Chapter 4

School-Home Letter

Dear Family,

During the next few weeks, our math class will be learning how to multiply with the factors 2, 3, 4, 5, 6, 7, 8, 9, and 10.

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

Here is a sample of how your child will be taught to multiply with 3 as a factor.

Vocabulary

Associative Property of Multiplication The property that states that when the grouping of factors is changed, the product remains the same.

Distributive Property The property that states that multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products.

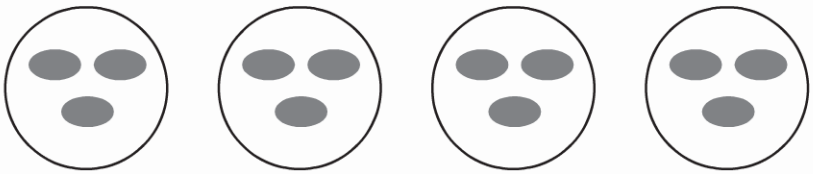
multiple A number that is the product of two counting numbers

MODEL Multiply with 3

This is one way we will be multiplying with 3 to solve problems.

Teddy made a face on 1 cookie, using 3 raisins. How many raisins will he need for 4 cookies?

Drawing a picture is a way to solve this problem.



3, 6, 9, 12

Skip count by 3s to find the number of raisins in all.

3, 6, 9, 12

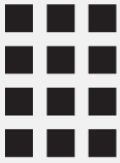
4 groups of 3 is 12. $4 \times 3 = 12$

So, he will need 12 raisins for 4 cookies.

Tips

Another Way to Solve Multiplication Problems

Making an array is another way to solve the problem. Use tiles to make an array of 4 rows with 3 tiles in each row.



Count all the tiles.

4 groups of 3 is 12.

$4 \times 3 = 12$

Activity

Have your child draw more groups of 3 for 5, 6, 7, 8, and 9 cookies. Then have your child answer questions such as "How many raisins would be on 8 cookies? What do you multiply to find out?"

Capítulo 4

Carta para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos cómo multiplicar con los factores 2, 3, 4, 5, 6, 7, 8, 9 y 10.

Llevaré a la casa tareas que sirven para practicar las operaciones de multiplicación y sus estrategias.

Este es un ejemplo de la manera como aprenderemos a multiplicar por el factor 3.

Vocabulario

Propiedad asociativa de la multiplicación La propiedad que establece que cuando se cambia la agrupación de los factores, el producto no cambia

Propiedad distributiva La propiedad que establece que multiplicar una suma por un número es lo mismo que multiplicar cada sumando por ese número y luego sumar los productos

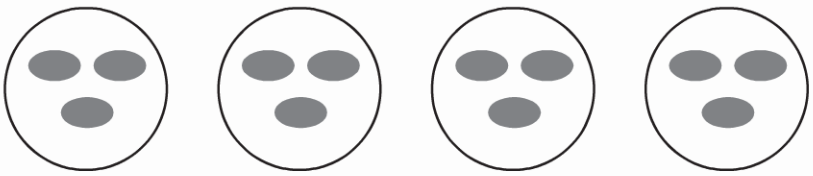
múltiplo Un número que es el producto de dos números naturales distintos de cero

MODELO Multiplicar por 3

Esta es una manera de multiplicar por 3 para resolver problemas.

Teddy hizo una cara en 1 galleta, con 3 pasas.
¿Cuántas pasas necesitará para hacer caras en 4 galletas?

Una manera de resolver el problema es hacer un dibujo.



3, 6, 9, 12

Cuenta salteado de 3 en 3 para hallar el número total de pasas.

3, 6, 9, 12

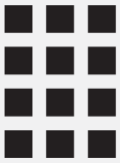
4 grupos de 3 son 12. $4 \times 3 = 12$

Por tanto, Teddy necesitará 12 pasas para 4 galletas.

Pistas

Otra manera de resolver problemas de multiplicación

Hacer una matriz es otra manera de resolver el problema. Usa fichas para hacer una matriz de 4 filas con 3 fichas en cada fila.



Cuenta todas las fichas.

4 grupos de 3 son 12.
$4 \times 3 = 12$

Actividad

Pida a su hijo o hija que dibuje más grupos de 3 para 5, 6, 7, 8 y 9 galletas. Después, pídale que conteste preguntas como "¿Cuántas pasas se necesitan para hacer 8 galletas? ¿Qué factores debes multiplicar para hallar la respuesta?".

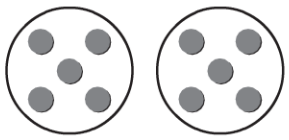
Name _____

Multiply with 2 and 4

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

Write a multiplication sentence for the model.

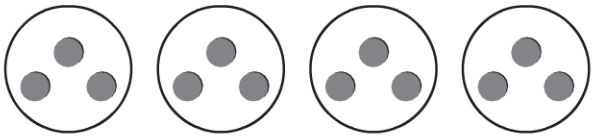
1.



Think: There are 2 groups of 5 counters.

2 × 5 = 10

2.



4 × 3 = 12

Find the product.

3. 2 × 6 = **12**

4. 4 × 8 = **32**

5. 2 × 3 = **6**

6. 4 × 6 = **24**

7. 4 × 4 = **16**

8. 2 × 7 = **14**

9. 4 × 5 = **20**

10. 2 × 4 = **8**

Problem Solving REAL WORLD

11. On Monday, Steven read 9 pages of his new book. To finish the first chapter on Tuesday, he needs to read double the number of pages he read on Monday. How many pages does he need to read on Tuesday?

18 pages

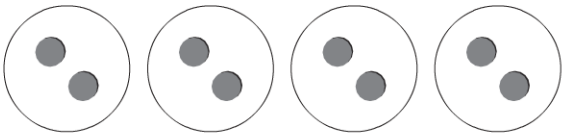
12. Courtney's school is having a family game night. Each table has 4 players. There are 7 tables in all. How many players are at the game night?

28 players

TEST PREP

Lesson Check (CC.3.OA.3)

1. Which multiplication sentence matches the model?



Ⓐ $3 \times 2 = 6$
Ⓒ $4 \times 4 = 16$
● $4 \times 2 = 8$
Ⓓ $4 \times 8 = 32$

2. Find the product.

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

Ⓐ 10
Ⓑ 14
● 16
Ⓓ 18

Spiral Review (CC.3.NBT.2, CC.3.MD.3)

3. Sean made a picture graph to show his friends' favorite colors. This is the key for the graph.
Each ● = 2 friends.
How many friends does ● ● ● ● stand for? (Lesson 2.3)

Ⓐ 4
● 8
Ⓒ 20
Ⓓ 40

4. The table shows the lengths of some walking trails.

Walking Trails	
Name	Length (in feet)
Mountain Trail	844
Lake Trail	792
Harmony Trail	528

How many feet longer is Mountain Trail than Harmony Trail? (Lesson 1.10)

Ⓐ 216 feet
● 316 feet
Ⓑ 264 feet
Ⓓ 528 feet

5. Find the sum. (Lesson 1.7)

$$\begin{array}{r} 527 \\ +\ 154 \\ \hline \end{array}$$

Ⓐ 373
Ⓑ 581
Ⓒ 671
● 681

6. A bar graph shows that sports books received 9 votes. If the scale is 0 to 20 by twos, where should the bar end for the sports books? (Lesson 2.5)

● between 8 and 10
Ⓑ on 10
Ⓒ on 8
Ⓓ between 6 and 8

Name _____

Multiply with 5 and 10

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

Find the product.

1. $5 \times 7 =$ 35
2. $5 \times 1 =$ 5
3. $2 \times 10 =$ 20
4. 40 $= 8 \times 5$
5. $1 \times 10 =$ 10
6. 20 $= 4 \times 5$
7. $5 \times 10 =$ 50
8. $7 \times 5 =$ 35
9. 25 $= 5 \times 5$
10. $5 \times 8 =$ 40
11. 45 $= 5 \times 9$
12. $10 \times 0 =$ 0

13. $5 \times 6 = 30$
14. $10 \times 7 = 70$
15. $5 \times 3 = 15$
16. $10 \times 4 = 40$
17. $5 \times 0 = 0$
18. $10 \times 8 = 80$
19. $5 \times 2 = 10$
20. $10 \times 6 = 60$

Problem Solving REAL WORLD

21. Ginger takes 10 nickels to buy some pencils at the school store. How many cents does Ginger have to spend?

50 cents

22. The gym at Evergreen School has three basketball courts. There are 5 players on each of the courts. How many players are there in all?

15 players

TEST PREP

Lesson Check (CC.3.OA.3)

1. Mrs. Hinely grows roses. There are 6 roses on each of her 10 rose bushes. How many roses in all are on Mrs. Hinely's rose bushes?

Ⓐ 16 ● 60
Ⓑ 54 Ⓓ 66

2. Find the product.

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

Ⓐ 8 Ⓒ 35
Ⓑ 16 ● 40

Spiral Review (CC.3.OA.9, CC.3.NBT.1, CC.3.MD.3)

3. Mr. Miller's class voted on where to go for a field trip. Use the picture graph to find which choice had the most votes. (Lesson 2.2)

Field Trip Choices	
Science Center	★★
Aquarium	★★★½
Zoo	★★★★
Museum	★★

Key: Each ★ = 2 votes.

Ⓐ Science Center ● Zoo
Ⓑ Aquarium Ⓓ Museum

4. Zack made this table for his survey.

Favorite Juice	
Flavor	Votes
Grape	16
Orange	10
Berry	9
Apple	12

How many students were surveyed in all? (Lesson 2.6)

Ⓐ 38
Ⓑ 43
● 47
Ⓓ 49

5. Which of the following numbers is even? (Lesson 1.1)

25, 28, 31, 37

Ⓐ 25 Ⓒ 31
● 28 Ⓓ 37

6. Estimate the sum. (Lesson 1.3)

$$\begin{array}{r} 479 \\ +\ 89 \\ \hline \end{array}$$

Ⓐ 300 Ⓒ 500
Ⓑ 400 ● 600

Name _____

Multiply with 3 and 6

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

Find the product.

1. $6 \times 4 =$ 24
2. $3 \times 7 =$ 21
3. 12 $= 2 \times 6$
4. 15 $= 3 \times 5$

Think: You can use doubles.
$3 \times 4 = 12$
$12 + 12 = 24$

5. $1 \times 3 =$ 3
6. 48 $= 6 \times 8$
7. $3 \times 9 =$ 27
8. 36 $= 6 \times 6$

9.	10.	11.	12.
4 × 3 = 12	6 × 5 = 30	2 × 3 = 6	6 × 3 = 18

13.	14.	15.	16.
10 × 6 = 60	3 × 6 = 18	7 × 6 = 42	3 × 0 = 0

17.	18.	19.	20.
9 × 6 = 54	3 × 3 = 9	10 × 3 = 30	1 × 6 = 6

Problem Solving REAL WORLD

21. James got 3 hits in each of his baseball games. He has played 4 baseball games. How many hits has he had in all?

12 hits

22. Mrs. Burns is buying muffins. There are 6 muffins in each box. If she buys 5 boxes, how many muffins will she buy?

30 muffins

TEST PREP

Lesson Check (CC.3.OA.3)

1. Paco buys a carton of eggs. The carton has 2 rows of eggs. There are 6 eggs in each row. How many eggs are in the carton?

Ⓐ 8
Ⓒ 14
● 12
Ⓓ 24

2. Find the product.

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

Ⓐ 18
● 27
Ⓑ 24
Ⓓ 36

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

3. Find the difference. (Lesson 1.10)

$$\begin{array}{r} 568 \\ -\ 283 \\ \hline \end{array}$$

● 285
Ⓒ 385
Ⓑ 325
Ⓓ 851

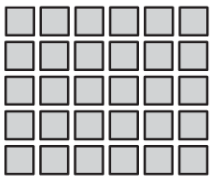
4. Dwight made double the number of baskets in the second half of the basketball game than in the first half. He made 5 baskets in the first half. How many baskets did he make in the second half? (Lesson 4.1)

Ⓐ 7
● 10
Ⓑ 9
Ⓓ 20

5. In Jane's picture graph, the symbol ☺ represents two students. One row in the picture graph has 8 symbols. How many students does that represent? (Lesson 2.3)

Ⓐ 40
Ⓑ 32
Ⓒ 24
● 16

6. What multiplication sentence does this array show? (Lesson 3.5)



● $5 \times 6 = 30$
Ⓑ $6 \times 6 = 36$
Ⓒ $5 \times 5 = 25$
Ⓓ $1 \times 6 = 6$

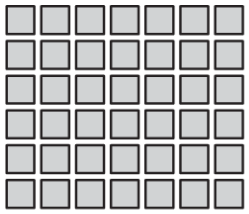
Name _____

Distributive Property

Possible answers are given.

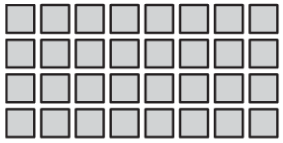
COMMON CORE STANDARD CC.3.OA.5
Understand properties of multiplication and the relationship between multiplication and division.

Write one way to break apart the array. Then find the product.

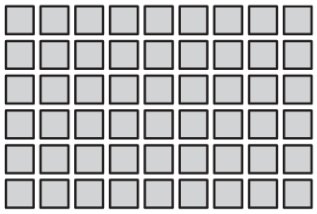
1. 

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

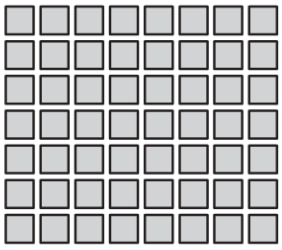
42

2. 

$(2 \times 8) + (2 \times 8)$ or $(4 \times 4) + (4 \times 4)$; 32

3. 

$(3 \times 9) + (3 \times 9)$ or $(6 \times 5) + (6 \times 4)$; 54

4. 

$(7 \times 4) + (7 \times 4)$ or $(7 \times 5) + (7 \times 3)$; 56

Problem Solving REAL WORLD

5. There are 2 rows of 8 chairs set up in the library for a puppet show. How many chairs are there in all? Use the Distributive Property to solve.

16 chairs

6. A marching band has 4 rows of trumpeters with 10 trumpeters in each row. How many trumpeters are in the marching band? Use the Distributive Property to solve.

40 trumpeters

TEST PREP

Lesson Check (CC.3.OA.5)

1. Which number sentence is an example of the Distributive Property?

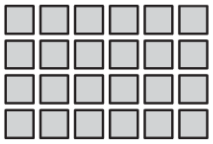
   Ⓐ $7 \times 6 = 6 \times 7$

   Ⓑ $7 \times (2 \times 3) = (7 \times 2) \times 3$

   ● $7 \times 6 = (7 \times 3) + (7 \times 3)$

   Ⓓ $7 + 6 = 7 + 3 + 3$

2. What is one way to break apart the array?



   ● $(2 \times 6) + (2 \times 6)$

   Ⓑ $(4 \times 2) + (4 \times 2)$

   Ⓒ $(4 \times 4) + (4 \times 4)$

   Ⓓ $(6 \times 3) + (6 \times 3)$

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

3. The school auditorium has 448 chairs set out for the third-grade performance. What is 448 rounded to the nearest ten? (Lesson 1.2)

   Ⓐ 500 ● 450

   Ⓑ 440 Ⓓ 400

4. Find the difference. (Lesson 1.11)

$$\begin{array}{r} 400 \\ -\ 296 \\ \hline \end{array}$$

   ● 104 Ⓒ 204

   Ⓑ 114 Ⓓ 296

5. There are 622 fruit snacks in one crate and 186 in another crate. How many fruit snacks are there in all? (Lesson 1.7)

$$\begin{array}{r} 622 \\ +\ 186 \\ \hline \end{array}$$

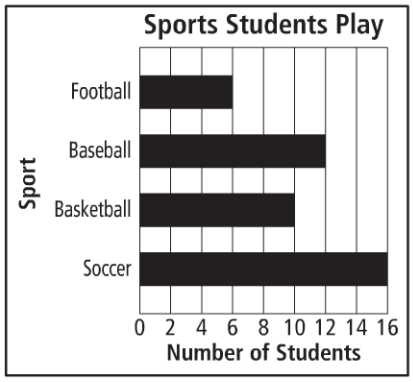
   Ⓐ 436

   Ⓑ 708

   Ⓒ 768

   ● 808

6. Which sport do 6 students play? (Lesson 2.4)



   ● Football Ⓒ Basketball

   Ⓑ Baseball Ⓓ Soccer

Name _____

Multiply with 7

COMMON CORE STANDARD CC.3.OA.7
Multiply and divide within 100.

Find the product.

1. $6 \times 7 =$ 42
2. 63 $= 7 \times 9$
3. 7 $= 1 \times 7$
4. $3 \times 7 =$ 21
5. $7 \times 7 =$ 49
6. 14 $= 2 \times 7$
7. $7 \times 8 =$ 56
8. 28 $= 4 \times 7$

9.	10.	11.	12.	13.
7 × 5 = 35	7 × 1 = 7	6 × 7 = 42	7 × 4 = 28	2 × 7 = 14

14.	15.	16.	17.	18.
10 × 7 = 70	3 × 7 = 21	7 × 9 = 63	8 × 7 = 56	7 × 0 = 0

Problem Solving REAL WORLD

19. Julie buys a pair of earrings for $7. Now she would like to buy the same earrings for 2 of her friends. How much will she spend for all 3 pairs of earrings?

$21

20. Owen and his family will go camping in 8 weeks. There are 7 days in 1 week. How many days are in 8 weeks?

56 days

TEST PREP

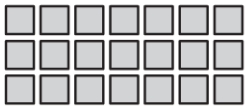
Lesson Check (CC.3.OA.7)

1. Find the product.

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

Ⓐ 54
● 56
Ⓒ 64
Ⓓ 66

2. What product does the array show?



Ⓐ 14
Ⓑ 17
● 21
Ⓓ 24

Spiral Review (CC.3.OA.3, CC.3.OA.9, CC.3.NBT.1, CC.3.MD.3)

3. Which statement is true about the numbers below? (Lesson 1.1)

6, 12, 18, 24, 30

Ⓐ All of the numbers are odd.
Ⓑ Some of the numbers are odd.
● All of the numbers are even.
Ⓓ Some of the numbers are even.

4. How many more people chose retriever than poodle? (Lesson 2.1)

Favorite Breed of Dog	
Dog	Number
Shepherd	58
Retriever	65
Poodle	26

Ⓐ 31
Ⓒ 41
● 39
Ⓓ 49

5. What is 94 rounded to the nearest ten? (Lesson 1.2)

● 90
Ⓑ 94
Ⓒ 95
Ⓓ 100

6. Jack has 5 craft sticks. He needs 4 times that number for a project. How many craft sticks does Jack need altogether? (Lesson 4.2)

Ⓐ 9
Ⓑ 16
● 20
Ⓓ 24

Name _____

Associative Property of Multiplication

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

Write another way to group the factors. Then find the product.

1. $(3 \times 2) \times 5$
   $3 \times (2 \times 5)$
   30

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

3. $2 \times (2 \times 8)$
   $(2 \times 2) \times 8$
   32

4. $9 \times (2 \times 1)$
   $(9 \times 2) \times 1$
   18

5. $2 \times (3 \times 6)$
   $(2 \times 3) \times 6$
   36

6. $(4 \times 2) \times 5$
   $4 \times (2 \times 5)$
   40

Possible groupings are given.

Use parentheses and multiplication properties. Then, find the product.

7. $(9 \times 1) \times 5 = 45$

8. $(3 \times 3) \times 2 = 18$

9. $(2 \times 4) \times 3 = 24$

10. $(5 \times 2) \times 3 = 30$

11. $7 \times (1 \times 5) = 35$

12. $8 \times (2 \times 3) = 48$

13. $7 \times (2 \times 3) = 42$

14. $4 \times (1 \times 3) = 12$

15. $10 \times (2 \times 4) = 80$

Problem Solving REAL WORLD

16. Beth and Maria are going to the county fair. Admission costs $4 per person for each day. They plan to go for 3 days. How much will the girls pay in all?
    $24

17. Randy's garden has 3 rows of carrots with 3 plants in each row. Next year he plans to plant 4 times the number of rows of 3 plants. How many plants will he have next year?
    36 plants

TEST PREP

Lesson Check (CC.3.OA.5)

1. There are 2 benches in each car of a train ride. Two people ride on each bench. If a train has 5 cars, how many people in all can be on a train?

Ⓐ 4
Ⓑ 9
Ⓒ 10
● 20

2. Crystal has 2 CDs in each box. She has 3 boxes on each of her 6 shelves. How many CDs does Crystal have in all?

Ⓐ 6
Ⓑ 12
Ⓒ 18
● 36

Spiral Review (CC.3.OA.3, CC.3.NBT.1, CC.3.NBT2, CC.MD.3)

3. Find the sum. (Lesson 1.7)

$$\begin{array}{r} 472 \\ +\ 186 \\ \hline \end{array}$$

● 658
Ⓑ 648
Ⓒ 558
Ⓓ 286

4. Trevor made a picture graph to show how many minutes each student biked last week. This is his key.

Each 🕐 = 10 minutes.

What does 🕐 🕐 🕐 stand for? (Lesson 2.2)

Ⓐ 2 minutes
Ⓑ 10 minutes
Ⓒ 20 minutes
● 25 minutes

5. Madison has 142 stickers in her collection. What is 142 rounded to the nearest ten? (Lesson 1.2)

Ⓐ 40
● 140
Ⓒ 150
Ⓓ 200

6. There are 5 pages of photos. Each page has 6 photos. How many photos are there in all? (Lesson 4.2)

Ⓐ 12
Ⓑ 20
Ⓒ 24
● 30

Name _____

Patterns on the Multiplication Table

ALGEBRA
Lesson 4.7

COMMON CORE STANDARD CC.3.OA.9
Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Is the product even or odd? Write *even* or *odd*.

1. $2 \times 7 =$ even

Think: Products with 2 as a factor are even.

2. $4 \times 6 =$ even

3. $8 \times 3 =$ even

4. $2 \times 3 =$ even

5. $9 \times 9 =$ odd

6. $5 \times 7 =$ odd

7. $6 \times 3 =$ even

Use the multiplication table. Describe a pattern you see.

Possible patterns are given.

8. in the column for 5

The ones digits repeat—0, 5; each number is 5 more than the number above it.

9. in the row for 10

Add 10; all the products are even; the ones digit is always 0.

10. in the rows for 3 and 6

The products of 6 are the products of 3 doubled.

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

Problem Solving REAL WORLD

11. Carl shades a row in the multiplication table. The products in the row are all even. The ones digits in the products repeat 0, 4, 8, 2, 6. What row does Carl shade?

the row for 4

12. Jenna says that no row or column contains products with only odd numbers. Do you agree? **Explain.**

Yes. Possible explanation: either the products are all even, or there is an even and odd number pattern.

TEST PREP

Lesson Check (CC.3.OA.9)

1. Which has an even product?

Ⓐ 1×9
Ⓑ 3×3
Ⓒ 5×7
● 4×9

2. Which describes this pattern?

10, 15, 20, 25, 30

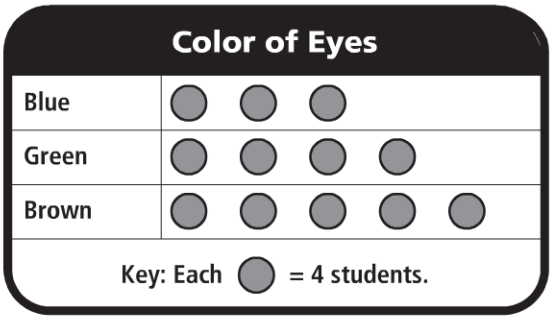
● Even and then odd
Ⓑ Add 10.
Ⓒ Subtract 5.
Ⓓ Multiply by 5.

Spiral Review (CC.3.OA.3, CC.3.OA.5, CC.3.NBT.2, CC.3.MD.3)

3. Lexi has 2 cans of tennis balls. There are 3 tennis balls in each can. She buys 2 more cans. How many tennis balls does she now have in all? (Lesson 4.6)

● 12
Ⓑ 9
Ⓒ 7
Ⓓ 6

4. Use the picture graph.



How many students have green eyes? (Lesson 2.2)

Ⓐ 4
Ⓒ 12
Ⓑ 8
● 16

5. Sasha bought 3 boxes of pencils. If each box has 6 pencils, how many pencils did Sasha buy in all? (Lesson 4.3)

Ⓐ 9
● 18
Ⓑ 12
Ⓓ 24

6. Find the sum. (Lesson 1.7)

$$\begin{array}{r} 219 \\ +\ 763 \\ \hline \end{array}$$

Ⓐ 992
Ⓒ 976
● 982
Ⓓ 972

Name _____

Multiply with 8

COMMON CORE STANDARD CC.3.OA.7
Multiply and divide within 100.

Find the product.

1. $8 \times 10 =$ 80
2. $8 \times 8 =$ 64
3. $8 \times 5 =$ 40
4. $3 \times 8 =$ 24
5. 32 $= 4 \times 8$
6. $8 \times 7 =$ 56
7. $6 \times 8 =$ 48
8. 72 $= 9 \times 8$

9.	10.	11.	12.	13.
8 × 2 = 16	6 × 8 = 48	8 × 7 = 56	0 × 8 = 0	8 × 5 = 40

14.	15.	16.	17.	18.
8 × 8 = 64	9 × 8 = 72	8 × 3 = 24	8 × 1 = 8	4 × 8 = 32

Problem Solving REAL WORLD

19. There are 6 teams in the basketball league. Each team has 8 players. How many players are there in all?
48 players

20. Lynn has 4 stacks of quarters. There are 8 quarters in each stack. How many quarters does Lynn have in all?
32 quarters

21. Tomas is packing 7 baskets for a fair. He is placing 8 apples in each basket. How many apples are there in all?
56 apples

22. There are 10 pencils in each box. If Jenna buys 8 boxes, how many pencils will she buy?
80 pencils

TEST PREP

Lesson Check (CC.3.OA.7)

1. Find the product.

$5 \times 8 = \blacksquare$

Ⓐ 30
Ⓑ 32
Ⓒ 42
● 40

2. There are 7 tarantulas in the spider exhibit at the zoo. Each tarantula has 8 legs. How many legs do the 7 tarantulas have in all?

Ⓐ 15
Ⓑ 49
● 56
Ⓓ 63

Spiral Review (CC.3.OA.3, CC.3.NB.1, CC.3.NBT.2, CC.3.MD.3)

3. Find the difference. (Lesson1.9)

$$\begin{array}{r} 652 \\ -\ 99 \\ \hline \end{array}$$

Ⓐ 99
Ⓑ 552
● 553
Ⓓ 653

4. The school library received an order of 232 new books. What is 232 rounded to the nearest ten? (Lesson 1.8)

Ⓐ 200
● 230
Ⓒ 240
Ⓓ 300

5. Sam's picture graph shows that 8 students chose pizza as their favorite lunch. This is the key for the graph.

Each ☺ = 2 students.

How many ☺ should be next to pizza on Sam's graph? (Lesson 2.2)

Ⓐ 2
● 4
Ⓒ 6
Ⓓ 8

6. Tashia buys 5 packages of oranges. Each package has 4 oranges. How many oranges in all does Tashia buy? (Lesson 4.2)

Ⓐ 1
Ⓑ 9
● 20
Ⓓ 25

Name _____

Multiply with 9

COMMON CORE STANDARD CC.3.OA.7
Multiply and divide within 100.

Find the product.

1. $10 \times 9 =$ 90
2. $2 \times 9 =$ 18
3. $9 \times 4 =$ 36
4. $0 \times 9 =$ 0
5. $1 \times 9 =$ 9
6. $8 \times 9 =$ 72
7. $9 \times 5 =$ 45
8. $6 \times 9 =$ 54

9. $9 \times 4 = 36$
10. $5 \times 9 = 45$
11. $9 \times 7 = 63$
12. $2 \times 9 = 18$
13. $9 \times 9 = 81$
14. $10 \times 9 = 90$
15. $3 \times 9 = 27$
16. $9 \times 8 = 72$
17. $6 \times 9 = 54$
18. $9 \times 1 = 9$

Problem Solving REAL WORLD

19. There are 9 positions on the softball team. Three people are trying out for each position. How many people in all are trying out?

27 people

20. Carlos bought a book for $9. Now he would like to buy 4 other books for the same price. How much will he have to pay in all for the other 4 books?

$36

TEST PREP

Lesson Check (CC.3.OA.7)

1. Find the product.

$7 \times 9 = \blacksquare$

● 63

Ⓑ 56

Ⓒ 45

Ⓓ 36

2. Clare buys 5 tickets for the high school musical. Each ticket costs $9. How much do the tickets cost in all?

Ⓐ $36

● $45

Ⓑ $40

Ⓓ $52

Spiral Review (CC.3.OA.3, CC.3.OA.7, CC.3.MD.3)

3. The table shows the hair color of girls in Kim's class. How many girls have brown hair? (Lesson 2.1)

Kim's Class	
Hair Color	Number of Girls
Brown	𝍸 |
Black	|||
Blonde	||||
Red	|

Ⓐ 1

Ⓒ 4

Ⓑ 3

● 6

4. Miles picked up 9 shirts from the dry cleaners. It costs $4 to clean each shirt. How much did Miles spend to have all the shirts cleaned? (Lesson 4.1)

Ⓐ $13

Ⓑ $22

● $36

Ⓓ $45

5. In a picture graph, each picture of a baseball is equal to 5 games won by a team. The row for the Falcons has 7 baseballs. How many games have the Falcons won? (Lesson 2.2)

Ⓐ 40

Ⓒ 12

● 35

Ⓓ 7

6. An array has 8 rows with 4 circles in each row. How many circles are in the array? (Lesson 4.8)

Ⓐ 12

● 32

Ⓑ 24

Ⓓ 36

Name _____

Problem Solving • Multiplication

PROBLEM SOLVING
Lesson 4.10

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

Solve.

1. Henry has a new album for his baseball cards. He uses pages that hold 6 cards and pages that hold 3 cards. If Henry has 36 cards, how many different ways can he put them in his album?

Henry can put the cards in his album __5__ ways.

Pages with 6 Cards	1	2	3	4	5
Pages with 3 Cards	10	8	6	4	2
Total Cards	36	36	36	36	36

2. Ms. Hernandez has 17 tomato plants that she wants to plant in rows. She will put 2 plants in some rows and 1 plant in the others. How many different ways can she plant the tomato plants? Make a table to solve.

Possible table is shown.

Rows with 2 Plants	8	7	6	5	4	3	2	1
Rows with 1 Plant	1	3	5	7	9	11	13	15
Total Plants	17	17	17	17	17	17	17	17

Ms. Hernandez can plant the tomato plants __8__ ways.

3. Bianca has a total of 25¢. She has some nickels and pennies. How many different combinations of nickels and pennies could Bianca have? Make a table to solve.

Possible table is shown.

Number of Nickels	1	2	3	4
Number of Pennies	20	15	10	5
Total Value	25¢	25¢	25¢	25¢

Bianca could have __4__ combinations of 25¢.

TEST PREP

Lesson Check (CC.3.OA.8)

1. The table shows different ways that Cameron can display his 12 model cars on shelves. How many shelves will display 2 cars if 8 of the shelves each display 1 car?

Shelves with 1 Car	2	4	6	8	10
Shelves with 2 Cars	5	4	3	■	■
Total cars	12	12	12	12	12

Ⓐ 1
● 2
Ⓒ 3
Ⓓ 4

Spiral Review (CC.3.OA.3, CC.3.NBT.1, CC.3.NBT.2, CC.3.MD.3)

2. Find the sum. (Lesson 1.6)

$$\begin{array}{r} 317 \\ +\ 151 \\ \hline \end{array}$$

Ⓐ 166
Ⓑ 268
● 468
Ⓓ 568

3. The school cafeteria has an order for 238 hot lunches. What is 238 rounded to the nearest ten? (Lesson 1.2)

Ⓐ 300
● 240
Ⓒ 230
Ⓓ 200

4. Tyler made a picture graph to show students' favorite colors. This is the key for his graph.

Each ● = 3 votes.

If 12 students voted for green, how many ● should there be in the green row of the graph? (Lesson 2.2)

Ⓐ 3
● 4
Ⓒ 9
Ⓓ 12

5. There are 5 bikes in each bike rack at the school. There are 6 bike racks. How many bikes in all are in the bike racks? (Lesson 4.2)

Ⓐ 11
Ⓑ 24
Ⓒ 25
● 30

Name _____

COMMON CORE STANDARDS CC.3.OA.3, CC.3.OA.5, CC.3.OA.7, CC.3.OA.8, CC.3.OA.9

Chapter 4 Extra Practice

Lessons 4.1 - 4.2

Find the product.

1. $4 \times 2 =$ 8
2. $8 \times 5 =$ 40
3. $10 \times 7 =$ 70
4. $2 \times 9 =$ 18

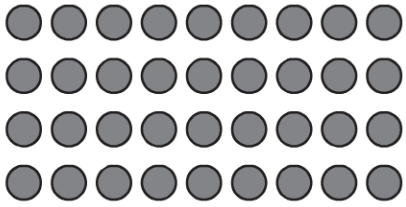
5. $6 \times 10 =$ 60
6. $5 \times 7 =$ 35
7. $2 \times 10 =$ 20
8. $4 \times 5 =$ 20

Lessons 4.3 - 4.5

Find the product.

1. $6 \times 2 =$ 12
2. $3 \times 9 =$ 27
3. $7 \times 3 =$ 21
4. $8 \times 6 =$ 48

Write one way to break apart the array. Then find the product.

5. 

Possible answers are given.

(4 × 6) + (4 × 3) or (4 × 5) + (4 × 4); 36

Find the product.

6. $5 \times 7 =$ 35
7. $2 \times 6 =$ 12
8. $4 \times 7 =$ 28
9. $8 \times 3 =$ 24

10. Abby has 5 stacks of cards with 7 cards in each stack. How many cards does she have in all?

35 cards

11. Noah has 3 sisters. He gave 6 balloons to each sister. How many balloons did Noah give away in all?

18 balloons