Dear Family,

During the next few weeks, our math class will be learning about multiplying by 1-digit whole numbers. We will investigate strategies for multiplying 2-, 3-, and 4-digit numbers by the numbers 2–9.

You can expect to see homework that provides practice with multiplication by 1-digit numbers.

Here is a sample of how your child will be taught to multiply by a 1-digit number.

Vocabulary

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

partial products A method of multiplying in which the ones, tens, hundreds, and so on are multiplied separately and then the products are added together

🔒 MODEL Multiply by a 1-Digit Number

This is one way we will be multiplying by 1-digit numbers.

STEP 1

Multiply the tens. Record.

$$\begin{array}{r} 26 \\ \times\ \ 3 \\ \hline 60 \end{array}$$ ← 3 × 2 tens = 6 tens

STEP 2

Multiply the ones. Record.

$$\begin{array}{r} 26 \\ \times\ \ 3 \\ \hline 60 \\ 18 \end{array}$$ ← 3 × 6 ones = 18 ones

STEP 3

Add the partial products.

$$\begin{array}{r} 26 \\ \times\ \ 3 \\ \hline 60 \\ +\ 18 \\ \hline 78 \end{array}$$

Tips

Estimating to Check Multiplication

When estimation is used to check that a multiplication answer is reasonable, usually the greater factor is rounded to a multiple of 10 that has only one non-zero digit. Then mental math can be used to recall the basic fact product, and patterns can be used to determine the correct number of zeros in the estimate.

Carta para la casa

Vocabulario

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

productos parciales Un método de multiplicación en el cual las unidades, las decenas, las centenas y así sucesivamente, se multiplican por separado, y después se suman sus productos

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos a multiplicar números enteros de un dígito. Investigaremos estrategias para multiplicar números de 2, 3 y 4 dígitos por números del 2 al 9.

Llevaré a la casa tareas para practicar la multiplicación de números de 1 dígito.

Este es un ejemplo de la manera como aprenderemos a multiplicar por un número de 1 dígito.

🔑 MODELO Multiplicar por un número de 1 dígito

Esta es una manera en la que multiplicaremos por un número de 1 dígito.

PASO 1

Multiplica las decenas. Anota.

$$\begin{array}{r} 26 \\ \times\ \ 3 \\ \hline 60 \end{array}$$ ← 3×2 decenas
= 6 decenas

PASO 2

Multiplica las unidades. Anota.

$$\begin{array}{r} 26 \\ \times\ \ 3 \\ \hline 60 \\ 18 \end{array}$$ ← 3×6 unidades
= 18 unidades

PASO 3

Suma los productos parciales.

$$\begin{array}{r} 26 \\ \times\ \ 3 \\ \hline 60 \\ +\ 18 \\ \hline 78 \end{array}$$

Pistas

Estimar para revisar la multiplicación

Cuando se usa la estimación para revisar que la respuesta de una multiplicación es razonable, el factor se suele redondear al múltiplo de 10 que tiene un solo dígito distinto a cero. Después se puede usar el cálculo mental para recordar el producto básico de la operación, y se pueden usar patrones para determinar la cantidad correcta de ceros de la estimación.

Multiplication Comparisons

Write a comparison sentence.

1. $6 \times 3 = 18$

__6__ times as many as __3__ is __18__.

2. $63 = 7 \times 9$

_____ is _____ times as many as _____.

3. $5 \times 4 = 20$

_____ times as many as _____ is _____.

4. $48 = 8 \times 6$

_____ is _____ times as many as _____.

Write an equation.

5. 2 times as many as 8 is 16.

_____

6. 42 is 6 times as many as 7.

_____

7. 3 times as many as 5 is 15.

_____

8. 36 is 9 times as many as 4.

_____

9. 72 is 8 times as many as 9.

_____

10. 5 times as many as 6 is 30.

_____

Problem Solving REAL WORLD

11. Alan is 14 years old. This is twice as old as his brother James is. How old is James?

_____

12. There are 27 campers. This is nine times as many as the number of counselors. How many counselors are there?

_____

Lesson Check (MACC.4.OA.1.1)

1. Which equation best represents the comparison sentence?

   24 is 4 times as many as 6.

   (A) $24 \times 4 = 6$

   (B) $24 = 4 \times 6$

   (C) $24 = 4 + 6$

   (D) $4 + 6 = 24$

2. Which comparison sentence best represents the equation?

   $5 \times 9 = 45$

   (A) 5 more than 9 is 45.

   (B) 9 is 5 times as many as 45.

   (C) 5 is 9 times as many as 45.

   (D) 45 is 5 times as many as 9.

Spiral Review (MACC.4.OA.1.3, MACC.4.NBT.1.2, MACC.4.NBT.1.3)

3. Which of the following statements correctly compares the numbers? (Lesson 1.3)

   (A) $273,915 > 274,951$

   (B) $134,605 < 143,605$

   (C) $529,058 > 530,037$

   (D) $452,731 > 452,819$

4. What is the standard form for $200,000 + 80,000 + 700 + 6$? (Lesson 1.2)

   (A) 2,876

   (B) 28,706

   (C) 208,706

   (D) 280,706

5. Sean and Leah are playing a computer game. Sean scored 72,491 points. Leah scored 19,326 points more than Sean. How many points did Leah score? (Lesson 1.6)

   (A) 53,615

   (B) 91,717

   (C) 91,815

   (D) 91,817

6. A baseball stadium has 38,496 seats. Rounded to the nearest thousand, how many seats is this? (Lesson 1.4)

   (A) 38,000

   (B) 38,500

   (C) 39,000

   (D) 40,000

Comparison Problems

COMMON CORE STANDARD MACC.4.OA.1.2
Use the four operations with whole numbers to solve problems.

Draw a model. Write an equation and solve.

1. Stacey made a necklace using 4 times as many blue beads as red beads. She used a total of 40 beads. How many blue beads did Stacey use?

Think: Stacey used a total of 40 beads. Let n represent the number of red beads.

blue	n	n	n	n
red	n			

40
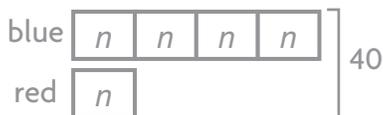
$$5 \times n = 40; 5 \times 8 = 40;$$
$$4 \times 8 = 32 \text{ blue beads}$$

2. At the zoo, there were 3 times as many monkeys as lions. Tom counted a total of 24 monkeys and lions. How many monkeys were there?

_____

_____

3. Fred's frog jumped 7 times as far as Al's frog. The two frogs jumped a total of 56 inches. How far did Fred's frog jump?

4. Sheila has 5 times as many markers as Dave. Together, they have 18 markers. How many markers does Sheila have?

_____

_____

Problem Solving REAL WORLD

5. Rafael counted a total of 40 white cars and yellow cars. There were 9 times as many white cars as yellow cars. How many white cars did Rafael count?

6. Sue scored a total of 35 points in two games. She scored 6 times as many points in the second game as in the first. How many more points did she score in the second game?

_____

_____

Lesson Check (MACC.4.OA.1.2)

1. Sari has 3 times as many pencil erasers as Sam. Together, they have 28 erasers. How many erasers does Sari have?

(A) 7

(B) 14

(C) 18

(D) 21

2. In Sean's fish tank, there are 6 times as many goldfish as guppies. There are a total of 21 fish in the tank. How many more goldfish are there than guppies?

(A) 5

(B) 12

(C) 15

(D) 18

Spiral Review (MACC.4.OA.1.1, MACC.4.OA.1.3, MACC.4.NBT.1.2)

3. Barbara has 9 stuffed animals. Trish has 3 times as many stuffed animals as Barbara. How many stuffed animals does Trish have? **(Lesson 2.1)**

(A) 3

(B) 12

(C) 24

(D) 27

4. There are 104 students in the fourth grade at Allison's school. One day, 15 fourth-graders were absent. How many fourth-graders were at school that day? **(Lesson 1.7)**

(A) 89

(B) 91

(C) 99

(D) 119

5. Joshua has 112 rocks. Jose has 98 rocks. Albert has 107 rocks. What is the correct order of the boys from the least to the greatest number of rocks owned? **(Lesson 1.3)**

(A) Jose, Albert, Joshua

(B) Jose, Joshua, Albert

(C) Albert, Jose, Joshua

(D) Joshua, Albert, Jose

6. Alicia has 32 stickers. This is 4 times as many stickers as Benita has. How many stickers does Benita have? **(Lesson 2.1)**

(A) 6

(B) 8

(C) 9

(D) 28

Multiply Tens, Hundreds, and Thousands

Find the product.

1. $4 \times 7{,}000 =$ **28,000**

Think: $4 \times 7 = 28$
So, $4 \times 7{,}000 = 28{,}000$

2. $9 \times 60 =$ _____

3. $8 \times 200 =$ _____

4. $5 \times 6{,}000 =$ _____

5. $7 \times 800 =$ _____

6. $8 \times 90 =$ _____

7. $6 \times 3{,}000 =$ _____

8. $3 \times 8{,}000 =$ _____

9. $5 \times 500 =$ _____

10. $9 \times 4{,}000 =$ _____

11. $7 \times 7{,}000 =$ _____

12. $3 \times 40 =$ _____

13. $4 \times 5{,}000 =$ _____

14. $2 \times 9{,}000 =$ _____

Problem Solving REAL WORLD

15. A bank teller has 7 rolls of coins. Each roll has 40 coins. How many coins does the bank teller have?

16. Theo buys 5 packages of paper. There are 500 sheets of paper in each package. How many sheets of paper does Theo buy?

Lesson Check (MACC.4.NBT.2.5)

1. A plane is traveling at a speed of 400 miles per hour. How far will the plane travel in 5 hours?

Ⓐ   200 miles

Ⓑ   2,000 miles

Ⓒ   20,000 miles

Ⓓ 200,000 miles

2. One week, a clothing factory made 2,000 shirts in each of 6 different colors. How many shirts did the factory make in all?

Ⓐ   2,000

Ⓑ   12,000

Ⓒ   120,000

Ⓓ   200,000

Spiral Review (MACC.4.OA.1.1, MACC.4.OA.1.2, MACC.4.OA.1.3, MACC.4.NBT.1.2)

3. Which comparison sentence best represents the equation? (Lesson 2.1)

$$6 \times 7 = 42$$

Ⓐ 7 is 6 times as many as 42.

Ⓑ 6 is 7 times as many as 42.

Ⓒ 42 is 6 times as many as 7.

Ⓓ 6 more than 7 is 42.

4. The population of Middleton is six thousand, fifty-four people. Which of the following shows this number written in standard form? (Lesson 1.2)

Ⓐ   654

Ⓑ 6,054

Ⓒ 6,504

Ⓓ 6,540

5. In an election for mayor, 85,034 people voted for Carl Green and 67,952 people voted for Maria Lewis. By how many votes did Carl Green win the election? (Lesson 1.7)

Ⓐ   17,082

Ⓑ   17,182

Ⓒ   22,922

Ⓓ 152,986

6. Meredith picked 4 times as many green peppers as red peppers. If she picked a total of 20 peppers, how many green peppers did she pick? (Lesson 2.2)

Ⓐ   4

Ⓑ   5

Ⓒ 16

Ⓓ 24

Estimate Products

COMMON CORE STANDARD MACC.4.NBT.2.5
Use place value understanding and properties of
operations to perform multi-digit arithmetic.

Estimate the product by rounding.

1. 4×472

4×472

$\downarrow$

$4 \times \mathbf{500}$

2,000

2. $2 \times 6{,}254$

3. 9×54

4. $5 \times 5{,}503$

5. 3×832

6. 6×98

7. $8 \times 3{,}250$

8. 7×777

Find two numbers the exact answer is between.

9. 3×567

10. $6 \times 7{,}381$

11. 4×94

12. 8×684

Problem Solving REAL WORLD

13. Isaac drinks 8 glasses of water each day. He says he will drink 2,920 glasses of water in a year that has 365 days. Is the exact answer reasonable? **Explain.**

_____

_____

_____

_____

14. Most Americans throw away about 1,365 pounds of trash each year. Is it reasonable to estimate that Americans throw away over 10,000 pounds of trash in 5 years? **Explain.**

_____

_____

_____

_____

Lesson Check (MACC.4.NBT.2.5)

1. A theater has 4,650 seats. If the theater sells all the tickets for each of its 5 shows, about how many tickets will the theater sell in all?

   (A) 2,500   (C) 25,000

   (B) 10,000   (D) 30,000

2. Washington Elementary has 4,358 students. Jefferson High School has 3 times as many students as Washington Elementary. About how many students does Jefferson High School have?

   (A) 16,000   (C) 10,000

   (B) 12,000   (D) 1,200

Spiral Review (MACC.4.OA.1.1, MACC.4.NBT.1.3, MACC.4.NBT.2.4, MACC.4.NBT.2.5)

3. Diego has 4 times as many autographed baseballs as Melanie has. Diego has 24 autographed baseballs. How many autographed baseballs does Melanie have? **(Lesson 2.1)**

   (A) 28

   (B) 20

   (C) 8

   (D) 6

4. Mr. Turkowski bought 4 boxes of envelopes at the office supply store. Each box has 500 envelopes. How many envelopes did Mr. Turkowski buy? **(Lesson 2.3)**

   (A) 200

   (B) 504

   (C) 2,000

   (D) 20,000

5. Pennsylvania has a land area of 44,816 square miles. Which of the following shows the land area of Pennsylvania rounded to the nearest hundred? **(Lesson 1.4)**

   (A) 44,000 square miles

   (B) 44,800 square miles

   (C) 44,900 square miles

   (D) 45,000 square miles

6. The table shows the types of DVDs customers rented from Sunshine Movie Rentals last year.

Movie Rentals	
Type	Number Rented
Comedy	6,720
Drama	4,032
Action	5,540

How many comedy and action movies were rented in all last year? **(Lesson 1.6)**

   (A) 13,620   (C) 12,260

   (B) 13,000   (D) 10,752

Name _____

Multiply Using the Distributive Property

Model the product on the grid. Record the product.

1. $4 \times 19 =$ **76**

10   9

4
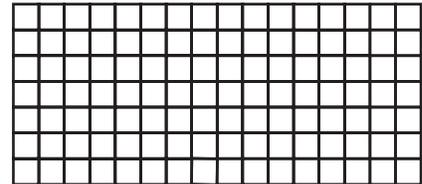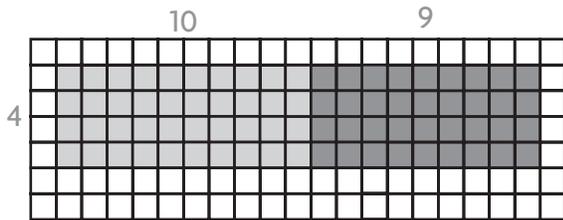
$4 \times 10 = 40$ and $4 \times 9 = 36$

$40 + 36 = 76$

2. $5 \times 13 =$ _____

Find the product.

3. $4 \times 14 =$ _____

4. $3 \times 17 =$ _____

5. $6 \times 15 =$ _____
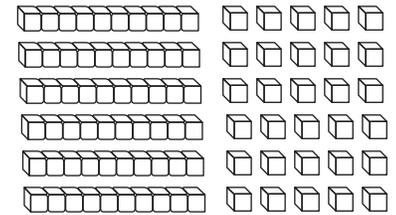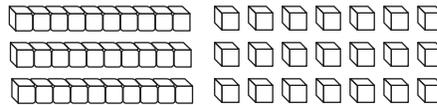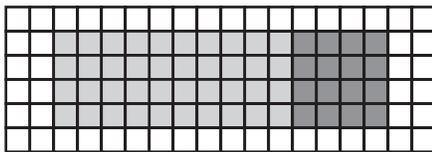
Problem Solving REAL WORLD

6. Michael arranged his pennies in the following display.
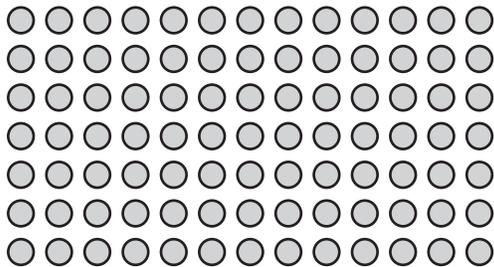
How many pennies does Michael have in all?

_____

7. A farmer has an apple orchard with the trees arranged as shown below.
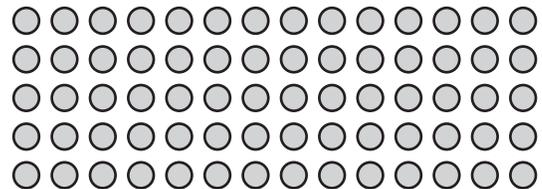
If the farmer wants to pick one apple from each tree, how many apples will he pick?

_____

Lesson Check (MACC.4.NBT.2.5)

1. The model shows how Maya planted flowers in her garden.

10   5

3
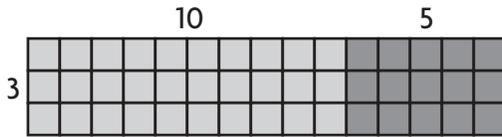
How many flowers did Maya plant?

(A) 15

(B) 18

(C) 30

(D) 45

2. The model below represents the expression 5×18.
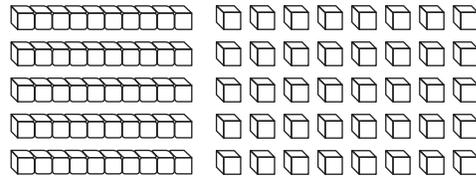
How many tens will there be in the final product?

(A) 5   (C) 8

(B) 6   (D) 9

Spiral Review (MACC.4.OA.1.2, MACC.4.NBT.1.2, MACC.4.NBT.2.4, MACC.4.NBT.2.5)

3. Center City has a population of twenty one thousand, seventy people. Which of the following shows the population written in standard form? (Lesson 1.2)

(A) 21,007

(B) 21,070

(C) 21,077

(D) 21,700

4. Central School collected 12,516 pounds of newspaper to recycle. Eastland School collected 12,615 pounds of newspapers. How many more pounds of newspaper did Eastland School collect than Central School? (Lesson 1.7)

(A)   99 pounds

(B)   101 pounds

(C)   199 pounds

(D) 1,099 pounds

5. Allison has 5 times as many baseball cards as football cards. In all, she has 120 baseball and football cards. How many baseball cards does Allison have?

(Lesson 2.2)

(A)   20

(B)   24

(C)   96

(D) 100

6. A ruby-throated hummingbird beats its wings about 53 times each second. About how many times does a ruby-throated hummingbird beat its wings in 5 seconds? (Lesson 2.4)

(A) 25   (C) 250

(B) 58   (D) 300

Multiply Using Expanded Form

Record the product. Use expanded form to help.

1. $7 \times 14 =$ ___**98**___

$7 \times 14 = 7 \times (10 + 4)$

$\qquad = (7 \times 10) + (7 \times 4)$

$\qquad = 70 + 28$

$\qquad = 98$

2. $8 \times 43 =$ _____

3. $6 \times 532 =$ _____

4. $5 \times 923 =$ _____

5. $4 \times 2{,}371 =$ _____

6. $7 \times 1{,}829 =$ _____

Problem Solving REAL WORLD

7. The fourth-grade students at Riverside School are going on a field trip. There are 68 students on each of the 4 buses. How many students are going on the field trip?

8. There are 5,280 feet in one mile. Hannah likes to walk 5 miles each week for exercise. How many feet does Hannah walk each week?

_____

_____

Lesson Check (MACC.4.NBT.2.5)

1. Which expression shows how to multiply 7×256 by using expanded form and the Distributive Property?

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

   (B) $(7 \times 200) + (7 \times 500) + (7 \times 600)$

   (C) $(7 \times 2) + (7 \times 50) + (7 \times 600)$

   (D) $(7 \times 200) + (7 \times 50) + (7 \times 6)$

2. Sue uses the expression $(8 \times 3,000) + (8 \times 200) + (8 \times 9)$ to help solve a multiplication problem. Which is Sue's multiplication problem?

   (A) 8×329

   (B) $8 \times 3,029$

   (C) $8 \times 3,209$

   (D) $8 \times 3,290$

Spiral Review (MACC.4.NBT.1.1, MACC.4.NBT.1.2, MACC.4.NBT.2.5)

3. What is another way to write 9×200? (Lesson 1.5)

   (A) 18 ones

   (B) 18 tens

   (C) 18 hundreds

   (D) 18 thousands

4. What is the value of the digit 4 in 46,000? (Lesson 1.1)

   (A) 4 ten thousands

   (B) 4 thousands

   (C) 4 hundreds

   (D) 4 tens

5. Chris bought 6 packages of napkins for his restaurant. There were 200 napkins in each package. How many napkins did Chris buy? (Lesson 2.3)

   (A) 120

   (B) 1,200

   (C) 12,000

   (D) 120,000

6. Which of the following lists the numbers in order from **least** to **greatest**? (Lesson 1.3)

   (A) 8,512; 8,251; 8,125

   (B) 8,251; 8,125; 8,512

   (C) 8,125; 8,512; 8,251

   (D) 8,125; 8,251; 8,512

Multiply Using Partial Products

COMMON CORE STANDARD MACC.4.NBT.2.5
Use place value understanding and properties of operations to perform multi-digit arithmetic.

Estimate. Then record the product.

1. Estimate: 1,200

$$
\begin{array}{r}
243 \\
\times\ \ \ 6 \\
\hline
1,200 \\
240 \\
+\ \ \ \ 18 \\
\hline
1,458
\end{array}
$$

2. Estimate: _____

$$
\begin{array}{r}
640 \\
\times\ \ \ 3 \\
\hline
\end{array}
$$

3. Estimate: _____

$$
\begin{array}{r}
\$149 \\
\times\ \ \ 5 \\
\hline
\end{array}
$$

4. Estimate: _____

$$
\begin{array}{r}
721 \\
\times\ \ \ 8 \\
\hline
\end{array}
$$

5. Estimate: _____

$$
\begin{array}{r}
293 \\
\times\ \ \ 4 \\
\hline
\end{array}
$$

6. Estimate: _____

$$
\begin{array}{r}
\$416 \\
\times\ \ \ 6 \\
\hline
\end{array}
$$

7. Estimate: _____

$$
\begin{array}{r}
961 \\
\times\ \ \ 2 \\
\hline
\end{array}
$$

8. Estimate: _____

$$
\begin{array}{r}
837 \\
\times\ \ \ 9 \\
\hline
\end{array}
$$

9. Estimate: _____

$$
\begin{array}{r}
652 \\
\times\ \ \ 4 \\
\hline
\end{array}
$$

10. Estimate: _____

$$
\begin{array}{r}
307 \\
\times\ \ \ 3 \\
\hline
\end{array}
$$

11. Estimate: _____

$$
\begin{array}{r}
543 \\
\times\ \ \ 7 \\
\hline
\end{array}
$$

12. Estimate: _____

$$
\begin{array}{r}
\$822 \\
\times\ \ \ 5 \\
\hline
\end{array}
$$

Problem Solving REAL WORLD

13. A maze at a county fair is made from 275 bales of hay. The maze at the state fair is made from 4 times as many bales of hay. How many bales of hay are used for the maze at the state fair?

14. Pedro gets 8 hours of sleep each night. How many hours does Pedro sleep in a year with 365 days?

Lesson Check _(MACC.4.NBT.2.5)

1. A passenger jet flies at an average speed of 548 miles per hour. At that speed, how many miles does the plane travel in 4 hours?

- (A) 2,092 miles
- (B) 2,112 miles
- (C) 2,192 miles
- (D) 2,480 miles

2. Use the model to find 3×157.

	100	50	7
3			
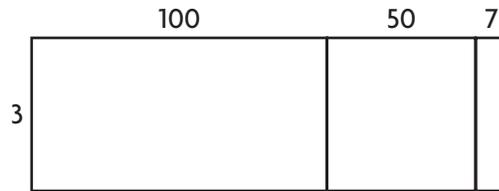
- (A) 300,171
- (B) 300,157
- (C) 471
- (D) 451

Spiral Review _(MACC.4.NBT.1.2, MACC.4.NBT.2.4, MACC.4.NBT.2.5)

3. The school fun fair made $1,768 on games and $978 on food sales. How much money did the fun fair make on games and food sales? **(Lesson 1.6)**

- (A) $2,636
- (B) $2,646
- (C) $2,736
- (D) $2,746

4. Use the table below.

State	Population
North Dakota	646,844
Alaska	698,473
Vermont	621,760

Which of the following lists the states from least to greatest population? **(Lesson 1.3)**

- (A) Alaska, North Dakota, Vermont
- (B) Vermont, Alaska, North Dakota
- (C) North Dakota, Vermont, Alaska
- (D) Vermont, North Dakota, Alaska

5. A National Park covers 218,375 acres. What is this number written in expanded form? **(Lesson 1.2)**

- (A) $200,000 + 10,000 + 8,000 + 300 + 70 + 5$
- (B) $20,000 + 1,000 + 800 + 30 + 75$
- (C) $218 + 375$
- (D) 218 thousand, 375

6. Last year a business had profits of $8,000. This year its profits are 5 times as great. What are this year's profits? **(Lesson 2.3)**

- (A) $4,000
- (B) $40,000
- (C) $44,000
- (D) $400,000

Name _____

Multiply Using Mental Math

Find the product. Tell which strategy you used.

1. 6×297 Think: $297 = 300 - 3$
$6 \times 297 = 6 \times (300 - 3)$
$= (6 \times 300) - (6 \times 3)$
$= 1,800 - 18$
1,782; $= 1,782$

use subtraction

2. $8 \times 25 \times 23$

3. 8×604

4. 50×28

_____

_____

5. 9×199

6. $20 \times 72 \times 5$

7. 32×25

_____

_____

Problem Solving REAL WORLD

8. Section J in an arena has 20 rows. Each row has 15 seats. All tickets cost $18 each. If all the seats are sold, how much money will the arena collect for Section J?

9. At a high-school gym, the bleachers are divided into 6 equal sections. Each section can seat 395 people. How many people can be seated in the gym?

_____

Lesson Check (MACC.4.NBT.2.5)

1. Pencils come in cartons of 24 boxes. A school bought 50 cartons of pencils for the start of school. Each box of pencils cost $2. How much did the school spend on pencils?

   (A) $240

   (B) $1,200

   (C) $2,400

   (D) $4,800

2. The school also bought 195 packages of markers. There are 6 markers in a package. How many markers did the school buy?

   (A) 1,170

   (B) 1,195

   (C) 1,200

   (D) 1,230

Spiral Review (MACC.4.NBT.2.4, MACC.4.NBT.2.5)

3. Alex has 175 baseball cards. Rodney has 3 times as many baseball cards as Alex. How many fewer cards does Alex have than Rodney? (Lesson 2.7)

   (A) 700

   (B) 525

   (C) 450

   (D) 350

4. A theater seats 1,860 people. The last 6 shows have been sold out. Which is the **best** estimate of the total number of people attending the last 6 shows? (Lesson 2.4)

   (A) fewer than 6,000

   (B) about 6,000

   (C) fewer than 12,000

   (D) more than 20,000

5. At one basketball game, there were 1,207 people watching. At the next game, there were 958 people. How many people in all were at the two games? (Lesson 1.6)

   (A) 2,155

   (B) 2,165

   (C) 2,265

   (D) 10,787

6. Bill bought 4 jigsaw puzzles. Each puzzle has 500 pieces. How many pieces are in all the puzzles altogether? (Lesson 2.3)

   (A)   200

   (B)   900

   (C) 2,000

   (D) 20,000

Problem Solving • Multistep Multiplication Problems

COMMON CORE STANDARD MACC.4.OA.1.3
Use the four operations with whole numbers to solve problems.

Solve each problem.

1. A community park has 6 tables with a chessboard painted on top. Each board has 8 rows of 8 squares. When a game is set up, 4 rows of 8 squares on each board are covered with chess pieces. If a game is set up on each table, how many total squares are NOT covered by chess pieces?
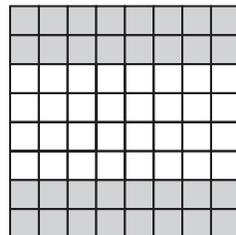
$4 \times 8 = 32$
$32 \times 6 = $ ▨

192 squares

2. Jonah and his friends go apple picking. Jonah fills 5 baskets. Each basket holds 15 apples. If 4 of Jonah's friends pick the same amount as Jonah, how many apples do Jonah and his friends pick in all? Draw a diagram to solve the problem.

_____

3. There are 6 rows of 16 chairs set up for the third-grade play. In the first 4 rows, 2 chairs on each end are reserved for teachers. The rest of the chairs are for students. How many chairs are there for students?

_____

Lesson Check (MACC.4.OA.1.3)

1. At a tree farm, there are 9 rows of 36 spruce trees. In each row, 14 of the spruce trees are blue spruce. How many spruce trees are NOT blue spruce?

   (A) 126

   (B) 198

   (C) 310

   (D) 324

2. Ron is tiling a countertop. He needs to place 54 square tiles in each of 8 rows to cover the counter. He wants to randomly place 8 groups of 4 blue tiles each and have the rest of the tiles be white. How many white tiles will Ron need?

   (A) 464

   (B) 432

   (C) 400

   (D) 32

Spiral Review (MACC.4.OA.1.1, MACC.4.NBT.2.4, MACC.4.NBT.2.5)

3. Juan reads a book with 368 pages. Savannah reads a book with 172 fewer pages than Juan's book. How many pages are in the book Savannah reads? (Lesson 1.8)

   (A) 196

   (B) 216

   (C) 296

   (D) 540

4. Hailey has bottles that hold 678 pennies each. About how many pennies does she have if she has 6 bottles filled with pennies? (Lesson 2.4)

   (A) 3,600

   (B) 3,900

   (C) 4,200

   (D) 6,000

5. Terrence plants a garden that has 8 rows of flowers, with 28 flowers in each row. How many flowers did Terrence plant? (Lesson 2.6)

   (A) 1,664

   (B) 224

   (C) 164

   (D) 36

6. Kevin has 5 fish in his fish tank. Jasmine has 4 times as many fish as Kevin has. How many fish does Jasmine have? (Lesson 2.1)

   (A) 15

   (B) 20

   (C) 25

   (D) 30

Name _____

Multiply 2-Digit Numbers with Regrouping

COMMON CORE STANDARD MACC.4.NBT.2.5
Use place value understanding and properties of operations to perform multi-digit arithmetic.

Estimate. Then record the product.

1. Estimate: __150__

$$\begin{array}{r} 1 \\ 46 \\ \times\ \ 3 \\ \hline 138 \end{array}$$

2. Estimate: _____

$$\begin{array}{r} 32 \\ \times\ \ 8 \\ \hline \end{array}$$

3. Estimate: _____

$$\begin{array}{r} \$55 \\ \times\ \ 2 \\ \hline \end{array}$$

4. Estimate: _____

$$\begin{array}{r} 61 \\ \times\ \ 8 \\ \hline \end{array}$$

5. Estimate: _____

$$\begin{array}{r} 37 \\ \times\ \ 9 \\ \hline \end{array}$$

6. Estimate: _____

$$\begin{array}{r} \$18 \\ \times\ \ 7 \\ \hline \end{array}$$

7. Estimate: _____

$$\begin{array}{r} 83 \\ \times\ \ 5 \\ \hline \end{array}$$

8. Estimate: _____

$$\begin{array}{r} 95 \\ \times\ \ 8 \\ \hline \end{array}$$

9. Estimate: _____

$$\begin{array}{r} 94 \\ \times\ \ 9 \\ \hline \end{array}$$

10. Estimate: _____

$$\begin{array}{r} 57 \\ \times\ \ 6 \\ \hline \end{array}$$

11. Estimate: _____

$$\begin{array}{r} 72 \\ \times\ \ 3 \\ \hline \end{array}$$

12. Estimate: _____

$$\begin{array}{r} \$79 \\ \times\ \ 8 \\ \hline \end{array}$$

Problem Solving REAL WORLD

13. Sharon is 54 inches tall. A tree in her backyard is 5 times as tall as she is. The floor of her treehouse is at a height that is twice as tall as she is. What is the difference, in inches, between the top of the tree and the floor of the treehouse?

14. Mr. Diaz's class is taking a field trip to the science museum. There are 23 students in the class, and a student admission ticket is $8. How much will the student tickets cost?

_____

_____

Lesson Check (MACC.4.NBT.2.5)

1. A ferryboat makes four trips to an island each day. The ferry can hold 88 people. If the ferry is full on each trip, how many passengers are carried by the ferry each day?

   (A) 176

   (B) 322

   (C) 332

   (D) 352

2. Julian counted the number of times he drove across the Seven Mile Bridge while vacationing in the Florida Keys. He crossed the bridge 34 times. How many miles in all did Julian drive crossing the bridge?

   (A) 328 miles   (C) 238 miles

   (B) 248 miles   (D) 218 miles

Spiral Review (MACC.4.NBT.1.2, MACC.4.NBT.2.4, MACC.4.NBT.2.5)

3. Sebastian wrote the population of his city as $300,000 + 40,000 + 60 + 7$. Which of the following shows the population of Sebastian's city written in standard form? **(Lesson 1.2)**

   (A) 346,700

   (B) 340,670

   (C) 340,607

   (D) 340,067

4. A plane flew 2,190 kilometers from Chicago to Flagstaff. Another plane flew 2,910 kilometers from Chicago to Oakland. How much farther did the plane that flew to Oakland fly than the plane that flew to Flagstaff? **(Lesson 1.7)**

   (A) 720 kilometers

   (B) 820 kilometers

   (C) 5,000 kilometers

   (D) 5,100 kilometers

5. Tori buys 27 packages of miniature racing cars. Each package contains 5 cars. About how many miniature racing cars does Tori buy? **(Lesson 2.4)**

   (A) 15

   (B) 32

   (C) 100

   (D) 150

6. Which of the following equations represents the Distributive Property? **(Lesson 2.5)**

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

   (B) $9 \times 0 = 0$

   (C) $5 \times (3 + 4) = (5 \times 3) + (5 \times 4)$

   (D) $6 \times (3 \times 2) = (6 \times 3) \times 2$

Multiply 3-Digit and 4-Digit Numbers with Regrouping

Estimate. Then find the product.

1. Estimate: **4,000**

1 2 2
$$\begin{array}{r} 1,467 \\ \times\quad\ 4 \\ \hline 5,868 \end{array}$$

2. Estimate: _____

$$\begin{array}{r} 5,339 \\ \times\quad\ 6 \\ \hline \end{array}$$

3. Estimate: _____

$$\begin{array}{r} \$879 \\ \times\quad\ 8 \\ \hline \end{array}$$

4. Estimate: _____

$$\begin{array}{r} 3,182 \\ \times\quad\ 5 \\ \hline \end{array}$$

5. Estimate: _____

$$\begin{array}{r} 4,616 \\ \times\quad\ 3 \\ \hline \end{array}$$

6. Estimate: _____

$$\begin{array}{r} \$2,854 \\ \times\quad\ 9 \\ \hline \end{array}$$

7. Estimate: _____

$$\begin{array}{r} 7,500 \\ \times\quad\ 2 \\ \hline \end{array}$$

8. Estimate: _____

$$\begin{array}{r} 948 \\ \times\quad\ 7 \\ \hline \end{array}$$

9. Estimate: _____

$$\begin{array}{r} 1,752 \\ \times\quad\ 6 \\ \hline \end{array}$$

10. Estimate: _____

$$\begin{array}{r} 550 \\ \times\quad\ 9 \\ \hline \end{array}$$

11. Estimate: _____

$$\begin{array}{r} 6,839 \\ \times\quad\ 4 \\ \hline \end{array}$$

12. Estimate: _____

$$\begin{array}{r} \$9,614 \\ \times\quad\ 3 \\ \hline \end{array}$$

Problem Solving REAL WORLD

13. Lafayette County has a population of 7,022 people. Columbia County's population is 8 times as great as Lafayette County's population. What is the population of Columbia County?

14. A seafood company sold 9,125 pounds of fish last month. If 6 seafood companies sold the same amount of fish, how much fish did the 6 companies sell last month in all?

_____

_____

Lesson Check (MACC.4.NBT.2.5)

1. By recycling 1 ton of paper, 6,953 gallons of water are saved. How many gallons of water are saved by recycling 4 tons of paper?

   (A) 24,602 gallons

   (B) 27,612 gallons

   (C) 27,812 gallons

   (D) 28,000 gallons

2. Esteban counted the number of steps it took him to walk to school. He counted 1,138 steps. How many steps does he take walking to and from school each day?

   (A) 2,000

   (B) 2,266

   (C) 2,276

   (D) 22,616

Spiral Review (MACC.4.NBT.1.2, MACC.4.NBT.1.3, MACC.4.NBT.2.4, MACC.4.NBT.2.5)

3. A website has 13,406 people registered. What is the word form of this number? (Lesson 1.2)

   (A) thirty thousand, four hundred six

   (B) thirteen thousand, four hundred sixty

   (C) thirteen thousand, four hundred six

   (D) thirteen thousand, six hundred six

4. In one year, the McAlister family drove their car 15,680 miles. To the nearest thousand, how many miles did they drive their car that year? (Lesson 1.4)

   (A) 15,000 miles

   (B) 15,700 miles

   (C) 16,000 miles

   (D) 20,000 miles

5. Connor scored 14,370 points in a game. Amy scored 1,089 fewer points than Connor. How many points did Amy score? (Lesson 1.8)

   (A) 12,281

   (B) 13,281

   (C) 15,359

   (D) 15,459

6. Lea buys 6 model cars that each cost $15. She also buys 4 bottles of paint that each cost $11. How much does Lea spend in all on model cars and paint? (Lesson 2.9)

   (A) $134

   (B) $90

   (C) $44

   (D) $36

Solve Multistep Problems Using Equations

COMMON CORE STANDARD MACC.4.OA.1.3
Use the four operations with whole numbers to solve problems.

Find the value of *n*.

1. $4 \times 27 + 5 \times 34 - 94 = n$

$108 + 5 \times 34 - 94 = n$

$108 + 170 - 94 = n$

$278 - 94 = n$

$184 = n$

2. $7 \times 38 + 3 \times 45 - 56 = n$

_____ = n

3. $6 \times 21 + 7 \times 29 - 83 = n$

_____ = n

4. $9 \times 19 + 2 \times 57 - 75 = n$

_____ = n

5. $5 \times 62 + 6 \times 33 - 68 = n$

_____ = n

6. $8 \times 19 + 4 \times 49 - 39 = n$

_____ = n

Problem Solving REAL WORLD

7. A bakery has 4 trays with 16 muffins on each tray. The bakery has 3 trays of cupcakes with 24 cupcakes on each tray. If 15 cupcakes are sold, how many muffins and cupcakes are left?

_____

_____

8. Katy bought 5 packages of stickers with 25 stickers in each package. She also bought 3 boxes of markers with 12 markers in each box. If she receives 8 stickers from a friend, how many stickers and markers does Katy have now?

_____

_____

Lesson Check (MACC.4.OA.1.3)

1. What is the value of n?

   $9 \times 23 + 3 \times 39 - 28 = n$

   Ⓐ 240

   Ⓑ 296

   Ⓒ 2,310

   Ⓓ 8,162

2. Which expression has a value of 199?

   Ⓐ $4 \times 28 + 6 \times 17 - 15$

   Ⓑ $4 \times 17 + 6 \times 28 - 38$

   Ⓒ $4 \times 38 + 6 \times 15 - 28$

   Ⓓ $4 \times 15 + 6 \times 38 - 88$

Spiral Review (MACC.4.OA.1.1, MACC.4.NBT.2.5)

3. Which expression shows how you can multiply 9×475 using expanded form and the Distributive Property? (Lesson 2.6)

   Ⓐ $(9 \times 4) + (9 \times 7) + (9 \times 5)$

   Ⓑ $(9 \times 4) + (9 \times 70) + (9 \times 700)$

   Ⓒ $(9 \times 400) + (9 \times 70) + (9 \times 5)$

   Ⓓ $(9 \times 400) + (9 \times 700) + (9 \times 500)$

4. Which equation best represents the comparison sentence? (Lesson 2.1)

   32 is 8 times as many as 4

   Ⓐ $32 = 8 \times 4$

   Ⓑ $32 \times 8 = 4$

   Ⓒ $32 = 8 + 4$

   Ⓓ $8 + 4 = 32$

5. Between which pair of numbers is the exact product of 379 and 8? (Lesson 2.4)

   Ⓐ between 2,400 and 2,500

   Ⓑ between 2,400 and 2,800

   Ⓒ between 2,400 and 3,000

   Ⓓ between 2,400 and 3,200

6. Which of the following statements shows the halving and doubling strategy to find 28×50? (Lesson 2.8)

   Ⓐ $28 \times 50 = 14 \times 100$

   Ⓑ $28 \times 50 = (14 \times 25) \times (14 \times 25)$

   Ⓒ $28 \times 50 = (20 \times 50) + (8 \times 50)$

   Ⓓ $28 \times 50 = 2 \times (14 \times 25)$

Chapter 2 Extra Practice

Lesson 2.1

Write a comparison sentence.

1. $27 = 3 \times 9$

_____ is _____ times as many as _____.

2. $7 \times 8 = 56$

_____ times as many as _____ is _____.

Lessons 2.3, 2.5 – 2.6

Find the product.

1. $2 \times 700 =$ _____

2. $6 \times 6,000 =$ _____

3. $7 \times 13 =$ _____

4. $4 \times 19 =$ _____

5. $5 \times 216 =$ _____

6. $9 \times 1,362 =$ _____

Lessons 2.2, 2.9

Draw a diagram. Write an equation and solve.

1. Julia saw 5 times as many cars as trucks in a parking lot. If she saw 30 cars and trucks altogether in the parking lot, how many were trucks?

_____

_____

2. Ivan has 6 times as many blue beads as red beads. He has 49 red and blue beads in all. How many blue beads does Ivan have?

_____

_____

3. There are 6 rows with 18 chairs in each row. In the center of the chairs, 4 rows of 6 chairs are brown. The rest of the chairs are blue. How many chairs are blue?

_____

_____

Lessons 2.7, 2.10–2.11

Estimate. Then record the product.

1. Estimate: _____

$$\begin{array}{r} 318 \\ \times\quad 3 \\ \hline \end{array}$$

2. Estimate: _____

$$\begin{array}{r} \$522 \\ \times\quad 9 \\ \hline \end{array}$$

3. Estimate: _____

$$\begin{array}{r} \$36 \\ \times\quad 6 \\ \hline \end{array}$$

4. Estimate: _____

$$\begin{array}{r} 57 \\ \times\quad 8 \\ \hline \end{array}$$

5. Estimate: _____

$$\begin{array}{r} 3,600 \\ \times\quad 8 \\ \hline \end{array}$$

6. Estimate: _____

$$\begin{array}{r} \$9,107 \\ \times\quad 5 \\ \hline \end{array}$$

Lesson 2.8

Find the product. Tell which strategy you used.

1. $(4 \times 10) \times 10$

2. 2×898

3. $4 \times 7 \times 25$

_____

_____

_____

_____

_____

_____

Lessons 2.4, 2.12

1. School pennants cost $18 each. Ms. Lee says she will pay $146 for 7 pennants. Is her answer reasonable? Explain.

2. Caleb draws 14 dogs on each of 4 posters. He draws 18 cats on each of 6 other posters. If he draws 5 more dogs on each poster with dogs, how many dogs and cats does he draw?

_____

_____