

Dear Family,

Throughout the next few weeks, our math class will be working with data and graphs. We will learn how to make and use line plots and line graphs to analyze data and solve problems. We will also learn how to plot and name points on a coordinate grid.

You can expect to see homework that includes making and analyzing line graphs.

Here is a sample of how your child will be taught to interpret line graphs.

## Vocabulary

**interval** The difference between one number and the next on the scale of a graph

**line graph** A graph that uses line segments to show how data changes over time

**scale** A series of numbers placed at fixed distances on a graph to help label the graph

**x-axis** The horizontal number line on a coordinate plane

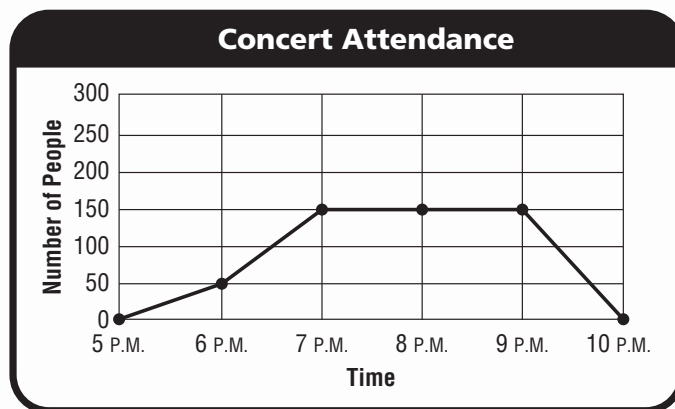
**x-coordinate** The first number in an ordered pair, which tells the distance to move right or left from (0, 0)

**y-axis** The vertical number line on a coordinate plane

**y-coordinate** The second number in an ordered pair, which tells the distance to move up or down from (0, 0)

### **MODEL** Analyze Line Graphs

This is how we will analyze line graphs.



Use the graph to identify between what times the concert attendance increased the most.

**STEP 1** Look at each segment in the graph.

**STEP 2** Find the segment that shows the greatest increase in number of people between two consecutive points.

The greatest increase in the number of people occurred between 6 P.M. and 7 P.M.

### Tips

#### Choose an Appropriate Graph

The type of data being reported will help determine what type of graph can be used to visually display the data. Line graphs are a good way to display data that change over time.

## Activity

Look through a few newspapers or magazines to find data displays. Then work together to write and answer questions about the information displayed.

# Carta para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas vamos a trabajar con datos y gráficas. Aprenderemos cómo hacer y usar diagramas de puntos y gráficas lineales para analizar datos y resolver problemas. También aprenderemos a anotar y nombrar los puntos en una cuadrícula de coordenadas.

Llevaré a la casa tareas para aprender a hacer y analizar gráficas lineales.

Este es un ejemplo de la manera como aprenderemos a interpretar gráficas lineales.

## Vocabulario

**intervalo** La diferencia entre un número y el siguiente en la escala de una gráfica

**gráfica lineal** Una gráfica que usa segmentos para mostrar cómo los datos cambian con el tiempo

**escala** Una serie de números colocados a distancias fijas en una gráfica que permite rotular la gráfica

**eje de la x** La recta numérica horizontal en un plano de coordenadas

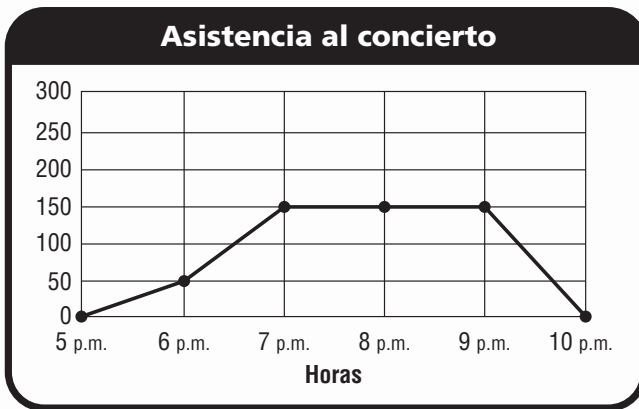
**eje de la y** La recta numérica vertical en un plano de coordenadas

**coordenada x** El primer número de un par ordenado que muestra la distancia para moverse hacia la derecha o la izquierda desde (0, 0)

**coordenada y** El segundo número de un par ordenado que muestra la distancia para moverse hacia arriba o hacia abajo desde (0, 0)

## MODELO Interpretar gráficas lineales

Así es como interpretamos las gráficas lineales.



Usa la gráfica para identificar entre qué horas aumentó más la asistencia al concierto.

**PASO 1** Analiza cada segmento de la gráfica.

**PASO 2** Halla el segmento que muestre el mayor aumento de la cantidad de personas entre dos puntos consecutivos.

El mayor aumento en la cantidad de personas ocurrió entre las 6 y las 7 p.m.

## Pistas

### Elegir una gráfica adecuada

El tipo de datos que se van a reportar, determina el tipo de gráfica que se puede usar para mostrar esos datos. Las gráficas lineales nos permiten mostrar datos que cambian con el tiempo.

## Actividad

Busquen datos presentados de diferentes formas en periódicos y revistas. Después escriban y contesten juntos preguntas sobre la información que se muestra.

Name \_\_\_\_\_

## Line Plots



**COMMON CORE STANDARD—5.MD.2**  
Represent and interpret data.

Use the data to complete the line plot. Then answer the questions.

A clerk in a health food store makes bags of trail mix. The amount of trail mix in each bag is listed below.

$\frac{1}{4}$  lb,  $\frac{1}{4}$  lb,  $\frac{3}{4}$  lb,  $\frac{1}{2}$  lb,  $\frac{1}{4}$  lb,  $\frac{3}{4}$  lb,  
 $\frac{3}{4}$  lb,  $\frac{3}{4}$  lb,  $\frac{1}{2}$  lb,  $\frac{1}{4}$  lb,  $\frac{1}{2}$  lb,  $\frac{1}{2}$  lb

**1 lb**

1. What is the combined weight of the  $\frac{1}{4}$ -lb bags? \_\_\_\_\_

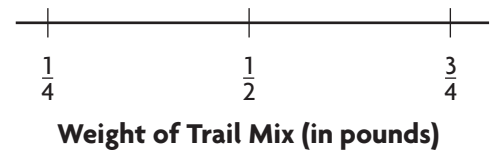
**Think:** There are four  $\frac{1}{4}$ -pound bags.

2. What is the combined weight of the  $\frac{1}{2}$ -lb bags? \_\_\_\_\_

3. What is the combined weight of the  $\frac{3}{4}$ -lb bags? \_\_\_\_\_

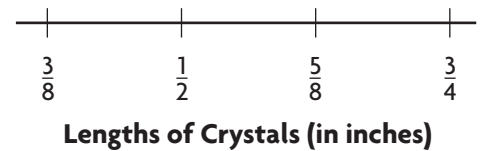
4. What is the total weight of the trail mix used in all the bags? \_\_\_\_\_

5. What is the average amount of trail mix in each bag? \_\_\_\_\_



Julie uses crystals to make a bracelet. The lengths of the crystals are shown below.

$\frac{1}{2}$  in.,  $\frac{5}{8}$  in.,  $\frac{3}{4}$  in.,  $\frac{1}{2}$  in.,  $\frac{3}{8}$  in.,  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in.,  
 $\frac{3}{8}$  in.,  $\frac{3}{4}$  in.,  $\frac{5}{8}$  in.,  $\frac{1}{2}$  in.,  $\frac{3}{8}$  in.,  $\frac{5}{8}$  in.,  $\frac{3}{4}$  in.



6. What is the combined length of the  $\frac{1}{2}$ -in. crystals? \_\_\_\_\_

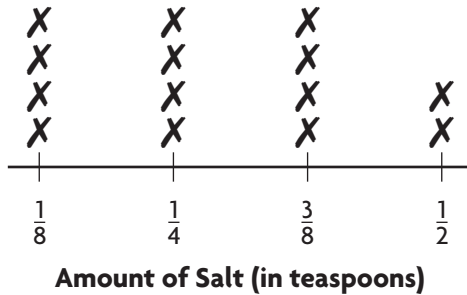
7. What is the combined length of the  $\frac{5}{8}$ -in. crystals? \_\_\_\_\_

8. What is the total length of all the crystals in the bracelet? \_\_\_\_\_

9. What is the average length of each crystal in the bracelet? \_\_\_\_\_

## Lesson Check (5.MD.2)

A baker uses different amounts of salt when she bakes loaves of bread, depending on which recipe she is following. The amount of salt called for in each recipe is shown on the line plot.



1. Based on the line plot, how many recipes call for more than  $\frac{1}{4}$  tsp of salt?

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2. What is the average amount of salt called for in each recipe?

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## Spiral Review (5.NBT.4, 5.NF.1, 5.NF.4a, 5.NF.7c)

3. Ramona had  $8\frac{3}{8}$  in. of ribbon. She used  $2\frac{1}{2}$  in. for an art project. How many inches of ribbon does she have left? Find the difference in simplest form.

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5. What is 92.583 rounded to the nearest tenth?

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4. Ben bought  $\frac{1}{2}$  pound of cheese for 3 sandwiches. If he puts the same amount of cheese on each sandwich, how much cheese will each sandwich have?

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6. In Yoshi's garden,  $\frac{3}{4}$  of the flowers are tulips. Of the tulips,  $\frac{2}{3}$  are yellow. What fraction of the flowers in Yoshi's garden are yellow tulips?

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Name \_\_\_\_\_

## Ordered Pairs

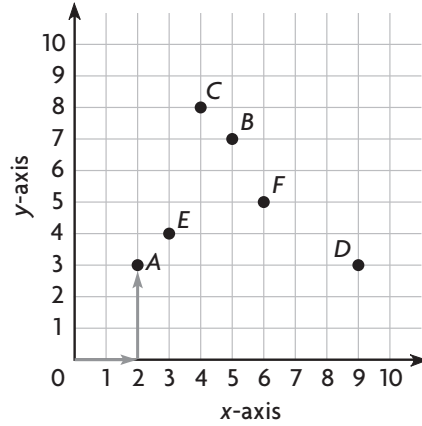
Use Coordinate Grid A to write an ordered pair for the given point.

- |                    |      |
|--------------------|------|
| 1. A <b>(2, 3)</b> | 2. B |
| 3. C               | 4. D |
| 5. E               | 6. F |



**COMMON CORE STANDARD—5.G.1**  
Graph points on the coordinate plane to solve real-world and mathematical problems.

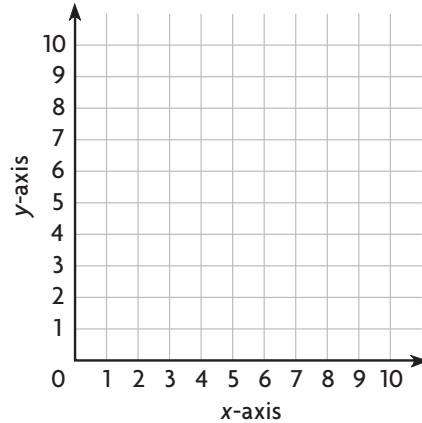
Coordinate Grid A



Plot and label the points on Coordinate Grid B.

- |             |             |
|-------------|-------------|
| 7. N(7, 3)  | 8. R(0, 4)  |
| 9. O(8, 7)  | 10. M(2, 1) |
| 11. P(5, 6) | 12. Q(1, 5) |

Coordinate Grid B



## Problem Solving



Use the map for 13–14.

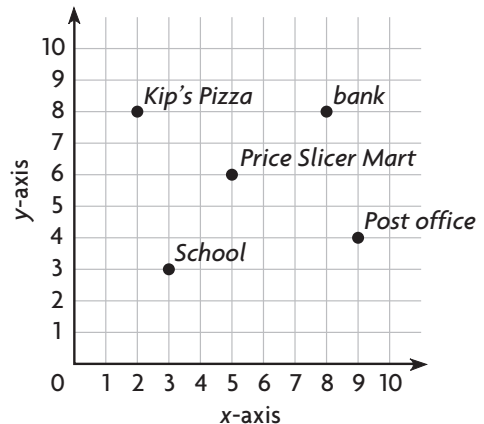
13. Which building is located at (5, 6)?

\_\_\_\_\_

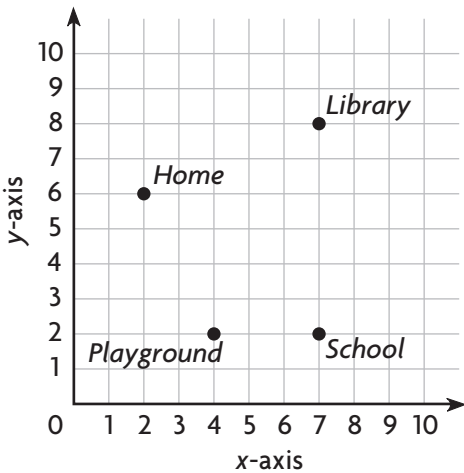
14. What is the distance between Kip's Pizza and the bank?

\_\_\_\_\_

Port Charlotte



## Lesson Check (5.G.1)



1. What ordered pair describes the location of the playground?

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2. What is the distance between the school and the library?

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## Spiral Review (5.NBT.1, 5.NBT.5, 5.NBT.6)

3. What is the value of the underlined digit?

45,769,331

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5. Harlow can bicycle at a rate of 18 miles per hour. How many hours would it take him to bicycle a stretch of road that is 450 miles long?

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4. Andrew charges \$18 for each lawn he mows. Suppose he mows 17 lawns per month. How much money will Andrew make per month?

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6. Molly uses 192 beads to make a bracelet and a necklace. It takes 5 times as many beads to make a necklace than it does to make a bracelet. How many beads are used to make the necklace?

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Name \_\_\_\_\_

## Graph Data



**COMMON CORE STANDARD—5.G.2**  
Graph points on the coordinate plane to solve real-world and mathematical problems.

Graph the data on the coordinate grid.

1.

Outdoor Temperature					
Hour	1	3	5	7	9
Temperature (°F)	61	65	71	75	77

a. Write the ordered pairs for each point.

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b. How would the ordered pairs be different if the outdoor temperature were recorded every hour for 4 consecutive hours?

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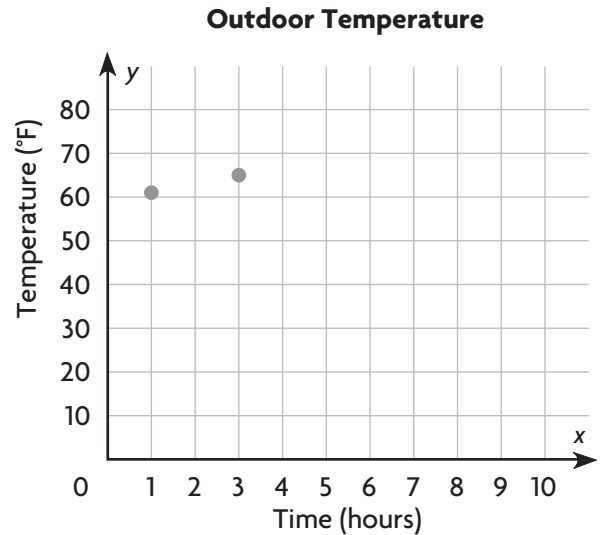
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## Problem Solving



2.

Windows Repaired					
Day	1	2	3	4	5
Total Number Repaired	14	30	45	63	79

a. Write the ordered pairs for each point.

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b. What does the ordered pair (2, 30) tell you about the number of windows repaired?

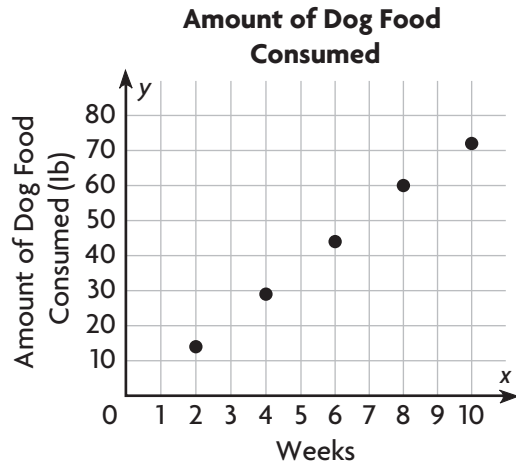
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## Lesson Check (5.G.2)



1. About how many weeks did it take for the dog to consume 45 pounds of food?

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2. By the end of Week 8, how much food had the dog consumed?

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## Spiral Review (5.OA.2, 5.NBT.6, 5.NF.2)

3. A restaurant chain ordered 3,940 pounds of rice in 20-pound bags. About how many 20-pound bags of rice did the chain order?
4. The population of Linton is 12 times as great as the population of Ellmore. The combined population of both towns is 9,646 people. What is the population of Linton?

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5. Timothy needs  $\frac{1}{2}$  cup of bread crumbs for a casserole and  $\frac{1}{3}$  cup of bread crumbs for the topping. How many cups of bread crumbs does Timothy need?
6. Jessie bought 3 T-shirts for \$6 each and 4 T-shirts for \$5 each. What expression can you use to describe what Jessie bought?

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Name \_\_\_\_\_

**Line Graphs**



**COMMON CORE STANDARDS—5.G.2**  
Graph points on the coordinate plane to solve real-world and mathematical problems.

Use the table for 1–5.

Hourly Temperature							
Time	10 A.M.	11 A.M.	12 noon	1 P.M.	2 P.M.	3 P.M.	4 P.M.
Temperature (°F)	8	11	16	27	31	38	41

1. Write the related number pairs for the hourly temperature as ordered pairs.

**(10, 8);**

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2. What scale would be appropriate to graph the data?

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3. What interval would be appropriate to graph the data?

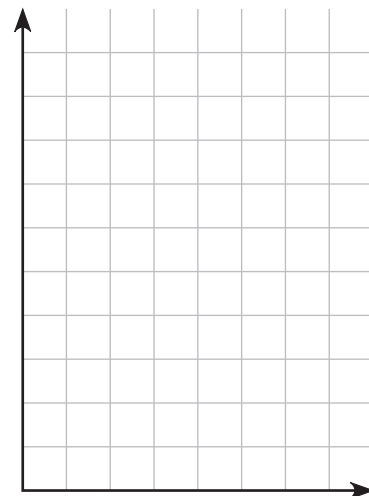
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4. Make a line graph of the data.

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5. Use the graph to find the difference in temperature between 11 A.M. and 1 P.M.

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**Problem Solving**



6. Between which two hours did the least change in temperature occur?

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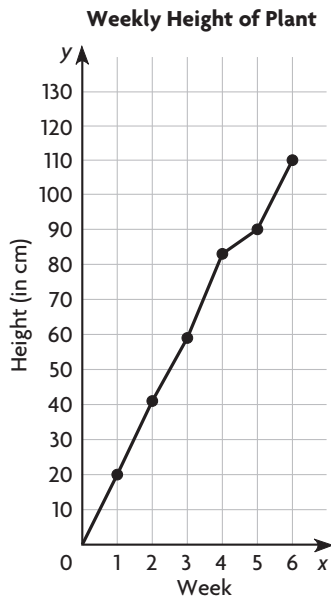


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7. What was the change in temperature between 12 noon and 4 P.M.?

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## Lesson Check (5.G.2)



1. How many centimeters did the plant grow in the first three weeks?

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2. Between which two weeks did the plant grow the least?

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## Spiral Review (5.OA.2, 5.NBT.6, 5.NF.6, 5.NF.7c)

3. Write an expression using the Distributive Property to find the product of  $7 \times 63$ .

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4. Ali multiplies 3 numbers using the expressions  $a \times (b \times c)$  and  $(a \times b) \times c$ . What property of multiplication does Ali use?

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5. A student athlete runs  $3\frac{1}{3}$  miles in 30 minutes. A professional runner can run  $1\frac{1}{4}$  times as far in 30 minutes. How far can the professional runner run in 30 minutes?

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6. A recipe for salad dressing calls for  $\frac{1}{4}$  cup of vinegar. You have 4 cups of vinegar. How many batches of salad dressing could you make with the vinegar?

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Name \_\_\_\_\_

## Numerical Patterns



**COMMON CORE STANDARD—5.OA.3**  
Analyze patterns and relationships.

Complete the rule that describes how one sequence is related to the other. Use the rule to find the unknown term.

1. Multiply the number of laps by 50 to find the number of yards.

**Think:** The number of yards is 50 times the number of laps.

<b>Swimmers</b>	1	2	3	4
<b>Number of Laps</b>	4	8	12	16
<b>Number of Yards</b>	200	400	600	<b>800</b>

2. Multiply the number of pounds by \_\_\_\_\_ to find total cost.

<b>Boxes</b>	1	2	3	4	6
<b>Number of Pounds</b>	3	6	9	12	18
<b>Total Cost (\$)</b>	12	24	36	48	

3. Multiply the number of hours by \_\_\_\_\_ to find the number of miles.

<b>Cars</b>	1	2	3	4
<b>Number of Hours</b>	2	4	6	8
<b>Number of Miles</b>	130	260	390	

4. Multiply the number of hours by \_\_\_\_\_ to find the amount earned.

<b>Days</b>	1	2	3	4	7
<b>Number of Hours</b>	8	16	24	32	56
<b>Amount Earned (\$)</b>	96	192	288	384	

## Problem Solving

5. A map's key shows that every 5 inches on the map represents 200 miles of actual distance. Suppose the distance between two cities on the map is 7 inches. What is the actual distance between the two cities? Write the rule you used to find the actual distance.

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6. To make each costume, Rachel uses 6 yards of material and 3 yards of trim. Suppose she uses a total of 48 yards of material to make several costumes. How many yards of trim does she use? Write the rule you used to find the number of yards of trim.

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## Lesson Check (5.OA.3)

Use the table below to answer questions 1 and 2.

Term Number	1	2	3	4	...	6
Sequence 1	4	8	12	16	...	24
Sequence 2	12	24	36	48	...	?

1. What rule could you write that relates Sequence 2 to Sequence 1?

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2. What is the unknown number in Sequence 2?

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## Spiral Review (5.OA.1, 5.NBT.1, 5.NF.2, 5.NF.3)

3. What is the value of the following expression?

$$40 - (3 + 2) \times 6$$

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4. What is the value of the digit 9 in the number 597,184?

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5. What is the best estimate for the sum of  $\frac{3}{8}$  and  $\frac{1}{12}$ ?

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6. Terry uses 3 cups of pumpkin seeds to decorate the tops of 12 loaves of bread. She puts an equal amount of seeds on each loaf. How many cups of pumpkin seeds does she put on each loaf of bread?

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Name \_\_\_\_\_

**Problem Solving • Find a Rule**



**COMMON CORE STANDARD—5.OA.3**  
Analyze patterns and relationships.

**Write a rule and complete the table. Then answer the question.**

1. Faye buys 15 T-shirts, which are on sale for \$3 each. How much money does Faye spend?

<b>Number of T-Shirts</b>	1	2	3	5	10	15
<b>Amount Spent (\$)</b>	3	6	9			

Possible rule:

**Multiply the number**  
**of T-shirts by 3.**

The total amount Faye spends is **\$45**.

2. The Gilman family joins a fitness center. They pay \$35 per month. By the 12th month, how much money will the Gilman family have spent?

<b>Number of Months</b>	1	2	3	4	5	12
<b>Total Amount of Money Spent (\$)</b>	35	70				

Possible rule:

\_\_\_\_\_  
\_\_\_\_\_

The Gilman family will have spent \_\_\_\_\_.

3. Hettie is stacking paper cups. Each stack of 15 cups is 6 inches high. What is the total height of 10 stacks of cups?

<b>Number of stacks</b>	1	2	3	10
<b>Height (in.)</b>	6	12	18	

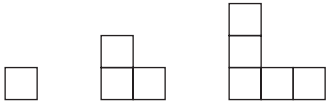
Possible rule:

\_\_\_\_\_  
\_\_\_\_\_

The total height of 10 stacks is \_\_\_\_\_.

## Lesson Check (5.OA.3)

1. How many squares are needed to make the eighth figure in the pattern?




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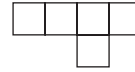
2. What expression could describe the number of squares in the next figure in the pattern, Figure 4?

Figure 1



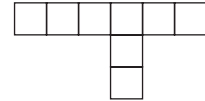
2 squares

Figure 2



5 squares

Figure 3



8 squares

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## Spiral Review (5.OA.3, 5.NBT.2, 5.NBT.7, 5.NF.2)

3. Talia stores her collection of stickers equally in 7 sticker albums. If she has 567 stickers, how many stickers are in each album?

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4. Ms. Angelino made 2 pans of lasagna and cut each pan into twelfths. Her family ate  $1\frac{1}{12}$  pans of lasagna for dinner. How many pans of lasagna were left?

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5. What is the next number in this pattern?

0.54, 0.6, 0.66, 0.72, ■, ...

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6. How do you write 100 as a power of 10?

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Name \_\_\_\_\_

## Graph and Analyze Relationships

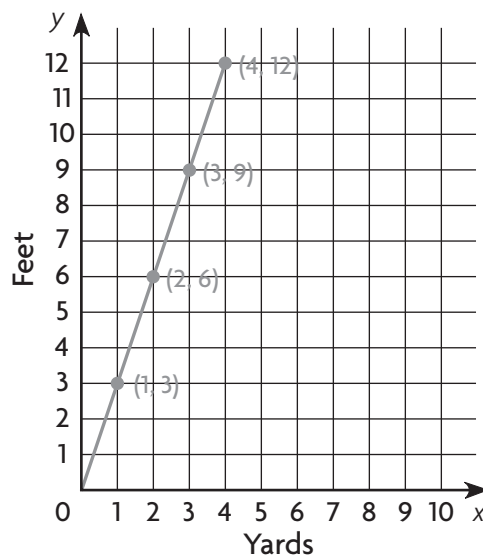


COMMON CORE STANDARD—5.OA.3,  
5.G.2 Analyze patterns and relationships.

Graph and label the related number pairs as ordered pairs.  
Then complete and use the rule to find the unknown term.

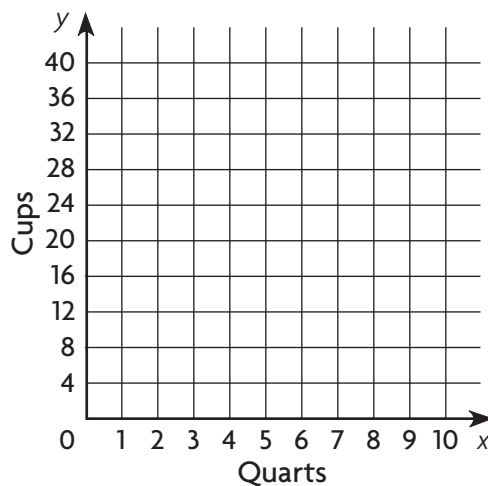
1. Multiply the number of yards by 3 to find the number of feet.

<b>Yards</b>	1	2	3	4
<b>Feet</b>	3	6	9	<b>12</b>



2. Multiply the number of quarts by \_\_\_\_\_ to find the number of cups that measure the same amount.

<b>Quarts</b>	1	2	3	4	5
<b>Cups</b>	4	8	12	16	



### Problem Solving



3. How can you use the graph for Exercise 2 to find how many cups are in 9 quarts?

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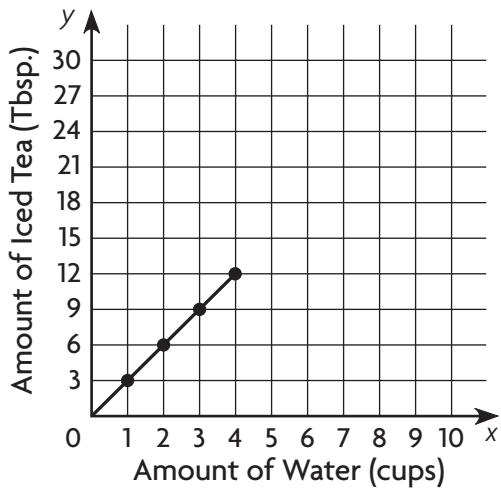
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4. How many cups are equal to 9 quarts? \_\_\_\_\_

## Lesson Check (5.OA.3)

Use the data to complete the graph. Then answer the questions.

Paola is making a pitcher of iced tea. For each cup of water, she uses 3 tablespoons of powdered iced tea mix.



1. Fill in the missing number to complete the following rule.

Multiply the amount of iced tea mix by \_\_\_\_\_ to get the amount of water.

2. Suppose Paola uses 18 tablespoons of iced tea mix. How many cups of water does she need to use?

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## Spiral Review (5.NBT.2, 5.NBT.6, 5.NBT.7)

3. A biologist counted 10,000 migrating monarch butterflies. How do you express 10,000 as a power of 10?

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4. Find the quotient. Write your answer using a decimal and round to the nearest hundredth.

$$8,426 \div 82$$

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5. What is  $54.38 + 29.7$ ?

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6. On a certain day, \$1 is worth 30.23 Russian rubles. Omar has \$75. How many rubles will he get in exchange?

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