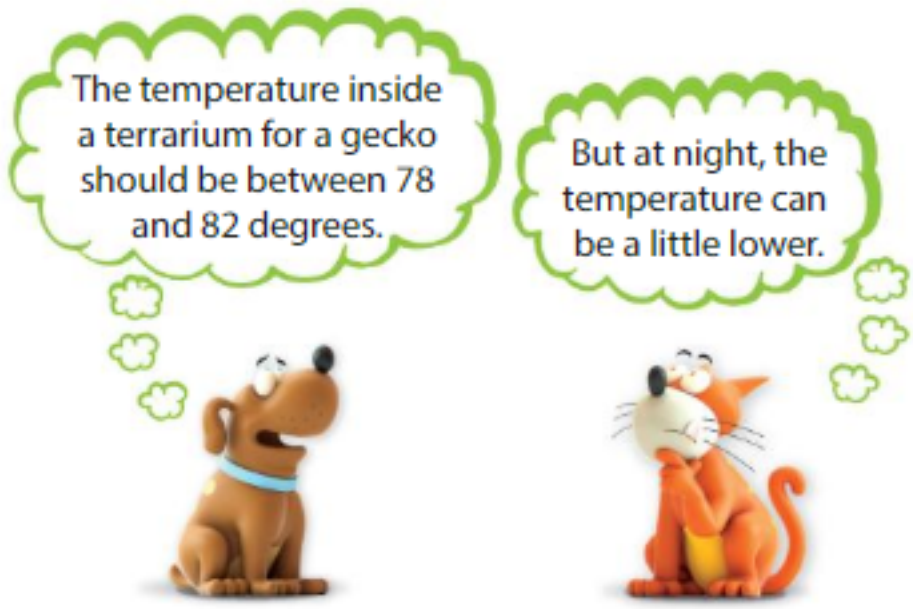
3. An online store sells crested geckos. The store owner measures the length of each gecko in the store. The results are shown in the table.

Crested Gecko Lengths (inches)					
$7\frac{1}{2}$	8	$5\frac{1}{4}$	$5\frac{3}{4}$	$6\frac{1}{4}$	$5\frac{1}{2}$
5	$5\frac{1}{4}$	$7\frac{1}{4}$	$6\frac{1}{2}$	7	$6\frac{3}{4}$
$5\frac{1}{2}$	$6\frac{1}{4}$	$5\frac{1}{2}$	6	$5\frac{1}{2}$	$6\frac{1}{2}$
$7\frac{1}{4}$	$6\frac{1}{2}$	5	$5\frac{1}{2}$	$7\frac{1}{2}$	6



a. Use the table to complete the line plot.

Number of inches

b. How many geckos did the store owner measure?

c. What is the difference in the lengths of the longest gecko and the shortest gecko?

d. How many geckos are shorter than $6\frac{1}{4}$ inches?

e. The length of a gecko's tail is about 3 inches. How would the line plot change if the store owner measured the length of each gecko without its tail?

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Glossary

A

Addition Property of Zero
[propiedad adicional de cero]

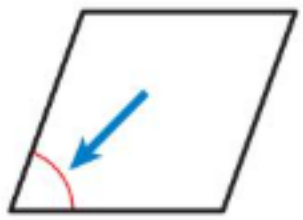
The sum of any number and 0 is that number.

$5 + 0 = 5$

$48 + 0 = 48$

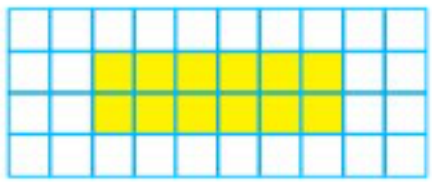
$376 + 0 = 376$

angle **[ángulo]**



area **[área]**

The amount of surface a shape covers



You can measure area by counting the number of unit squares needed to cover a flat surface with no gaps or overlaps.

array **[arreglo]**

A group of objects arranged into rows and columns

Associative Property of Addition
[propiedad asociativa de la suma]

Changing the grouping of addends does not change the sum.

$7 + (3 + 4) = 14$

$(7 + 3) + 4 = 14$

So, $7 + (3 + 4) = (7 + 3) + 4$.

Associative Property of Multiplication
[propiedad asociativa de la multiplicación]

Changing the grouping of factors does not change the product.

$2 \times (3 \times 4) = 24$

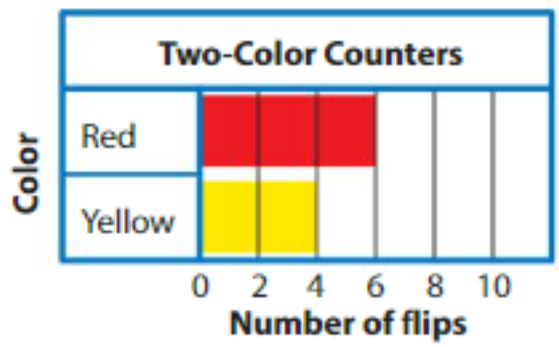
$(2 \times 3) \times 4 = 24$

So, $2 \times (3 \times 4) = (2 \times 3) \times 4$.

B

bar graph **[gráfica de barras]**

A graph that shows data using bars



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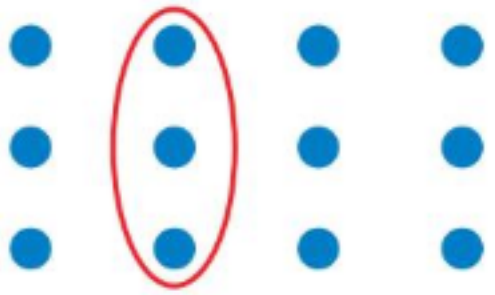
C

column [columna]

A vertical (up and down) arrangement of objects in an array



Commutative Property of Addition
[propiedad conmutativa de la suma]

Changing the order of addends does not change the sum.

$6 + 5 = 11$

$5 + 6 = 11$

So, $6 + 5 = 5 + 6$.

Commutative Property of Multiplication
[propiedad conmutativa de la multiplicatión]

Changing the order of factors does not change the product.

$4 \times 3 = 12$

$3 \times 4 = 12$

So, $4 \times 3 = 3 \times 4$.

compatible numbers
[números compatibles]

Numbers that are easy to add or subtract mentally and are close to the actual numbers

$$\begin{array}{rcr} 147 & \longrightarrow & 150 \\ +\ 199 & \longrightarrow & +\ 200 \end{array}$$

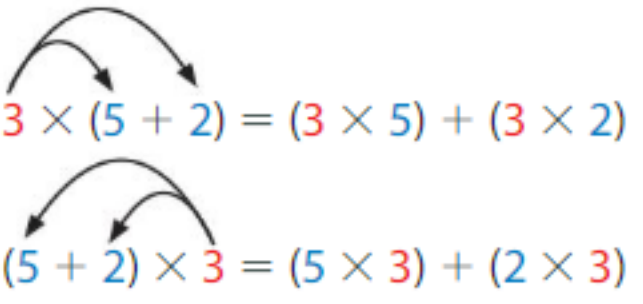
D

denominator [denominador]

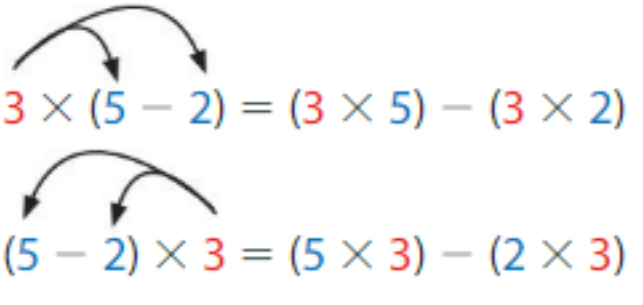
The part of a fraction that represents how many equal parts are in a whole

$\frac{1}{6}$ ← denominator

Distributive Property (with addition)
[propiedad distributiva con adición]



Distributive Property (with subtraction)
[propiedad distributiva con sustracción]



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dividend [dividendo]

The number of objects or the amount you want to divide

$$10 \div 2 = 5$$

division [división]

An operation that separates a group of objects into groups of equal size

$12 \div 3 = 4$

$12 \div 4 = 3$

division symbol [simbolo de división]

$$12 \div 3 = 4$$

divisor [divisor]

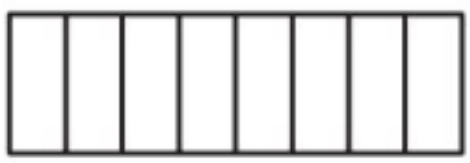
The number by which you divide

$$10 \div 2 = 5$$

E

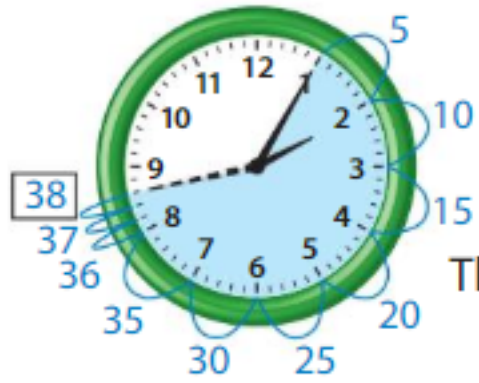
eighths [octavos]

The whole is divided into eight equal parts, or **eighths**.



elapsed time [tiempo transcurrido]

The amount of time that passes from a starting time to an ending time



The elapsed time is 38 minutes.

equal groups [grupos iguales]

Groups that have the same number of objects

equation [ecuación]

A mathematical sentence that uses an equal sign, =, to show that two expressions are equal

$4 \times 3 = 12$

$12 \div 4 = 3$

equivalent [equivalente]

Having the same value

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

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

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

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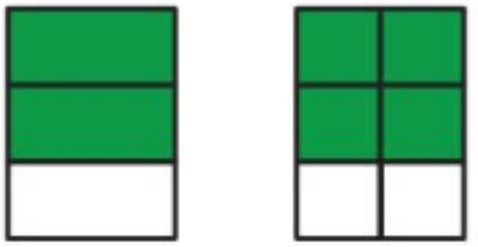
equivalent fractions
[fracciones equivalentes]

Two or more fractions that name the same part of a whole

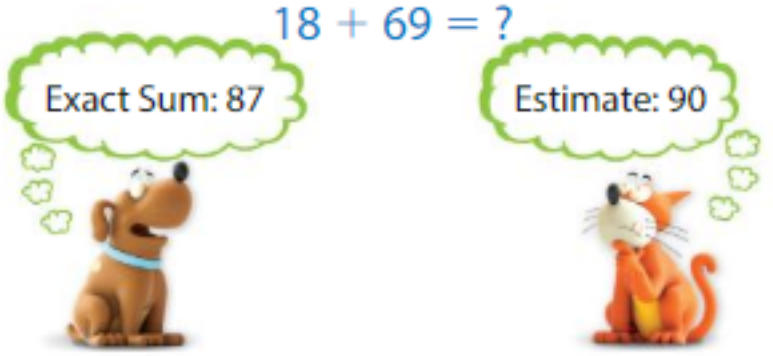


$\frac{2}{3} = \frac{4}{6}$

estimate **[estimar]**

A number that is close to an exact number

$18 + 69 = ?$



F

fact family **[familia de hechos]**

A group of related facts that uses the same numbers

$3 \times 2 = 6$

$2 \times 3 = 6$

$6 \div 3 = 2$

$6 \div 2 = 3$

factors **[factor]**

Numbers that are multiplied to get a product

$3 \times 4 = 12$

fraction **[fracción]**

A number that represents part of a whole

$\frac{1}{6}$

frequency table **[table de frecuencia]**

A table that gives the number of times something occurs

Two-Color Counters	
Red	6
Yellow	4

G

gram (g) **[gramo]**

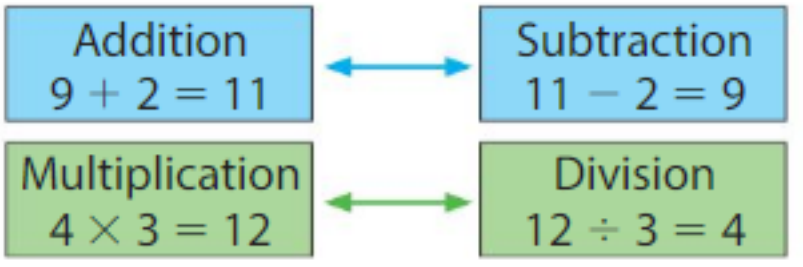
The standard metric unit used to measure mass

The mass of a paper clip is about 1 **gram**.

I

inverse operations
[operaciones inversas]

Operations that "undo" each other, such as addition and subtraction or multiplication and division



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K

key [clave]

The part of a graph that gives the value of one picture or symbol

Two-Color Counters	
Red	○○○
Yellow	○○

Each ○ = 2 flips.

kilogram (kg) [kilogramo]

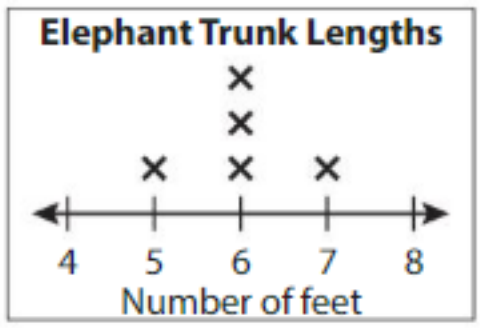
A metric unit used to measure mass

The mass of a baseball bat is about 1 **kilogram**.

L

line plot [diagrama lineal]

A graph that uses marks above a number line to show data values



liquid volume [volumen liquido]

The amount of liquid in a container

liter (L) [litro]

The standard metric unit used to measure liquid volume

There is about 1 **liter** of liquid in the water bottle.

M

mass [masa]

The amount of matter in an object

milliliter (mL) [mililitro]

A metric unit used to measure liquid volume

20 drops of liquid from an eyedropper is about 1 **milliliter**.

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multiple [múltiplo]

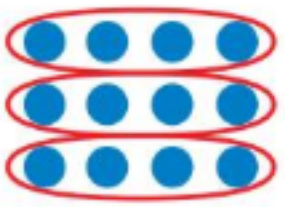
The product of a number and any other counting number

$1 \times 5 = 5$
$2 \times 5 = 10$
$3 \times 5 = 15$
$4 \times 5 = 20$

multiples of 5

multiplication [multiplicación]

An operation that gives the total number of objects when you combine equal groups



$3 \times 4 = 12$

Multiplication Property of One
[propiedad de multiplicación de uno]

The product of any number and 1 is that number.

$10 \times 1 = 10$ $1 \times 2 = 2$

Multiplication Property of Zero
[propiedad de multiplicación de cero]

The product of any number and 0 is 0.

$5 \times 0 = 0$ $0 \times 2 = 0$

multiplication symbol
[símbolo de multiplicación]

$3 \times 4 = 12$

N

numerator [numerador]

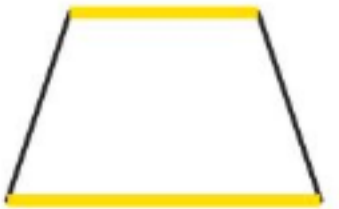
The part of a fraction that represents how many equal parts are being counted

$\frac{1}{6}$ ← numerator

P

parallel sides [lados de paralelos]

Two sides that are always the same distance apart

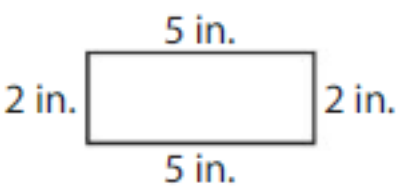


parallelogram [paralelogramo]

A quadrilateral with two pairs of parallel sides

perimeter [perímetro]

The distance around a figure



The perimeter of the rectangle is 14 inches.

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picture graph [gráfico de imagen]

A graph that shows data using pictures or symbols

Two-Color Counters	
Red	○○○
Yellow	○○

Each ○ = 2 flips.

place value [valor posicional]

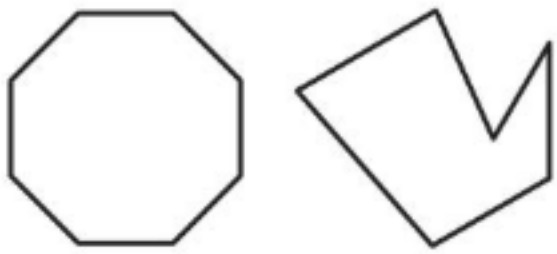
The value of the place of a digit in a number

231

The digit 2 has a place value of 100 because it is in the hundreds place.

polygon [polígono]

A closed, two-dimensional shape with three or more sides



product [producto]

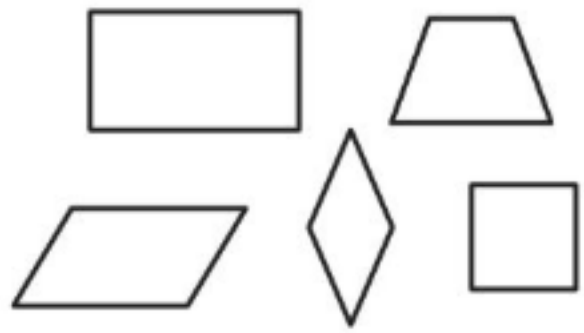
The answer to a multiplication problem

$3 \times 4 = 12$

Q

quadrilateral [cuadrilátero]

A polygon with four sides



quotient [cociente]

The answer when you divide one number by another number

$10 \div 2 = 5$

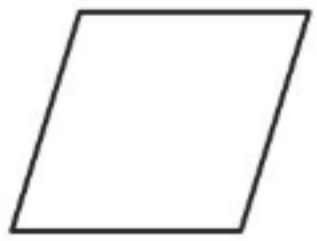
R

rectangle [rectángulo]

A parallelogram with four right angles

rhombus [rombo]

A parallelogram with four equal sides



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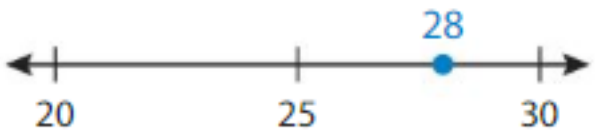
right angle [ángulo recto]

An L-shaped angle

round [redondear]

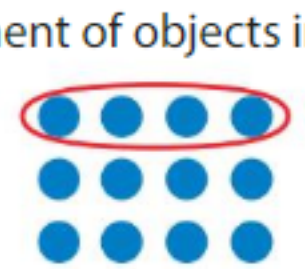
To replace a number with the nearest multiple of ten or hundred



28 **rounded** to the nearest ten is 30.

row [fila]

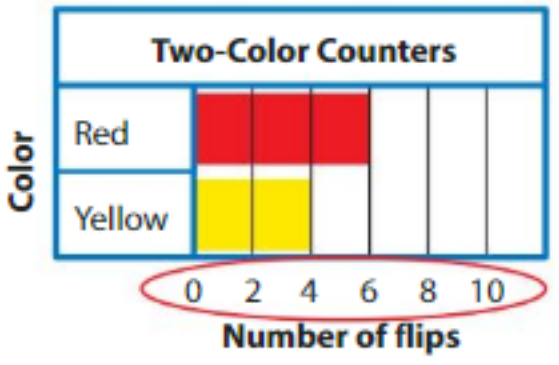
A horizontal (left to right) arrangement of objects in an array



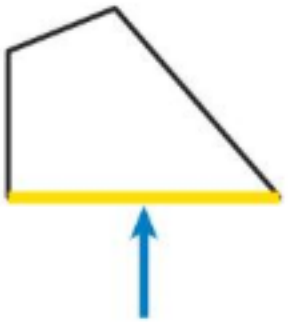
S

scale [escala]

A group of labels that shows the values at equally spaced grid lines



side [lado]



sixths [sextos]

The whole is divided into six equal parts, or **sixths**.

square [cuadrado]

A parallelogram with four right angles and four equal sides

square unit [unidad cuadrada]

A unit used to measure area

square centimeter

square meter

square inch

square foot

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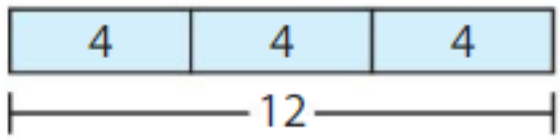
T

tape diagram [diagrama de cinta]

A model that shows a whole divided into parts



time interval [interval de tiempo]

An amount of time

15 minutes

30 minutes

57 minutes

42 minutes

trapezoid [trapecio]

A quadrilateral with exactly one pair of parallel sides

U

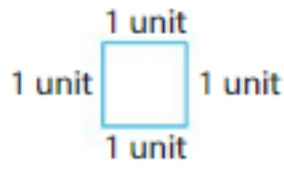
unit fraction [fracción unitaria]

Represents one equal part of a whole

The fraction $\frac{1}{6}$ is a unit fraction.

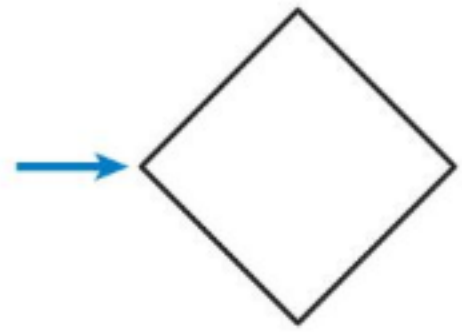
unit square [cuadrado de una unidad]

A square with sides that are each 1 unit long



V

vertex [vértice]



W

whole [entero]

All of the parts of one shape or group

whole numbers [números entero]

The numbers 0, 1, 2, 3, and so on

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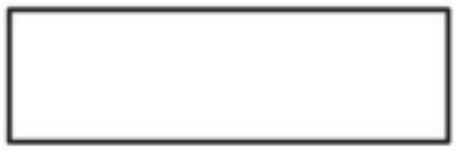
Reference Sheet

Symbols

×	multiply	÷	divide	=	equals	>	greater than	<	less than

Equal Shares



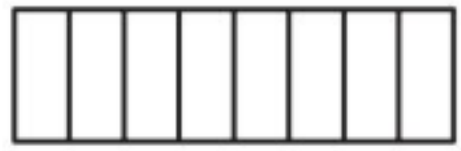
A **whole** is all of the parts of one shape or group.

2 equal parts or **halves**

3 equal parts or **thirds**

4 equal parts or **fourths**

6 equal parts or **sixths**



8 equal parts or **eighths**

Fractions

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

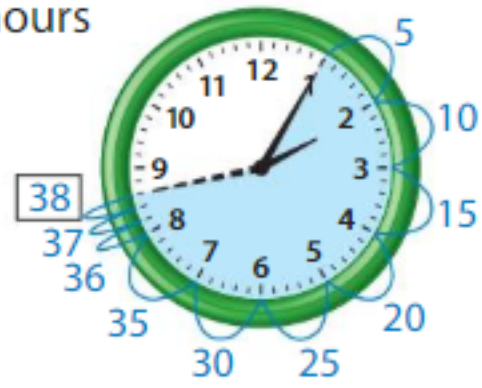
A **fraction** is a number that represents part of a whole.

Time

1 minute (min) = 60 seconds (sec)

1 hour (h) = 60 minutes

1 day (d) = 24 hours



The elapsed time is 38 minutes.

Liquid Volume

1 liter (L) = 1,000 milliliters (mL)

Mass

1 kilogram (kg) = 1,000 grams (g)

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