Chapter 5

School-Home Letter

Dear Family,

During the next few weeks, our math class will be learning more about multiplication. We will learn strategies for finding an unknown factor and for multiplying with multiples of 10.

You can expect to see homework that provides practice with strategies for multiplying with multiples of 10.

Here is a sample of how your child will be taught to use a number line to multiply.

Vocabulary

equation A number sentence that uses the equal sign to show that two amounts are equal

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

multiple A number that is the product of two counting numbers

product The answer to a multiplication problem

MODEL **Use a number line to find 3×50.**

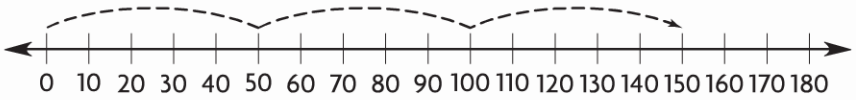
Think: $50 = 5$ tens

STEP 1

Draw a number line and write the labels for multiples of 10.

STEP 2

Draw jumps on the number line to show 3 groups of 5 tens.



So, $3 \times 50 = 150$.

Tips

Using Place Value to Multiply

Using a multiplication fact and place value is another way to multiply by a multiple of 10. To multiply 6×70, use the basic fact $6 \times 7 = 42$. Think: 6×7 tens $= 42$ tens, or 420.

Activity

Help your child draw and use models to multiply with multiples of 10. Ask your child to solve problems such as, "There are 6 chocolate chips on one cookie. How do you multiply to find the number of chocolate chips on 20 cookies?"

Capítulo 5

Carta para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos más sobre la multiplicación. Aprenderemos estrategias para hallar un factor desconocido y para multiplicar por múltiplos de 10.

Llevaré a casa tareas para practicar estrategias para multiplicar con múltiplos de 10.

Este es un ejemplo de cómo usaremos una recta numérica para multiplicar.

Vocabulario

ecuación Una expresión numérica que muestra que dos cantidades son iguales

factor Un número que se multiplica por otro número para hallar un producto

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

producto El resultado en un problema de multiplicación

MODELO Usar una recta numérica para hallar 3×50

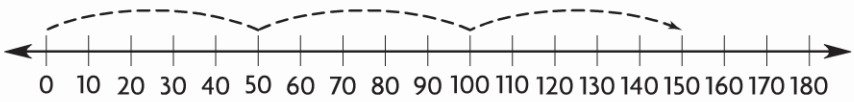
Piensa: $50 = 5$ decenas

PASO 1

Traza una recta numérica y escribe los rótulos para los múltiplos de 10.

PASO 2

Dibuja saltos en la recta numérica para mostrar 3 grupos de 5 decenas.



Por tanto, $3 \times 50 = 150$.

Pistas

Usar el valor posicional para multiplicar

Otra forma de multiplicar por un múltiplo de 10 es usar una operación de multiplicación y el valor posicional. Para multiplicar 6×70, usa la operación básica $6 \times 7 = 42$. Piensa: 6×7 decenas $= 42$ decenas, o 420.

Actividad

Ayude a su hijo/a a dibujar y usar modelos para multiplicar con múltiplos de 10. Pida a su hijo/a que resuelva problemas como "Hay 6 chispas de chocolate en una galleta. ¿Cómo multiplicas para hallar el número de chispas de chocolate que hay en 20 galletas?"

Name _____

Describe Patterns

ALGEBRA
Lesson 5.1

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

Possible descriptions are given.

Describe a pattern for the table. Then complete the table.

1.

Pans	1	2	3	4	5
Muffins	6	12	18	24	30

Add 6 muffins for each pan; Multiply the number of pans by 6.

2.

Wagons	2	3	4	5	6
Wheels	8	12	16	20	24

Add 4 wheels for each wagon; Multiply the number of wagons by 4.

3.

Vases	Flowers
2	14
3	21
4	28
5	35
6	42

Add 7 flowers for each vase; Multiply the number of vases by 7.

4.

Spiders	Legs
1	8
2	16
3	24
4	32
5	40

Add 8 legs for each spider; Multiply the number of spiders by 8.

Problem Solving REAL WORLD

5. Caleb buys 5 cartons of yogurt. Each carton has 8 yogurt cups. How many yogurt cups does Caleb buy?

40 cups

6. Libby bought 4 packages of pencils. Each package has 6 pencils. How many pencils did Libby buy?

24 pencils

TEST PREP

Lesson Check (CC.3.OA.9)

1. Which of the following describes a pattern in the table?

Tables	1	2	3	4	5
Chairs	5	10	15	20	25

Ⓐ Multiply by 3. Ⓒ Add 1.
● Multiply by 5. Ⓓ Add 4.

2. Which number completes this table?

Butterflies	3	4	5	6	7
Wings	12	16	20	■	28

Ⓐ 30 ● 24
Ⓑ 26 Ⓓ 22

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

3. Jennilee buys 7 packs of crayons. There are 6 crayons in each pack. How many crayons does Jennilee buy in all? (Lesson 4.3)

Ⓐ 13
Ⓑ 36
● 42
Ⓓ 48

4. Maverick has 5 books of circus tickets. Each book has 5 tickets. How many tickets does Maverick have in all? (Lesson 4.2)

Ⓐ 10
Ⓑ 15
Ⓒ 20
● 25

5. Bailey walked his dog 2 times each day for 9 days. How many times did Bailey walk his dog in all? (Lesson 4.9)

Ⓐ 9
Ⓑ 11
● 18
Ⓓ 27

6. Drew's Tree Company delivers pear trees in groups of 4. Yesterday, the company delivered 8 groups of pear trees. How many pear trees were delivered in all? (Lesson 4.8)

Ⓐ 12
Ⓑ 16
Ⓒ 24
● 32

Name _____

Find Unknown Factors

ALGEBRA
Lesson 5.2

COMMON CORE STANDARD CC.3.OA.4
Represent and solve problems involving multiplication and division.

Find the unknown factor.

1. $n \times 3 = 12$

Think: How many groups of 3 equal 12?

$n =$ 4

2. $s \times 8 = 64$

$s =$ 8

3. $21 = 7 \times n$

$n =$ 3

4. $y \times 2 = 18$

$y =$ 9

5. $5 \times p = 10$

$p =$ 2

6. $56 = 8 \times t$

$t =$ 7

7. $m \times 4 = 28$

$m =$ 7

8. ★ $\times 1 = 9$

★ $=$ 9

9. $18 = 6 \times r$

$r =$ 3

10. $u \times 5 = 30$

$u =$ 6

11. $4 \times$ ■ $= 24$

■ $=$ 6

12. $w \times 7 = 35$

$w =$ 5

13. $b \times 6 = 54$

$b =$ 9

14. $5 \times$ ▲ $= 40$

▲ $=$ 8

15. $30 = d \times 3$

$d =$ 10

16. $7 \times k = 42$

$k =$ 6

Problem Solving REAL WORLD

17. Carmen spent $42 for 6 hats. How much did each hat cost?

$7

18. Mark has a baking tray with 24 cupcakes. The cupcakes are arranged in 4 equal rows. How many cupcakes are in each row?

6 cupcakes

TEST PREP

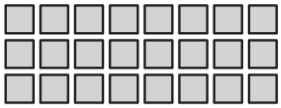
Lesson Check (CC.3.OA.4)

1. What is the unknown factor?

$b \times 7 = 56$

Ⓐ 6
Ⓑ 7
● 8
Ⓓ 9

2. What is the unknown factor shown by this array?



$3 \times \blacksquare = 24$

Ⓐ 3
Ⓑ 6
● 8
Ⓓ 9

Spiral Review (CC.3.OA.3, CC.3.OA.5)

3. Which is an example of the Commutative Property of Multiplication? (Lesson 3.6)

Ⓐ $6 + 4 = 4 + 6$
● $4 \times 6 = 6 \times 4$
Ⓒ $4 \times 3 = 4 + 8$
Ⓓ $3 \times 6 = 9 \times 2$

4. Find the product. (Lesson 4.6)

$5 \times (4 \times 2)$

Ⓐ 13
Ⓑ 22
● 40
Ⓓ 80

5. Which number sentence is an example of the Distributive Property? (Lesson 4.4)

● $4 \times 7 = (4 \times 3) + (4 \times 4)$
Ⓑ $4 \times 7 = 7 \times 4$
Ⓒ $4 \times 7 = 28$
Ⓓ $7 \times 4 = 15 + 13$

6. In a group of 10 boys, each boy had 2 hats. How many hats did they have in all? (Lesson 4.2)

Ⓐ 5
Ⓑ 12
● 20
Ⓓ 40

Name _____

Problem Solving • Use the Distributive Property

PROBLEM SOLVING
Lesson 5.3

COMMON CORE STANDARD CC.3.NBT.3
Use place value understanding and properties of operations to perform multi-digit arithmetic.

Read each problem and solve.

1. Each time a student turns in a perfect spelling test, Ms. Ricks puts an achievement square on the bulletin board. There are 6 rows of squares on the bulletin board. Each row has 30 squares. How many perfect spelling tests have been turned in?

   Think: $6 \times 30 = 6 \times (10 + 10 + 10)$

   $= 60 + 60 + 60 = 180$

   180 spelling tests

2. Norma practices violin for 50 minutes every day. How many minutes does Norma practice violin in 7 days?

   350 minutes

3. A kitchen designer is creating a new backsplash for the wall behind a kitchen sink. The backsplash will have 5 rows of tiles. Each row will have 20 tiles. How many tiles are needed for the entire backsplash?

   100 tiles

4. A bowling alley keeps shoes in rows of cubbyholes. There are 9 rows of cubbyholes, with 20 cubbyholes in each row. If there is a pair of shoes in every cubbyhole, how many pairs of shoes are there?

   180 pairs of shoes

5. The third-grade students are traveling to the science museum in 8 buses. There are 40 students on each bus. How many students are going to the museum?

   320 students

TEST PREP

Lesson Check (CC.3.NBT.3)

1. Each snack pack holds 20 crackers. How many crackers in all are there in 4 snack packs?

   Ⓐ 60
   ● 80
   Ⓒ 100
   Ⓓ 800

2. A machine makes 70 springs each hour. How many springs will the machine make in 8 hours?

   Ⓐ 500
   Ⓑ 520
   Ⓒ 540
   ● 560

Spiral Review (CC.3.OA.1, CC.3.NBT.1, CC.3.MD.4)

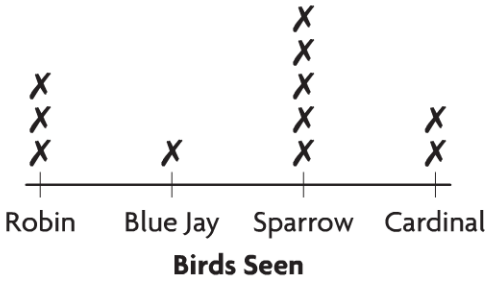
3. Lila read 142 pages on Friday and 168 pages on Saturday. Which is the best estimate of how many pages Lila read on Friday and Saturday combined? (Lesson 1.3)

   Ⓐ 100
   Ⓑ 200
   ● 300
   Ⓓ 400

4. Jessica wrote $6 + 6 + 6 + 6$ on the board. Which is another way to show $6 + 6 + 6 + 6$? (Lesson 3.2)

   Ⓐ 4×4
   ● 4×6
   Ⓒ $4 \times 4 \times 6$
   Ⓓ 6×6

Use the line plot for 5–6.



5. Eliot made a line plot to record the number of birds he saw at his bird feeder. How many more sparrows than blue jays did he see? (Lesson 2.7)

   Ⓐ 2
   Ⓑ 3
   ● 4
   Ⓓ 5

6. How many robins and cardinals combined did Eliot see? (Lesson 2.7)

   Ⓐ 2
   Ⓑ 3
   Ⓒ 4
   ● 5

Name _____

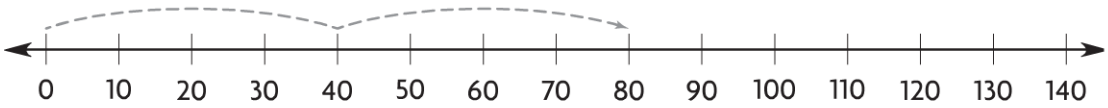
Multiplication Strategies with Multiples of 10

COMMON CORE STANDARD CC.3.NBT.3

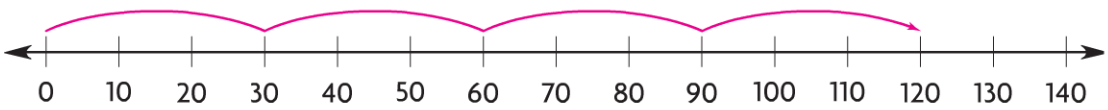
Use place value understanding and properties of operations to perform multi-digit arithmetic.

Use a number line to find the product.

1. $2 \times 40 =$ 80



2. $4 \times 30 =$ 120



Use place value to find the product.

3. $5 \times 70 = 5 \times$ 7 tens
$=$ 35 tens $=$ 350

4. $60 \times 4 =$ 6 tens $\times 4$
$=$ 24 tens $=$ 240

5. $7 \times 30 = 7 \times$ 3 tens
$=$ 21 tens $=$ 210

6. $90 \times 3 =$ 9 tens $\times 3$
$=$ 27 tens $=$ 270

Problem Solving REAL WORLD

7. One exhibit at the aquarium has 5 fish tanks. Each fish tank holds 50 gallons of water. How much water do the 5 tanks hold in all?

250 gallons

8. In another aquarium display, there are 40 fish in each of 7 large tanks. How many fish are in the display in all?

280 fish

TEST PREP

Lesson Check (CC.3.NBT.3)

1. Each bag of pattern blocks contains 50 blocks. To make a class pattern, the teacher combines 4 bags of blocks. How many pattern blocks are there in all?

   Ⓐ 20 Ⓒ 240
   ● 200 Ⓓ 250

2. A deli received 8 blocks of cheese. Each block of cheese weighs 60 ounces. What is the total weight of the cheeses?

   Ⓐ 420 ounces ● 480 ounces
   Ⓑ 460 ounces Ⓓ 560 ounces

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

3. Alan and Betty collected cans for recycling. Alan collected 154 cans. Betty collected 215 cans. How many cans did they collect in all? (Lesson 1.6)

   ● 369 Ⓒ 469
   Ⓑ 379 Ⓓ 479

4. The third graders collected 754 cans. The fourth graders collected 592 cans. Which is the best estimate of how many more cans the third graders collected? (Lesson 1.8)

   Ⓐ 50 ● 200
   Ⓑ 100 Ⓓ 300

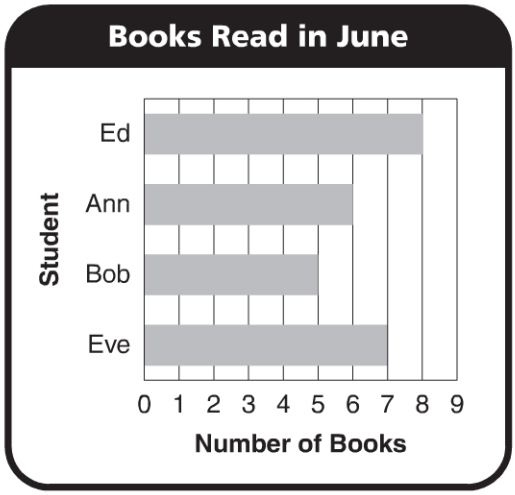
Use the bar graph for 5–6.

5. How many more books did Ed read than Bob? (Lesson 2.4)

   Ⓐ 2 Ⓒ 4
   ● 3 Ⓓ 5

6. How many books in all did the four students read in June? (Lesson 2.4)

   Ⓐ 22 ● 26
   Ⓑ 24 Ⓓ 36



Name _____

Multiply Multiples of 10 by 1-Digit Numbers

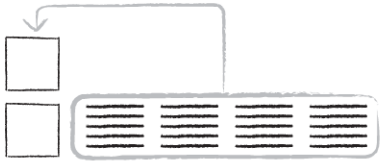
COMMON CORE STANDARD CC.3.NBT.3

Use place value understanding and properties of operations to perform multi-digit arithmetic.

Check students' drawings.

Find the product. Use base-ten blocks or draw a quick picture.

1. $4 \times 50 =$ 200



2. $60 \times 3 =$ 180

3. 300 $= 60 \times 5$

Find the product.

4. 30×8 = 240

5. 50×2 = 100

6. 60×7 = 420

7. 70×4 = 280

8. $6 \times 90 =$ 540

9. $9 \times 70 =$ 630

10. $8 \times 90 =$ 720

11. 480 $= 6 \times 80$

Problem Solving REAL WORLD

12. Each model car in a set costs $4. There are 30 different model cars in the set. How much would it cost to buy all the model cars in the set?

$120

13. Amanda exercises for 50 minutes each day. How many minutes will she exercise in 7 days?

350 minutes

TEST PREP

Lesson Check (CC.3.NBT.3)

1. Each shelf in one section of the library holds 30 books. There are 9 shelves in that section. How many books will these shelves hold?

   Ⓐ 220
   Ⓑ 260
   ● 270
   Ⓓ 280

2. One can of juice mix makes 60 ounces of juice. How many ounces of juice can be made from 6 cans of juice mix?

   Ⓐ 300 ounces
   ● 360 ounces
   Ⓒ 390 ounces
   Ⓓ 600 ounces

Spiral Review (CC.3.OA.3, CC.3.OA.5, CC.3.OA.8)

3. Sue bought 7 cans of tennis balls. There are 3 balls in each can. How many balls did Sue buy? (Lesson 4.3)

   Ⓐ 10
   ● 21
   Ⓒ 28
   Ⓓ 37

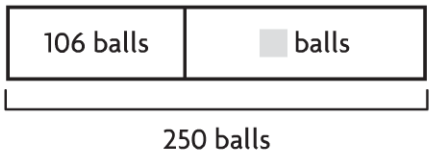
4. Which is an example of the Commutative Property of Multiplication? (Lesson 3.6)

   Ⓐ $3 + 4 = 4 + 3$
   Ⓑ $5 \times 0 = 0$
   Ⓒ $1 \times 7 = 7$
   ● $3 \times 4 = 4 \times 3$

5. Lyn drew this bar model to solve a problem. Which operation should she use to find the unknown number? (Lesson 1.12)

   ● addition
   Ⓑ division
   Ⓒ multiplication
   Ⓓ subtraction

6. Joe drew this bar model to find the unknown number of balls. Which is the correct answer? (Lesson 1.12)



   Ⓐ 356
   Ⓑ 256
   ● 144
   Ⓓ 124

Name _____

COMMON CORE STANDARDS CC.3.OA.4, CC.3.OA.9, CC.3.NBT.3

Chapter 5 Extra Practice

Lesson 5.1

Possible descriptions are given.

Describe a pattern for the table. Then complete the table.

1.

Teams	2	3	4	5	6
Players	12	18	24	30	36

Add 6 players for each team; Multiply the number of teams by 6.

2.

Tables	4	5	6	7	8
Chairs	16	20	24	28	32

Add 4 chairs for each table; Multiply the number of tables by 4.

Lesson 5.2

Find the unknown factor.

1. $72 = 9 \times t$

   $t =$ 8

2. $4 \times ★ = 28$

   $★ =$ 7

3. $b \times 5 = 30$

   $b =$ 6

4. $d \times 3 = 24$

   $d =$ 8

5. $48 = 8 \times p$

   $p =$ 6

6. $6 \times ▲ = 24$

   $▲ =$ 4

7. $56 = 7 \times ■$

   $■ =$ 8

8. $2 \times g = 20$

   $g =$ 10

9. $h \times 7 = 35$

   $h =$ 5

10. $9 = 9 \times a$

    $a =$ 1

11. $c \times 4 = 36$

    $c =$ 9

12. $5 \times y = 40$

    $y =$ 8