

Dear Family,

During the next few weeks, our math class will be learning about multiplication. We will learn how addition is related to multiplication and how to multiply with the factors 0 and 1.

You can expect to see homework that provides practice with multiplication.

Here is a sample of how your child will be shown the relationship between addition and multiplication.

## Vocabulary

**array** A set of objects in rows and columns

**equal groups** Groups that have the same number of objects

**factor** A number that is multiplied by another number to find a product

**multiply** When you multiply, you combine equal groups to find how many in all.

**product** The answer in a multiplication problem



### MODEL Relate Addition and Multiplication

This is how we will add or multiply to solve problems about equal groups.

#### Add.

##### STEP 1

Draw 2 counters in each rectangle to show 4 equal groups.



##### STEP 2

Write an addition sentence to find how many counters in all.

$$2 + 2 + 2 + 2 = 8$$

#### Multiply.

##### STEP 1

Draw 2 counters in each rectangle to show 4 equal groups.



##### STEP 2

Write a multiplication sentence to find how many counters in all.

$$4 \times 2 = 8$$

### Tips

#### Skip Counting

Skip counting is another way to count equal groups to find how many in all. For example, there are 4 groups with 2 counters in each group, so skip counting by 2s can be used: 2, 4, 6, 8. There are 8 counters in all.

## Activity

Help your child arrange 3 equal groups of like objects (no more than 10 objects in each group). Then have him or her write an addition sentence and a multiplication sentence to find how many objects in all.

# Carta para la casa

Querida Familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos sobre la multiplicación. Aprenderemos cómo la suma se relaciona con la multiplicación y a multiplicar por los factores 0 y 1.

Llevaré a la casa tareas que sirven para practicar la multiplicación.

Este es un ejemplo de la manera como aprenderemos la relación entre la suma y la multiplicación.

## Vocabulario

**arreglo** Un grupo de objetos organizados en filas y columnas

**grupos iguales** Grupos que tienen la misma cantidad de objetos

**factor** Un número que se multiplica por otro número para hallar el producto

**multiplicar** Cuando uno multiplica, combina grupos iguales para hallar cuántos hay en total.

**producto** El resultado de una multiplicación

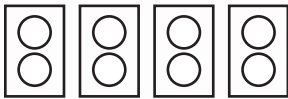
### **MODELO** Relacionar la suma y multiplicación

Así es como vamos a sumar o multiplicar para resolver problemas de grupos iguales.

#### Suma.

##### PASO 1

Dibuja 2 fichas en cada rectángulo para mostrar 4 grupos iguales.



##### PASO 2

Escribe un enunciado de suma para hallar cuántas fichas hay en total.

$$2 + 2 + 2 + 2 = 8$$

#### Multiplica.

##### PASO 1

Dibuja 2 fichas en cada rectángulo para mostrar 4 grupos iguales.



##### PASO 2

Escribe un enunciado de multiplicación para hallar cuántas fichas hay en total.

$$4 \times 2 = 8$$

#### Pistas

##### Contar salteado

Contar salteado es otra manera de contar grupos iguales para hallar cuánto hay en total. Por ejemplo, hay 4 grupos con 2 fichas cada uno, por lo tanto puedes contar salteado de 2 en 2: 2, 4, 6, 8. Hay 8 fichas en total.

## Actividad

Ayude a su hijo a formar 3 grupos iguales de objetos parecidos (no más de 10 objetos en cada grupo). Después, pídale que escriba un enunciado de suma y uno de multiplicación para hallar cuántos objetos hay en total.

Name \_\_\_\_\_

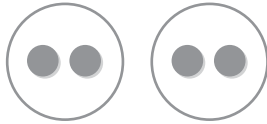
## Count Equal Groups



**COMMON CORE STANDARD—3.OA.1**  
Represent and solve problems involving multiplication and division.

Draw equal groups. Skip count to find how many.

1. 2 groups of 2 4

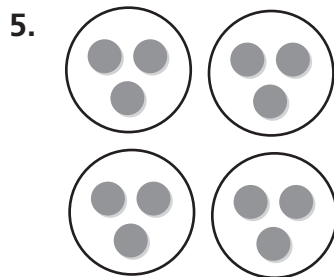


2. 3 groups of 6 \_\_\_\_\_

3. 5 groups of 3 \_\_\_\_\_

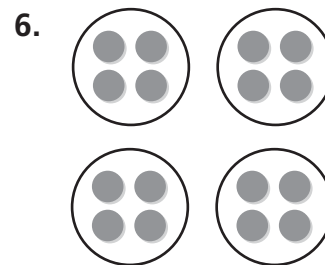
4. 4 groups of 5 \_\_\_\_\_

Count equal groups to find how many.



\_\_\_\_\_ groups of \_\_\_\_\_

\_\_\_\_\_ in all



\_\_\_\_\_ groups of \_\_\_\_\_

\_\_\_\_\_ in all

## Problem Solving

7. Marcia puts 2 slices of cheese on each sandwich. She makes 4 cheese sandwiches. How many slices of cheese does Marcia use in all?

\_\_\_\_\_

8. Tomas works in a cafeteria kitchen. He puts 3 cherry tomatoes on each of 5 salads. How many tomatoes does he use?

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## Lesson Check (3.OA.1)

1. Jen makes 3 bracelets. Each bracelet has 3 beads. How many beads does Jen use?



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2. Ian has 5 cards to mail. Each card needs 2 stamps. How many stamps does Ian need?



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## Spiral Review (3.NBT.1, 3.NBT.2)

3. There were 384 people at a play on Friday night. There were 512 people at the play on Saturday night. Estimate the total number of people who attended the play on both nights.

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4. Walking the Dog Pet Store has 438 leashes in stock. They sell 79 leashes during a one-day sale. How many leashes are left in stock after the sale?

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5. The Lakeside Tour bus traveled 490 miles on Saturday and 225 miles on Sunday. About how many more miles did it travel on Saturday?

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6. During one week at Jackson School, 210 students buy milk and 196 students buy juice. How many drinks are sold that week?

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Name \_\_\_\_\_

**Relate Addition and Multiplication**



**COMMON CORE STANDARD—3.OA.1**  
*Represent and solve problems involving multiplication and division.*

**Draw a quick picture to show the equal groups. Then write related addition and multiplication sentences.**

1. 3 groups of 5

$$\underline{5} + \underline{5} + \underline{5} = \underline{15}$$

$$\underline{3} \times \underline{5} = \underline{15}$$



2. 3 groups of 4

$$\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

3. 4 groups of 3

$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

4. 5 groups of 2

$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

**Complete. Write a multiplication sentence.**

5.  $7 + 7 + 7 = \underline{\quad}$   
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

6.  $3 + 3 + 3 = \underline{\quad}$   
 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

**Problem Solving**



7. There are 6 jars of pickles in a box. Ed has 3 boxes of pickles. How many jars of pickles does he have? Write a multiplication sentence to find the answer.

$$\underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ jars}$$

8. Each day, Jani rides her bike 5 miles. How many miles does Jani ride in 4 days? Write a multiplication sentence to find the answer.

$$\underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ miles}$$

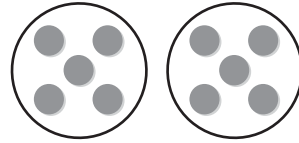
## Lesson Check (3.OA.1)

1. What is another way to show

$$3 + 3 + 3 + 3 + 3 + 3?$$

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2. Use the model. How many counters are there?



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## Spiral Review (3.NBT.1, 3.NBT.2, 3.MD.4)

3. A school gave 884 pencils to students on the first day of school. What is 884 rounded to the nearest hundred?

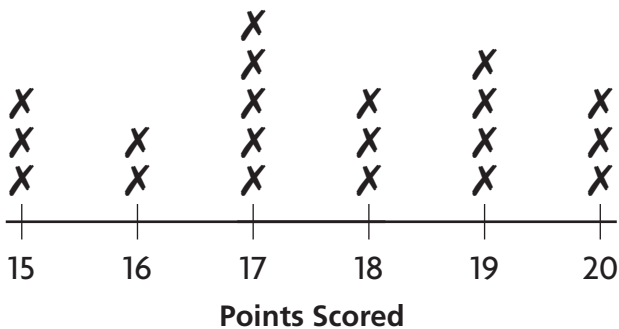
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4. Find the difference.

$$\begin{array}{r} 632 \\ - 274 \\ \hline \end{array}$$

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5. The line plot below shows how many points Trevor scored in 20 games.



In how many games did Trevor score 18 or fewer points?

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6. Darrien read 97 pages last week. Evan read 84 pages last week. How many pages did the boys read?

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Name \_\_\_\_\_

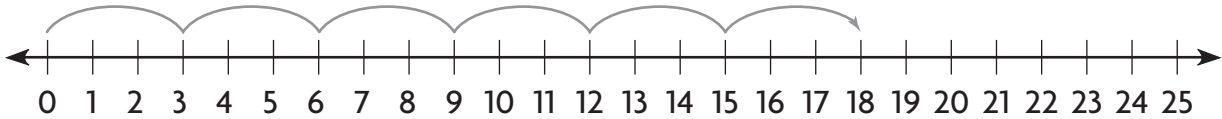
## Skip Count on a Number Line



**COMMON CORE STANDARD—3.OA.3**  
Represent and solve problems involving multiplication and division.

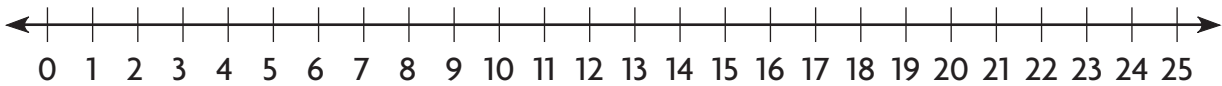
Draw jumps on the number line to show equal groups. Find the product.

1. 6 groups of 3



$$6 \times 3 = \underline{18}$$

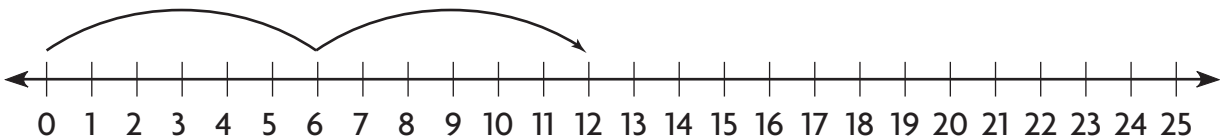
2. 3 groups of 5



$$3 \times 5 = \underline{\quad}$$

Write the multiplication sentence the number line shows.

3. 2 groups of 6



$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

### Problem Solving

4. Allie is baking muffins for students in her class. There are 6 muffins in each baking tray. She bakes 5 trays of muffins. How many muffins is she baking?

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5. A snack package has 4 cheese sticks. How many cheese sticks are in 4 packages?

\_\_\_\_\_

## Lesson Check (3.OA.3)

1. Louise skip counts by 4 on a number line to find  $5 \times 4$ . How many jumps should she draw on the number line?
2. Theo needs 4 boards that are each 3 feet long to make bookshelves. How many feet of boards does he need altogether?

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## Spiral Review (3.NBT.1, 3.MD.3)

3. Estimate the sum.

$$\begin{array}{r} 518 \\ +251 \\ \hline \end{array}$$

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4. Which number would you put in a frequency table to show  $\text{||||} \text{ ||}$  ?
5. A manager at a shoe store received an order for 346 pairs of shoes. What is 346 rounded to the nearest hundred?
6. Toby is making a picture graph. Each picture of a book is equal to 2 books he has read. The row for Month 1 has 3 pictures of books. How many books did Toby read during Month 1?

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Name \_\_\_\_\_

**Problem Solving • Model Multiplication**

**Draw a diagram to solve each problem.**



**COMMON CORE STANDARD—3.OA.8**  
*Solve problems involving the four operations, and identify and explain patterns in arithmetic.*

1. Robert put some toy blocks into 3 rows. There are 5 blocks in each row. How many blocks are there?

**15 blocks**

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2. Mr. Fernandez is putting tiles on his kitchen floor. There are 2 rows with 9 tiles in each row. How many tiles are there?

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3. In Jillian’s garden, there are 3 rows of carrots, 2 rows of string beans, and 1 row of peas. There are 8 plants in each row. How many plants are there in the garden?

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4. In Sorhab’s classroom, there are 3 rows with 7 desks in each row. How many desks are there in the classroom?

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5. Maya visits the movie rental store. On one wall, there are 6 DVDs on each of 5 shelves. On another wall, there are 4 DVDs on each of 4 shelves. How many DVDs are there on the shelves?

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6. The media center at Josh’s school has a computer area. The first 4 rows have 6 computers each. The fifth row has 4 computers. How many computers are there?

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## Lesson Check (3.OA.8)

1. There are 5 shelves of video games in a video store. There are 6 video games on each shelf. How many video games are there on the shelves?
2. Ken watches a marching band. He sees 2 rows of flute players. Six people are in each row. He sees 8 trombone players. How many flute players and trombone players does Ken see?

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## Spiral Review (3.NBT.1, 3.NBT.2, 3.MD.3)

3. What is the sum of 438 and 382?
4. Estimate the sum.

$$\begin{array}{r} 622 \\ + 84 \\ \hline \end{array}$$

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5. Francine uses 167 silver balloons and 182 gold balloons for her store party. How many silver and gold balloons does Francine use?
6. Yoshi is making a picture graph. Each picture of a soccer ball stands for two goals he scored for his team. The row for January has 9 soccer balls. How many goals did Yoshi score during January?

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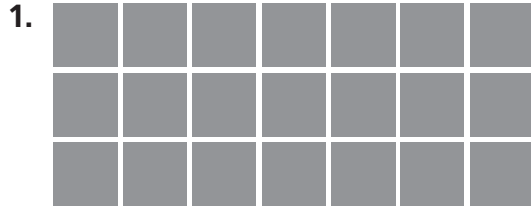
Name \_\_\_\_\_

## Model with Arrays



**COMMON CORE STANDARD—3.OA.3**  
Represent and solve problems involving multiplication and division.

Write a multiplication sentence for the array.



$3 \times 7 = \underline{21}$



$2 \times 5 = \underline{\quad}$

Draw an array to find the product.

3.  $4 \times 2 = \underline{\quad}$

4.  $4 \times 4 = \underline{\quad}$

5.  $3 \times 2 = \underline{\quad}$

6.  $2 \times 8 = \underline{\quad}$

### Problem Solving



7. Lenny is moving tables in the school cafeteria. He places all the tables in a  $7 \times 4$  array. How many tables are in the cafeteria?

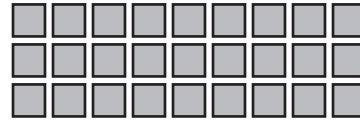
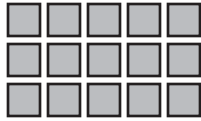
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8. Ms. DiMeo directs the school choir. She has the singers stand in 3 rows. There are 8 singers in each row. How many singers are there?

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## Lesson Check (3.OA.3)

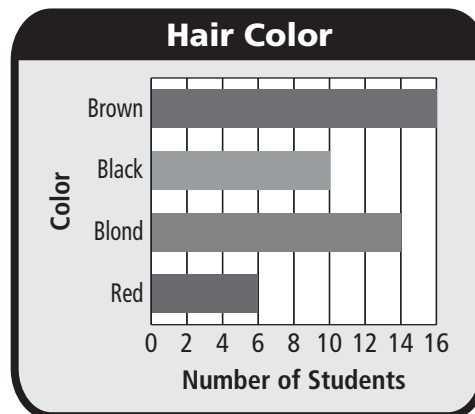
1. What multiplication sentence does this array show?
2. What multiplication sentence does this array show?



## Spiral Review (3.NBT.1, 3.NBT.2, 3.MD.3)

3. Use the table to find who traveled 700 miles farther than Paul during summer vacation.
4. Use the bar graph to find what hair color most students have.

Summer Vacations	
Name	Distance in Miles
Paul	233
Andrew	380
Bonnie	790
Tara	933
Susan	853



5. Spencer orders 235 cans of tomatoes to make salsa for the festival. What is 235 rounded to the nearest ten?
6. Which bar would be the longest on a bar graph of the data?

Favorite Pizza Topping	
Topping	Votes
Cheese	5
Pepperoni	4
Vegetable	1
Sausage	3

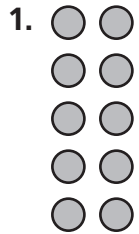
Name \_\_\_\_\_

**Commutative Property of Multiplication**

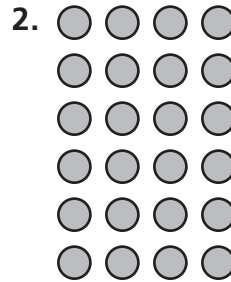


**COMMON CORE STANDARD—3.OA.5**  
*Understand properties of multiplication and the relationship between multiplication and division.*

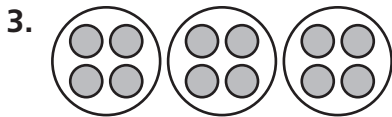
**Write a multiplication sentence for the model. Then use the Commutative Property of Multiplication to write a related multiplication sentence.**



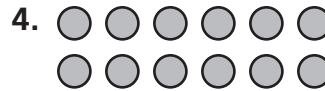
$$\begin{array}{r} \underline{5} \times \underline{2} = \underline{10} \\ \underline{2} \times \underline{5} = \underline{10} \end{array}$$



$$\begin{array}{r} \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \end{array}$$



$$\begin{array}{r} \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \end{array}$$



$$\begin{array}{r} \underline{\quad} \times \underline{\quad} = \underline{\quad} \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \end{array}$$

**Problem Solving**



5. A garden store sells trays of plants. Each tray holds 2 rows of 8 plants. How many plants are in one tray?

\_\_\_\_\_

6. Jeff collects toy cars. They are displayed in a case that has 4 rows. There are 6 cars in each row. How many cars does Jeff have?

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## Lesson Check (3.OA.5)

1. Write a sentence that shows the Commutative Property of Multiplication.

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2. What factor makes the number sentence true?

$$7 \times 4 = \square \times 7$$

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## Spiral Review (3.NBT.1, 3.NBT.2, 3.MD.3)

3. Ms. Williams drove 149 miles on Thursday and 159 miles on Friday. About how many miles did she drive altogether?

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4. Inez has 699 pennies and 198 nickels. Estimate how many more pennies than nickels she has.

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5. This year, the parade had 127 floats. That was 34 fewer floats than last year. How many floats were in the parade last year?

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6. Jeremy made a tally table to record how his friends voted for their favorite pet. His table shows  $\text{III IIII II}$  next to Dog. How many friends voted for dog?

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Name \_\_\_\_\_

**Multiply with 1 and 0**



**COMMON CORE STANDARD—3.OA.5**  
*Understand properties of multiplication and the relationship between multiplication and division.*

**Find the product.**

1.  $1 \times 4 = \underline{4}$

2.  $0 \times 8 = \underline{\quad}$

3.  $0 \times 4 = \underline{\quad}$

4.  $1 \times 6 = \underline{\quad}$

5.  $3 \times 0 = \underline{\quad}$

6.  $0 \times 9 = \underline{\quad}$

7.  $8 \times 1 = \underline{\quad}$

8.  $1 \times 2 = \underline{\quad}$

9.  $0 \times 6 = \underline{\quad}$

10.  $4 \times 0 = \underline{\quad}$

11.  $7 \times 1 = \underline{\quad}$

12.  $1 \times 5 = \underline{\quad}$

13.  $3 \times 1 = \underline{\quad}$

14.  $0 \times 7 = \underline{\quad}$

15.  $1 \times 9 = \underline{\quad}$

16.  $5 \times 0 = \underline{\quad}$

17.  $10 \times 1 = \underline{\quad}$

18.  $2 \times 0 = \underline{\quad}$

19.  $5 \times 1 = \underline{\quad}$

20.  $1 \times 0 = \underline{\quad}$

21.  $0 \times 0 = \underline{\quad}$

22.  $1 \times 3 = \underline{\quad}$

23.  $9 \times 0 = \underline{\quad}$

24.  $1 \times 1 = \underline{\quad}$

**Problem Solving**



25. Peter is in the school play. His teacher gave 1 copy of the play to each of 6 students. How many copies of the play did the teacher hand out?

\_\_\_\_\_

26. There are 4 egg cartons on the table. There are 0 eggs in each carton. How many eggs are there in all?

\_\_\_\_\_

## Lesson Check (3.OA.5)

1. There are 0 bicycles in each bicycle rack. If there are 8 bicycle racks, how many bicycles are there in the rack?

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2. What is the product?

$$1 \times 0 = \underline{\quad}$$

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## Spiral Review (3.NBT.2, 3.OA.3, 3.MD.3)

3. Mr. Ellis drove 197 miles on Monday and 168 miles on Tuesday. How many miles did he drive?

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4. What multiplication sentence does the array show?



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## Use the bar graph for 5–6.

5. How many cars were washed on Friday and Saturday combined?

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6. How many more cars were washed on Saturday than on Sunday?

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