California Mathematics 4

Chapter 7 Resource Masters

Includes:

Chapter Resources
- Graphic Organizer
- Student-Built Glossary
- Family Letter
- Anticipation Guide
- Game

Levelled Lesson Resources
- Reteach
- Skills Practice
- Homework Practice
- Problem-Solving Practice
- Enrich

Assessment Resources
- Individual Progress Checklist
- Chapter Diagnostic Test
- Chapter Pretest
- 3 Quizzes
- Mid-Chapter Test
- Vocabulary Test
- Oral Assessment
- Chapter Project Rubric
- Foldables Rubric
- 6 Chapter Tests
- Extended Response Test
- Student Recording Sheet
- Cumulative Standardized Test Practice
- Answer Pages
- Chapter 7 Assessment Line-up
Answer Keys

All Answers Included
Grade 4 Chapter 7
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Teacher’s Guide to Using the Chapter 7 Resource Masters

The Chapter 7 Resource Masters includes the core materials needed for Chapter 7. These materials include worksheets, extensions, and assessment options. The answers for these pages appear at the back of this booklet.

All of the materials found in this booklet are included for viewing and printing on the TeacherWorks Plus™ CD-ROM.

Chapter Resources

 Graphic Organizer (page 1) This master is a tool designed to assist students with comprehension of grade-level concepts. You can use this graphic organizer in coordination with the appropriate lesson. While the content and layout of these tools vary, their goal is to assist students by providing a visual representation from which they can learn new concepts.

 Student Glossary (page 2) This master is a study tool that presents the key vocabulary terms from the chapter. You may suggest that students highlight or star the terms they do not understand. Give this list to students before beginning Lesson 7-1. Remind them to add these pages to their mathematics study notebooks.

 Anticipation Guide (page 6) This master is a survey designed for use before beginning the chapter. You can use this survey to highlight what students may or may not know about the concepts in the chapter. If feasible, interview students in small groups, asking them the interview questions in the guide. There is space for recording how well students answer the questions before they complete the chapter. You may find it helpful to interview students a second time, after completing the chapter, to determine their progress.

 Game (page 7) A game is provided to reinforce chapter concepts and may be used at appropriate times throughout the chapter.

 Resources for Lessons

 Reteach Each lesson has an associated Reteach worksheet. In general, the Reteach worksheet focuses on the same lesson content but uses a different approach, learning style, or modality than that used in the Student Edition. The Reteach worksheet closes with computational practice of the concept.

 Skills Practice The Skills Practice worksheet for each lesson focuses on the computational aspect of the lesson. The Skills Practice worksheet may be helpful in providing additional practice of the skill taught in the lesson. It also contains word problems that cover the skill. Spaces for students’ answers are provided on the worksheet.

 Homework Practice The Homework Practice worksheet provides an opportunity for additional computational practice. The Homework Practice worksheet includes word problems that address the skill taught in the lesson. Spaces for students’ answers are provided on the worksheet.

 Problem-Solving Practice The Problem-Solving Practice worksheet presents additional reinforcement in solving word problems that apply both the concepts of the lesson and some review concepts.

 Enrich The Enrich worksheet presents activities that extend the concepts of the lesson or offer a historical or multicultural look at the lesson’s concepts. Some Enrich materials are designed to widen students’ perspectives on the mathematics they are learning.

 Resources for Problem-Solving Lessons In recognition of the importance of problem-solving strategies, worksheets for problem-solving lessons follow a slightly different format. For problem-solving lessons, a two-page Reteach worksheet offers a complete model for choosing a problem-solving strategy. For each Problem-Solving Strategy lesson, Reteach and Homework
Practice worksheets offer reinforcement of the strategy taught in the Student Edition lesson. In contrast, the Problem-Solving Investigation worksheets include a model strategy on the Reteach worksheets and provide problems requiring several alternate strategies on practice worksheets.

**Assessment Options**

The assessment masters in the Chapter 7 Resource Masters offer a wide variety of assessment tools for monitoring progress as well as final assessment.

**Individual Progress Checklist** This checklist explains the chapter’s goals or objectives. Teachers can record whether a student’s mastery of each objective is beginning (B), developing (D), or mastered (M). The checklist includes space to record notes to parents as well as other pertinent observations.

**Chapter Diagnostic Assessment** This one-page test assesses students’ grasp of skills that are needed for success in the chapter.

**Chapter Pretest** This one-page quick check of the chapter’s concepts is useful for determining pacing. Performance on the pretest can help you determine which concepts can be covered quickly and which specific concepts may need additional time.

**Mid-Chapter Review** This one-page chapter test provides an option to assess the first half of the chapter. It includes both multiple-choice and free-response questions.

**Quizzes** Three free-response quizzes offer quick assessment opportunities at appropriate intervals in the chapter.

**Vocabulary Test** This one-page test focuses on chapter vocabulary. It is suitable for all students. It includes a list of vocabulary words and questions to assess students’ knowledge of the words.

**Oral Assessment** This two-page test consists of one page for teacher directions and questions and a second page for recording responses. Although this assessment is designed to be used with all students, the interview format focuses on assessing chapter content assimilated by ELL students. The variety of approaches includes solving problems using manipulatives as well as pencil and paper.

**Chapter Project Rubric** This one-page rubric is designed for use in assessing the chapter project. You may want to distribute copies of the rubric when you assign the project and use the rubric to record each student’s chapter project score.

**Foldables Rubric** This one-page rubric is designed to assess the Foldables graphic organizer. The rubric is written to the students, telling them what you will be looking for as you evaluate their completed Foldables graphic organizer.

**Leveled Chapter Tests**

- **Form 1** assesses basic chapter concepts through multiple-choice questions and is designed for use with on-level students.
- **Form 2A** is designed for on-level students and is primarily for those who may have missed the Form 1 test. It may be used as a retest for students who received additional instruction following the Form 1 test.
- **Form 2B** is designed for students with a below-level command of the English language.
- **Form 2C** is a free-response test designed for on-level students.
- **Form 2D** is written for students with a below-level command of the English language.
- **Form 3** is a free-response test written for above-level students.
- **Extended-Response Test** is an extended response test for on-level students.

**Student Recording Sheet** This one-page recording sheet is for the standardized test in the Student Edition.

**Cumulative Standardized Test Practice** This three-page test, aimed at on-level students, offers multiple-choice questions and free-response questions.

**Answers**

The answers for the Anticipation Guide and Lesson Resources are provided as reduced pages with answers appearing in black. Full size line-up answer keys are provided for the Assessment Masters.
Fill in the table.

<table>
<thead>
<tr>
<th></th>
<th>×10</th>
<th>×100</th>
<th>×1000</th>
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<tbody>
<tr>
<td>8</td>
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<tr>
<td>6</td>
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<td>4</td>
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<td>2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
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</tr>
</tbody>
</table>
This is an alphabetical list of new vocabulary terms you will learn in **Chapter 7: Multiplying One-Digit Numbers**. As you study the chapter, complete each term’s definition or description. Remember to add the page number where you found the term. Add this page to your math study notebook to review vocabulary at the end of the chapter.

<table>
<thead>
<tr>
<th>Vocabulary Term</th>
<th>Found on Page</th>
<th>Definition/Description/Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>addition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>division</td>
<td></td>
<td></td>
</tr>
<tr>
<td>estimate</td>
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<td></td>
</tr>
<tr>
<td>Multiplication</td>
<td>Product</td>
<td>Subtraction</td>
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<td>----------------</td>
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<td></td>
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</tbody>
</table>
Dear Family,

Today my class started Chapter 7: Multiply by One-Digit Numbers. I will be learning to multiply multiples of 10, 100, and 1,000. I will also be learning to estimate products by rounding. Here are my vocabulary words and an activity that we can do together.

Love, _________________

Key Vocabulary

**addition** An operation on two or more addends that is equal to a sum. \(4 + 4 = 8\).

**division** An operation on two numbers in which the first number is split into equal groups. Each group has a size equal to the second number.

**estimate** A number close to an exact value; an estimate indicates about how much. An estimate for $4.99 is $5.

**multiplication** An operation on two numbers to find their product. It can be thought of as repeated addition. \(5 \times 5 = 25\).

**product** The answer to a multiplication problem. It also refers to expressing a number as a product of its factors. \(4 \times 3 = 12\).

**subtraction** An operation on two numbers that tells the difference, when some or all are taken away. \(7 - 3 = 4\).

**whole number** The numbers \(0, 1, 2, 3, 4 \ldots\)

Activity

Collect 10 dimes, 20 nickels, and 30 pennies. If you multiplied each total number by 10, how many of each coin would you have?

Books to Read

*The Rajah’s Rice*  
by David Barry

*The King’s Chessboard*  
by David Birch

*Amanda Bean’s Amazing Dream*  
by Cindy Neuschwander
Estimada familia:

Hoy mi clase comenzó el Capítulo 7: Multiplica por números de un dígito. Aprenderé a multiplicar por múltiplos de 10, 100 y 1000 y también a estimar productos por redondeo. A continuación, están mis palabras de vocabulario y una actividad que podemos hacer juntos.

Cariños, ________________

Vocabulario clave

**Adición** Operación en dos o más sumandos que resulta en una suma. \(4 + 4 = 8\)

**División** Operación de dos números en la cual el primer número está dividido en grupos iguales. Cada grupo tiene un tamaño igual al segundo número.


**Multiplicación** Operación en dos números para calcular su producto. También se puede interpretar como una adición repetida. \(5 \times 5 = 25\)

**Producto** Respuesta de un problema de multiplicación. También se refiere a la expresión de un número como el producto de sus factores. \(4 \times 3 = 12\)

**Sustracción** Operación en dos números que indica la diferencia, cuando algunos o todos son eliminados. \(7 - 3 = 4\)

**Número entero** Los números 0, 1, 2, 3, 4 . . .

Actividad

Reúnan 10 monedas de 10¢, 20 monedas de 5¢, y 30 monedas de 1¢. Si multiplicaran cada número total por 10, ¿cuántas de cada moneda tendrías?

Libros recomendados

*The Rajah’s Rice* de David Barry

*The King’s Chessboard* de David Birch

*Amanda Bean’s Amazing Dream* de Cindy Neuschwander
Anticipation Guide

Multiply by One-Digit Numbers

**STEP 1**

*Before you begin Chapter 7*

- Read each statement.
- Decide whether you agree (A) or disagree (D) with the statement.
- Write A or D in the first column OR if you are not sure whether you agree or disagree, write NS (not sure).

<table>
<thead>
<tr>
<th>STEP 1 A, D, or NS</th>
<th>Statement</th>
<th>STEP 2 A or D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Knowing basic facts and number patterns can help you to multiply mentally.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>$2 \times 2,000 = 4,000$</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>$5 \times 10,000 = 50,000$</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>$3 \times 900 = 7,200$</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Using partial products can help you to multiply multi-digit numbers.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>When multiplying by a four-digit number, you should multiply the ones, then the tens, then the hundreds, and finally the thousands, and then add them all together.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Using estimation, $5 \times $3,300 is about $15,000$ ($5 \times $3,000).</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Using estimation, $4 \times 6,700$ is about $28,000$ ($4 \times 7,000$).</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>You multiply multi-digit numbers the same way that you multiply a two-digit number by a one-digit number.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>$7 \times 20 &gt; 6 \times 90$</td>
<td></td>
</tr>
</tbody>
</table>

**STEP 2**

*After you complete Chapter 7*

- Reread each statement and complete the last column by entering an A (agree) or a D (disagree).
- Did any of your opinions about the statements change from the first column?
- For those statements that you mark with a D, use a separate sheet of paper to explain why you disagree. Use examples, if possible.
Chapter 7 Game

Product plus!

Ready
You will need:
3 number cubes
Paper and pencil

Set
Clear some space, clear your mind, and get ready to roll!

GO!
1. Roll the cubes.
2. Use the cubes to create a 2-digit times 1-digit multiplication problem.
3. Have each player record his or her problem and find the product.
4. Roll the cubes again.
5. Create a problem and add the product to the product from the first roll.
6. Continue to roll and add the products. The winner is the first player whose sum reaches 1,000.
Reteach

Multiples of 10, 100, and 1,000

Multiply each number below by 10 by adding a zero to the end of the number.

1. $2 \times 10 = \underline{\hspace{2cm}}$
2. $3 \times 10 = \underline{\hspace{2cm}}$

Multiply each number below by 100 by adding two zeros to the end of the number.

3. $7 \times 100 = \underline{\hspace{2cm}}$
4. $1 \times 100 = \underline{\hspace{2cm}}$

Multiply each number below by 1,000 by adding three zeros to the end of the number.

5. $6 \times 1,000 = \underline{\hspace{2cm}}$
6. $9 \times 1,000 = \underline{\hspace{2cm}}$

Multiply. Use basic facts and patterns.

7. $3 \times 5 = 15$
   $3 \times 50 = 150$
   $3 \times 500 = \underline{\hspace{2cm}}$
   $3 \times 5,000 = 15,000$

8. $5 \times 2 = \underline{\hspace{2cm}}$
   $5 \times 20 = 100$
   $5 \times 200 = 1,000$
   $5 \times 2,000 = \underline{\hspace{2cm}}$

9. $4 \times 2 = 8$
   $4 \times 20 = 80$
   $4 \times 200 = \underline{\hspace{2cm}}$
   $4 \times 2,000 = \underline{\hspace{2cm}}$

10. $6 \times 5 = 30$
    $6 \times 50 = 300$
    $6 \times 500 = \underline{\hspace{2cm}}$
    $6 \times 5,000 = \underline{\hspace{2cm}}$

Multiply. Use basic facts and patterns.

11. $1 \times 1,000 = \underline{\hspace{2cm}}$
12. $6 \times 400 = \underline{\hspace{2cm}}$
13. $9 \times 200 = \underline{\hspace{2cm}}$
14. $8 \times 90 = \underline{\hspace{2cm}}$
15. $3 \times 9,000 = \underline{\hspace{2cm}}$
16. $2 \times 700 = \underline{\hspace{2cm}}$
17. $5 \times 50 = \underline{\hspace{2cm}}$
18. $4 \times 8,000 = \underline{\hspace{2cm}}$
19. $8 \times 6,000 = \underline{\hspace{2cm}}$
20. $7 \times 500 = \underline{\hspace{2cm}}$

Chapter 7
Multiply. Use basic facts and patterns.

1. $6 \times 30 = \underline{\hspace{2cm}}$

2. $5 \times 300 = \underline{\hspace{2cm}}$

3. $4 \times 3,000 = \underline{\hspace{2cm}}$

4. $5 \times 40 = \underline{\hspace{2cm}}$

5. $7 \times 300 = \underline{\hspace{2cm}}$

6. $9 \times 1,000 = \underline{\hspace{2cm}}$

7. $8 \times 20 = \underline{\hspace{2cm}}$

8. $7 \times 500 = \underline{\hspace{2cm}}$

9. $2 \times 9,000 = \underline{\hspace{2cm}}$

10. $9 \times 80 = \underline{\hspace{2cm}}$

11. $600 \times 5 = \underline{\hspace{2cm}}$

12. $7,000 \times 4 = \underline{\hspace{2cm}}$

13. $30 \times 2 = \underline{\hspace{2cm}}$

14. $7 \times 200 = \underline{\hspace{2cm}}$

15. $8 \times 700 = \underline{\hspace{2cm}}$

16. $9 \times 700 = \underline{\hspace{2cm}}$

17. $8 \times 50 = \underline{\hspace{2cm}}$

18. $700 \times 6 = \underline{\hspace{2cm}}$

19. $4,000 \times 9 = \underline{\hspace{2cm}}$

20. $5 \times 60 = \underline{\hspace{2cm}}$

Find the value of each variable.

21. $5 \times n = 2,500$ $\underline{\hspace{2cm}}$

22. $8 \times n = 32,000$ $\underline{\hspace{2cm}}$

23. $1 \times n = 10$ $\underline{\hspace{2cm}}$

24. $60 \times n = 120$ $\underline{\hspace{2cm}}$
Multiply. Use basic facts and patterns.

1. \(4 \times 1 = \) ________  
2. \(6 \times 7 = \) ________
3. \(4 \times 10 = \) ________  
4. \(6 \times 70 = \) ________
5. \(4 \times 100 = \) ________  
6. \(6 \times 700 = \) ________
7. \(4 \times 1,000 = \) ________  
8. \(6 \times 7,000 = \) ________

Multiply. Use mental math.

3. \(2 \times 70 = \) ________  
4. \(9 \times 500 = \) ________
5. \(7 \times 4,000 = \) ________

ALGEBRA Find the value of each variable.

6. \(30 \times n = 120 \) _____  
7. \(6 \times n = 3,600 \) _______

ALGEBRA Find the value of each expression if \( k = 2 \).

8. \(20 \times k = \) _____  
9. \(k \times 500 = \) _______

10. Joe bought a house. His payments are \$1,000\ a month. How much will he pay for 5 months? _______

Spiral Review

Tell whether each equation is balanced. Explain. (Lesson 6–7)

11. \(48 \div 8 = (4 \times 3) \div 2 \)
12. \(6 \times 5 \times 2 = 2 \times 7 \times 3 \)
13. \(3 \times 9 \times 2 = 6 \times 3 \times 3 \)

Complete each equation to make it balanced.

14. \((16 - 4) \times ____ = 3 \times 8 \)  
15. \(3 \times (10 - 3) = ____ \times 7 \)
Problem-Solving Practice

Multiples of 10, 100, and 1,000

Solve.

1. There were 20 pirates on a ship. Each one had 1 eye patch. How many eye patches were on the ship in all?

2. The pirates had 6 treasure chests with gold coins. Each chest had 9,000 gold coins. How many gold coins did the pirates have in all?

3. The pirates traveled 50 miles every day. They have been at sea for 8 days. How many miles have they traveled altogether?

4. One day the pirates sighted 2 whales every hour for 10 hours. How many total whales were sighted?

5. Over the 8 days that they have been at sea, the pirates ate 20 fish each day. How many fish were eaten in all?

6. The pirates plan to explore 3 islands which will require walking 20 miles per day. How many miles will they have walked if it takes 4 days to explore all 3 islands?

7. Four of the pirates have been away at sea for 200 days. How many days total have these four pirates been away at sea?
Enrich
ExTENding Patterns

The numbers in these patterns are multiples of 10. Continue each pattern and write the rule.

1. 200, 2,000, 20,000, 200,000, ________________
   The rule is: ________________

2. 10, 50, 250, 1,250, ________________
   The rule is: ________________

3. 9,600, 4,800, 2,400, 1,200, ________________
   The rule is: ________________

4. 30, 60, 120, 240, ________________
   The rule is: ________________

5. 3,400,000,000, 34,000,000, 340,000, 3400, ________________
   The rule is: ________________

Solve these problems. Use the answers to the fill in the blanks so that the paragraph makes sense.

\[ 3 \times 1 = \quad 3 \times 10 = \quad 3 \times 100 = \]

About 126 kinds of fish and 346 kinds of mammals are on the endangered species list. The mountain gorilla, one of ____ kinds of gorillas that live in Africa, is endangered. Fewer than 640 mountain gorillas exist in the wild. They live in groups and eat mostly plants. The average male weighs more than ____ pounds and lives between ____ and 50 years.
Jeff wants to invite some friends over for dinner. He has a large rectangular table and knows there is room to seat 10 people on each of the long sides and 4 on the two ends of his table.

If Jeff wants everyone seated at the table, how many friends can he invite? Is it reasonable for him to invite 40 people?

**Step 1: Understand. What facts do you know?**
Jeff can seat 10 people on each of the long sides of his table.
Jeff can seat 4 people on each of the ends of his table.
Jeff wants everyone seated at the table.

**Step 2: Plan. What you need to know?**
How many friends is it reasonable for Jeff to invite?

**Step 3: Solve. What math do you need to do?**
You need to figure out the number of people that can sit at the table, based on all of the amounts that you have.
2 long sides, 10 people each: $10 \times 2 = 20$
2 ends, 4 people each: $4 \times 2 = 8$
Add the amounts: $20 + 8 = 28$ people can sit at the table.

**Step 4: Check. See if your answer makes sense.**
When you compare the amount that can sit at the table, 28, to the amount of people that Jeff wants to invite, 40, you can see that it is not reasonable for him to invite 40 guests. If Jeff only has seats for 28, how many friends should he invite? (Remember, Jeff needs a seat too!)

**Use the steps above to solve the following problem.**
Brittany was given 3 movies to watch in her free time. Each movie is 100 minutes long. Brittany has 70 minutes to relax before she goes to work every day, Monday through Friday. Is it reasonable for her to expect to watch all three movies, starting Monday and ending on Friday?
Step 1: Understand. What facts do you know?

________________________________________________________________________

________________________________________________________________________

Step 2: Plan. What you need to know?

________________________________________________________________________

________________________________________________________________________

Step 3: Solve. What math do you need to do?

________________________________________________________________________

________________________________________________________________________

Figure out the total minutes it will take to watch all three movies.

________________________________________________________________________

Step 4: Check. See if your answer makes sense.

________________________________________________________________________

________________________________________________________________________

Decide whether each answer is reasonable. Explain your reasoning.

1. Sandy owns her own pizza restaurant. Her profit is about $2,000 a week. She needs to put aside $400 a week for taxes. Is it reasonable for her to spend $1,900 a week? ________________

2. Sandy works 5 days a week. Her total number of hours each week is 50. Is it reasonable to say that Sandy works 7 hours a day? ________________
Skills Practice

Problem-Solving Skill: Reasonable Answers

Decide whether each answer is reasonable. Explain your reasoning.

1. Jill is in charge of the school fair that will go on for a week. There will be 10 different volunteers helping each day. Is 70 a reasonable estimate of the number of people who are expected to volunteer? ________________________________

2. Jill will have to walk home from the fair each day for the week. The fair is 1 mile from her home. Is it reasonable to say that she will walk more than 10 miles before the week is over? ________________________________

3. Jill expects that the sale of donated soda will bring in about $50 a day for the week. Is it reasonable for her to expect at least $500 from soda sales by the end of the week? ________________________________

4. Jill was able to collect donations of about $60 a month for the 10 months that she was planning the fair. She saved all of the money. In addition, she was given $350 that had been put aside from the previous fair. She needs $1,000 to rent a ferris wheel. Is it reasonable to say that she can pay for the ferris wheel rental in full? ________________________________

5. The table above shows the numbers of different prizes Jill collected for the fair. Is it reasonable for her to say that she has close to 300 prizes to give to those who win games? ________________________________

6. Jill has spent a total of 6,000 minutes organizing the fair. Is it reasonable for her to claim that she organized the fair in under 10 hours? ________________________________

<table>
<thead>
<tr>
<th>Types of Prizes</th>
<th>Number Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>stuffed animals</td>
<td>98</td>
</tr>
<tr>
<td>plastic models</td>
<td>54</td>
</tr>
<tr>
<td>yo-yos</td>
<td>96</td>
</tr>
<tr>
<td>stopwatches</td>
<td>49</td>
</tr>
</tbody>
</table>

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Homework Practice

Problem-Solving Skill: Reasonable Answers

Decide whether each answer is reasonable. Explain your reasoning.

1. Sam travels from Baltimore to Boston each year. It takes him 10 hours to get to Boston. He stops 3 times, for an hour each time. If he only stopped once, is it reasonable to say that he could get there in 6 hours? ________________

2. The table below shows Sam’s expenses for his trip to Boston. Was it reasonable for Sam to say that the trip cost him close to $400?

<table>
<thead>
<tr>
<th>Expenses</th>
<th>Amount Spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>$103</td>
</tr>
<tr>
<td>Gas</td>
<td>$252</td>
</tr>
<tr>
<td>Tolls</td>
<td>$36</td>
</tr>
</tbody>
</table>

3. Write a problem that would have $1,000 as a reasonable answer.

Spiral Review

Multiply. Use mental math. (Lesson 7–1)

4. $2 \times 4,000 = \underline{8,000}$

5. $3 \times 80 = \underline{240}$

6. $9 \times 600 = \underline{5,400}$

7. $4 \times 5,000 = \underline{20,000}$

8. $5 \times 50 = \underline{250}$

9. $6 \times 900 = \underline{5,400}$

10. $6 \times 200 = \underline{1,200}$

11. $8 \times 1,000 = \underline{8,000}$

12. $9 \times 30 = \underline{270}$

13. $5 \times 70 = \underline{350}$

ALGEBRA Find the value of each variable.

14. $n \times 20 = 60 \underline{3}$

15. $t \times 8 = 56,000 \underline{7,000}$
Today is Tuesday and Scott has a book report due a week from next Friday. His favorite stories are science fiction.

1. If Scott starts reading a 72-page book on Tuesday, and he reads 9 pages every day, on what day of the week will he finish reading the book?

   2. What if Scott reads 10 pages a day?

   3. On Thursday, October 2, Scott’s teacher announced that three book reports were due by the end of the month – on each of the dates that is a multiple of ten. On what days and dates are the book reports due?

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reteach

Use Rounding to Estimate Products

To estimate products, round numbers. Then use basic facts and multiply. Look at the number lines below.

When a number is halfway between two numbers, round up.

<table>
<thead>
<tr>
<th></th>
<th>Round the greater factor to its greatest place.</th>
<th>Use basic facts and multiply.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>$59 \times 5$</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>$579 \times 4$</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>$788 \times 3$</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>$6,222 \times 6$</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>$8,951 \times 4$</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>$42 \times 7$</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>$6,450 \times 8$</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>$683 \times 4$</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>$7,395 \times 3$</td>
<td></td>
</tr>
</tbody>
</table>
Skills Practice

Use Rounding to Estimate Products

Estimate each product.

1. $5 \times 21 =$
2. $3 \times 39 =$
3. $7 \times 46 =$
4. $85 \times 6 =$
5. $17 \times 9 =$
6. $81 \times 3 =$
7. $2 \times 298 =$
8. $4 \times 305 =$
9. $478 \times 6 =$
10. $5 \times 784 =$
11. $612 \times 9 =$
12. $6 \times 556 =$
13. $2 \times 1,987 =$
14. $3 \times 2,126 =$
15. $7 \times 1,905 =$
16. $8 \times 3,495 =$
17. $4,723 \times 4 =$
18. $5 \times 7,118 =$
19. $41 \times 6 =$
20. $28 \times 7 =$
21. $96 \times 2 =$
22. $17 \times 8 =$
23. $31 \times 9 =$
24. $255 \times 4 =$
25. $488 \times 3 =$
26. $563 \times 5 =$
27. $2,307 \times 5 =$
28. $7,596 \times 6 =$

Solve.


30. An ambulance travels about 386 miles a day. About how many miles does it travel in a week?
Homework Practice

Use Rounding to Estimate Products

Estimate each product.

1. \( 2 \times 36 = \) 
2. \( 96 \times 3 = \) 
3. \( 6 \times 28 = \) 
4. \( 68 \times 4 = \) 
5. \( 5 \times 41 = \) 
6. \( 5 \times 423 = \) 
7. \( 6 \times 523 = \) 
8. \( 3 \times 667 = \) 
9. \( 2 \times 366 = \) 
10. \( 4 \times 712 = \)

Solve.

11. An airline pilot travels about 6,457 miles a week. About how many miles would she travel in a month?

12. If the L.A. Dodgers win about 21 games a month, about how many games would they win after three months?

Spiral Review

Decide whether each answer is reasonable. Explain your reasoning. (Lesson 7-2)

13. Ted Williams had about 30 home runs a season. Is it reasonable to say that he had 300 home runs within a 6-year period?

14. Roger Clemens pitched about 16 winning games per year. After he had played 8 years for the Boston Red Sox, is it reasonable to say that he had about 130 wins?
Problem-Solving Practice

Use Rounding to Estimate Products

Estimate each product.

1. Each fourth-grade class has 28 students. There are three classes in the school. About how many fourth-grade students are there in all?

   

2. Pizzas cost $11 each. Miss Adams buys 4 pizzas. About how much does she spend on pizzas?

   

3. Chad’s family wants to buy 6 different board games. Each board game costs $17.99. About how much will all of the board games cost?

   

4. Habib buys 3 books that cost $9 each. About how much money does he spend on books?

   

5. Mr. Bell buys 4 shirts that cost $17 each. He has $50 to spend. Does he have enough money? Explain.

   

In the center of each flower below, you will see a range of products. Use your rounding and estimation skills to complete the multiplication problems on the petals so that the answers fall into that range of products.

Flower 1

Range of Products: 125–150
5 petals:

3 × _____
4 × _____
5 × _____
6 × _____
7 × _____

Flower 2

Range of Products: 700–800
5 petals:

6 × _____
7 × _____
8 × _____
9 × _____
10 × _____
Reteach

Multiply Two-Digit Numbers

Find $13 \times 3$.
First, think in terms of tens and ones. 13 has 1 ten and 3 ones.
Second, set up the problem with the greater number on top.

$13 \times 3$

**Step 1**
**Multiply the ones.**
$13 \times 3 = 9$

**Step 2**
**Multiply the tens.**
$10 \times 3 = 30$

The tens (30) added to the ones (9) = 39

Find $13 \times 5$.
First, think in terms of tens and ones. 13 has 1 ten and 3 ones.
Second, set up the problem with the greater number on top.

$13 \times 5$

**Step 1**
**Multiply the ones.**
$3 \times 5 = 15$

This time the product of the ones is larger. You need to regroup. You have 1 ten and 5 ones. You need to add that ten to the other tens.

**Step 2**
**Multiply the tens. Add the new ten.**
$10 \times 5 = 50 + 10$
$13 \times 5 = 65$

The tens (50 + 10) added to the ones (5) = 65

Multiply. Check for reasonableness.

1. $26 \times 5 = \hspace{1cm}$
2. $22 \times 7 = \hspace{1cm}$
3. $45 \times 3 = \hspace{1cm}$
Skills Practice

Multiply Two-Digit Numbers

Multiply.

1. \(21 \times 7 = \) _____
2. \(38 \times 5 = \) _____
3. \(54 \times 2 = \) _____
4. \(49 \times 6 = \) _____
5. \(17 \times 4 = \) _____
6. \(25 \times 9 = \) _____
7. \(53 \times 4 = \) _____
8. \(28 \times 7 = \) _____
9. \(61 \times 8 = \) _____
10. \(39 \times 2 = \) _____
11. \(62 \times 2 = \) _____
12. \(38 \times 4 = \) _____
13. \(91 \times 3 = \) _____
14. \(46 \times 5 = \) _____
15. \(78 \times 6 = \) _____
16. \(98 \times 5 = \) _____
17. \(76 \times 6 = \) _____
18. \(24 \times 9 = \) _____
19. \(56 \times 7 = \) _____
20. \(48 \times 8 = \) _____
21. \(66 \times 6 = \) _____
22. \(77 \times 7 = \) _____
23. \(94 \times 3 = \) _____
24. \(59 \times 4 = \) _____
25. \(44 \times 9 = \) _____
26. \(24 \times 7 = \) _____
27. \(19 \times 8 = \) _____
28. \(67 \times 5 = \) _____
29. \(84 \times 4 = \) _____
30. \(91 \times 2 = \) _____

31. Look back over this page and circle every product greater than 300.

______________________________
Homework Practice

Multiply Two-Digit Numbers

Multiply.

1. \(73 \times 3 = \) 
2. \(88 \times 4 = \) 
3. \(44 \times 5 = \) 
4. \(74 \times 5 = \) 
5. \(31 \times 7 = \) 
6. \(85 \times 4 = \) 
7. \(68 \times 8 = \) 
8. \(77 \times 6 = \) 
9. \(32 \times 9 = \) 
10. \(97 \times 2 = \) 
11. \(65 \times 5 = \) 
12. \(66 \times 8 = \) 
13. \(33 \times 6 = \) 
14. \(94 \times 3 = \) 
15. \(96 \times 3 = \) 
16. \(59 \times 7 = \)

Solve.

17. A rectangle is 5 tiles wide by 13 tiles high. How many tiles are in the rectangle?

18. Books are stacked in 3 stacks with 17 books in each stack. How many books are in the stacks?

Spiral Review

Estimate each product. (Lesson 7-3)

19. \(89 \times 2 = \) 
20. \(396 \times 4 = \) 
21. \(6 \times 105 = \) 
22. \(3 \times 412 = \) 
23. \(4 \times 209 = \) 
24. \(3 \times 970 = \)

Solve.

25. A football player runs about 104 yards each game. After he has played 2 games, about how many yards has he run?
1. There are 3 birds on the ground. Each bird eats 10 worms. How many worms are eaten all together?

2. Simon has 12 CDs. He burns 3 copies of each. How many CDs did Simon make?

3. The school auditorium has 4 rows of seats. There are 18 seats in each row. How many students can sit in the auditorium?

4. The school cafeteria has 6 rows of tables. Each row has 22 places to sit. How many students can eat in the school cafeteria?

5. Scott is playing a game of memory with some picture cards. He makes 4 rows and puts 23 cards in each row. How many picture cards is Scott using in this game?

6. Kate would like to play the memory game, too. She adds her cards to the game. Now, there are 8 rows, and 24 cards in each row. How many cards are there now?

7. John wants to buy birthday gifts for 8 friends. He can spend $19 for each gift. How much will he spend in all?

8. Caroline makes $5 an hour pet-sitting for the neighbors. Last summer she worked 31 hours. How much money did Caroline earn?
Use the clues to figure out each factor. Write them in the two top boxes. Then multiply and write the product in the third box.

1. Prime number between 25 and 30 \times \text{Odd number greater than 6 and divisible by 3} \\

2. Letters in “multiplication” \times \text{Quarts in a gallon} \\

3. Square number close to 50 \times \text{Half a dozen} \\

4. Inches in a yard \times \text{Days in a week} \\

5. Five times eleven \times \text{Sides of an octagon}
Choose the Best Strategy

Here are five problem-solving strategies and tips on how to use them.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>How to Use It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the four-step plan</td>
<td>Understand the facts. Plan your strategy. Solve the problem using the strategy. Check your work.</td>
</tr>
<tr>
<td>Draw a picture</td>
<td>Create a picture from the words in the problem to help you find the answer.</td>
</tr>
<tr>
<td>Look for a pattern</td>
<td>Spot whether there is something in the problem that repeats or looks the same.</td>
</tr>
<tr>
<td>Make a table</td>
<td>Organize data by making a table with columns for each category and rows for each number. Fill in the numbers to solve the problem.</td>
</tr>
<tr>
<td>Work backward</td>
<td>Start with the information given in the problem. Then use subtraction to find the answer to the problem.</td>
</tr>
</tbody>
</table>

Use any strategy shown below to solve. Tell what strategy you used.

- Use the four-step plan
- Draw a picture
- Look for a pattern
- Make a table
- Work backward

1. Bob wants to treat his 3 friends to rides at an amusement park. All-day passes cost $10. What will Bob have to pay for himself and his friends to go on the rides all day?
2. Russ is setting up his science project about the seashore at the fair. He has several rocks at the edge of the water, on the right side of the display. He has sand on the left side. Five starfish are on the right side of the rocks, touching the water. Are the starfish next to the sand?

3. Fill in the missing number. 3, 6, 12, 24, ____, 96, 192

4. There are 5 marbles in each bag. How many marbles do you have if you are given 10 bags of red marbles, 12 bags of yellow marbles, and 8 bags of blue marbles?

5. Mary now has 5 pairs of sneakers. Her friend gave her 1 white pair yesterday. Her mom bought her new pink ones this morning. How many pairs did she have originally?

6. Hank is planting pepper plants. In the first row, he plants 1 pepper. In the second row, he plants 2. In the third row, he plants 4. In the fourth row he plants 8. How many peppers will he plant in the sixth row?

7. Now, Jay has a collection of 20 baseball hats. He just got a new one on a school trip. Last week, his father’s friend gave him 6 hats. How many hats did he have originally?

8. Jerry was late to school all week. On Monday, Tuesday, and Wednesday; Jerry was 30 minutes late. On Thursday and Friday he was 50 minutes late. The principal told him that he would have to stay after school and make up all of the time before the end of the year. How many minutes will Jerry have to stay after school?
**Problem-Solving Strategies**

- Draw a picture
- Make a table
- Look for a pattern
- Work backward

Use any strategy shown above to solve. Tell what strategy you used.

1. Fred is buying soda and snacks for a school event. He has to walk to the store and can only carry a limited amount at one time. He walked to the store 4 times. The first time he brought back 10 items, the second time 32, the third time 12, and the last time 15. How many items did he purchase?

2. Joe is building a storage shed. He needs 200 nails for each one of the 4 sides, 500 nails for the roof, 100 nails for the door, and 200 nails for the steps. How many nails will he need in all?

3. Andy is creating a design using colored shapes. He is starting with a triangle and ending with another triangle. In between the triangles, he has a circle to the left of a square. What does the design look like?

4. Gary rakes leaves. The first day, he fills 6 bags. The second day, he fills 8 bags. The third day, he fills 10 bags of leaves. If this pattern continues, how many bags will he fill on the fourth day?

5. Sherri now has 25 pairs of earrings. Last week she was given 2 pairs for her birthday. Just yesterday, her older sister gave her 2 sets of earrings. How many sets of earrings did she have originally?
Use any strategy to solve.

1. Joe has 5 new notebooks for school. Two of those notebooks have 3 sections and three have 5 sections. Joe needs 20 sections in all. Does he have enough? ____________________________

2. Each class uses 1,000 sheets of paper every week. The school uses a total of 9,000 sheets of paper every week. How many classes are in the school? ____________________________

3. Write a problem that you can solve by looking for a pattern. Explain the pattern you used.

   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________

Solve.

20. There are 26 teams in the basketball league. Each team has 9 players on its roster. How many players are there all together?

   __________________________________________

Multiply. (Lesson 7-4)

4. 55 \times 5 = _____
5. 75 \times 6 = _____
6. 8 \times 47 = _____
7. 6 \times 39 = _____
8. 2 \times 98 = _____
9. 84 \times 6 = _____
10. 4 \times 52 = _____
11. 63 \times 7 = _____
12. 29 \times 9 = _____
13. 32 \times 5 = _____
14. 4 \times 60 = _____
15. 66 \times 8 = _____
16. 9 \times 22 = _____
17. 72 \times 8 = _____
18. 33 \times 5 = _____
19. 2 \times 90 = _____
Angie has to sell 72 calendars for her school fundraiser.

1. If Angie starts selling on Thursday, and she sells 9 calendars every day, on what day of the week will she sell all of the calendars?

2. What if Angie sells 12 calendars a day?

On Monday, Angie’s teacher announced that the fundraiser would last for a total of 4 weeks. If Angie sold at a rate of 9 calendars a day, how many would she sell by the end of the fundraiser? Use the worksheet to help you find the answer.

By Week 1

By Week 2

By Week 3

By Week 4
Multiply by following steps.

Find $22 \times 6$.

**Step 1**
Think in terms of tens and ones. $22$ is 2 tens and 2 ones.

<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Step 2**
Multiply the ones.

<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

\[
\begin{array}{c}
0 \\
22 \\
\times \\
6 \\
\hline
12 \\
\end{array}
\]

Regroup 12 ones as 1 ten + 2 ones. Be sure to put the 1 in the tens column above the two.

**Step 3**
Multiply the tens.

<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

\[
\begin{array}{c}
6 \\
22 \\
\times \\
6 \\
\hline
12 \\
\end{array}
\]

$6 \times 2$ tens $= 12$ tens. Add the regrouped ten.

\[
\begin{array}{c}
12 \\
\end{array}
\]

$12$ tens $+ 1$ ten $= 13$ tens.

\[
\begin{array}{c}
132 \\
\end{array}
\]

Regroup 13 tens as 1 hundred and 3 tens.

**Multiply.**

1. 
<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

\[
\begin{array}{c}
7 \\
\end{array}
\]

2. 
<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

\[
\begin{array}{c}
6 \\
\end{array}
\]
Multiply.
1. 114 \times 6 = 
2. 261 \times 4 = 
3. 628 \times 8 = 
4. 739 \times 5 = 
5. 295 \times 3 = 
6. 375 \times 5 = 
7. 648 \times 7 = 
8. 1,525 \times 6 = 
9. 1,313 \times 9 = 
10. 4,512 \times 5 = 
11. 6,421 \times 3 = 
12. $1,225 \times 9 = 

ALGEBRA Find the value of each expression if \( t = 7 \).
13. \( t \times 385 = \)
14. \( t \times 7,441 = \)
15. \( t \times 1,123 = \)

Compare. Use \( >, <, \) or \( = \).
16. 396 \times 4 ____ 5 \times 423
17. 4 \times 712 ____ 3 \times 412
18. 3 \times 656 ____ 7 \times 366
19. 6 \times 523 ____ 2 \times 379
20. 2 \times 961 ____ 8 \times 612
Homework Practice
Multiply Multi–Digit Numbers

Multiply.
1. \(416 \times 6 = \underline{__________}\)  
2. \(293 \times 5 = \underline{__________}\)  
3. \(153 \times 4 = \underline{__________}\)  
4. \(310 \times 3 = \underline{__________}\)  
5. \(2,135 \times 4 = \underline{__________}\)
6. \(5,216 \times 6 = \underline{__________}\)  
7. \($3,591 \times 3 = \underline{__________}\)  
8. \($4,325 \times 9 = \underline{__________}\)  
9. \(2,135 \times 2 = \underline{__________}\)
10. \(5,112 \times 4 = \underline{__________}\)

ALGEBRA Find the value of each expression if \(n = 3\).
11. \(n \times 6,421 = \underline{__________}\)  
12. \(n \times 1,913 = \underline{__________}\)

Solve.
13. There are 9 children in the scout troop. Each of them contributed 127 hours to community clean-up projects. What is the total number of hours the scout troop contributed?

14. Five people donated to the school library this year. Each person donated $225. How much money did the library get in donations this year?

Spiral Review
Use any strategy to solve. (Lesson 7-5)
15. For the past 6 weeks, fourth-grade safety guards have worked after school and waited with first-grade students until their parents came for them. The first week they waited with 5 first-graders, the second week with 7, the third week with 9. If the pattern continued, how many first-graders did they wait with for the fourth, fifth, and sixth weeks?

16. Twenty babysitters in the babysitters club earned a total of $400 for the club each month. How much would 40 babysitters earn?
Solve.

1. The first floor of an apartment building has space for 112 small apartments. The next 5 floors are the same. The first 6 floors of the apartment building have space for how many apartments?

2. Each year 6,578 people eat lunch in a certain restaurant. During a period of 5 years, how many people will eat in this restaurant?

3. The maximum number of people that can be on the top of a building at one time is 400. By 10 A.M. one morning there had already been 4 groups of 398 people to the top. How many people have been to the top of the building already?

4. In one greenhouse, there were 427 plants. If there were 5 greenhouses growing the same number of plants, how many plants would there be altogether?

5. A famous concert hall seats 9,551 people. Every seat was filled for the 9 concerts that took place in June. How many people heard a concert in this concert hall in June?

6. A taxi driver kept track of how many people were friendly to him in a day. Sixteen people told him what they were doing in the city, 8 asked him if he had a family, 23 told him what they liked best about the city, and 3 asked if they could buy him coffee. The taxi driver wanted his friends to believe that people are friendly, so he tripled his numbers. How many people did the taxi driver say were friendly to him?
Enrich

More Multiples

Using only 1, 2, 3, and 6 to make three-digit numbers, find six even multiples of three. (You may not repeat these numerals in the same three-digit number, so numbers like 222 are not allowed.)

Write the six even multiples of three in order from least to greatest:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Use them, in that order, to complete these multiplication problems. Then solve the problems.

1. \[ \underline{\hspace{1cm}} \underline{\hspace{1cm}} \underline{\hspace{1cm}} \times 5 \]
2. \[ \underline{\hspace{1cm}} \underline{\hspace{1cm}} \underline{\hspace{1cm}} \times 6 \]
3. \[ \underline{\hspace{1cm}} \underline{\hspace{1cm}} \underline{\hspace{1cm}} \times 9 \]

4. \[ \underline{\hspace{1cm}} \underline{\hspace{1cm}} \underline{\hspace{1cm}} \times 4 \]
5. \[ \underline{\hspace{1cm}} \underline{\hspace{1cm}} \underline{\hspace{1cm}} \times 7 \]
6. \[ \underline{\hspace{1cm}} \underline{\hspace{1cm}} \underline{\hspace{1cm}} \times 8 \]
Reteach

Multiply Across Zeros

You can use the same steps to multiply numbers that contain zeros that you use to multiply any multidigit number.

Find $305 \times 4$.

**Step 1**
Think in terms of hundreds, tens, and ones.
$305$ is $3$ hundreds $+ 0$ tens $+ 4$ ones.

**Step 2**
Multiply the ones.

$$
\begin{array}{c}
\text{2} \\
\text{305} \\
\times \text{4} \\
\hline
\text{4 \times 5 = 20} \\
\text{Regroup 20 ones as 2 tens + 0 ones. Be sure to put the 2 in the tens column above the 0.}
\end{array}
$$

**Step 3**
Multiply the tens.

$$
\begin{array}{c}
\text{2} \\
\text{305} \\
\times \text{4} \\
\hline
\text{4 \times 0 tens = 0 tens} \\
\text{20 Add the regrouped 2 tens. 0 tens + 2 tens = 2 tens}
\end{array}
$$

**Step 4**
Multiply the hundreds.

$$
\begin{array}{c}
\text{2} \\
\text{305} \\
\times \text{4} \\
\hline
\text{4 \times 3 hundreds = 1 thousand +} \\
\text{2 hundreds. 0 ones + 2 tens +} \\
\text{1220 2 hundreds + 1 thousand = 1220}
\end{array}
$$

Multiply.

1. $402 \times 8 = \underline{}$
2. $7,009 \times 3 = \underline{}$
3. $5 \times 301 = \underline{}$
4. $6 \times 9,020 = \underline{}$
5. $2 \times 1,099 = \underline{}$
6. $7 \times 8,107 = \underline{}$
7. $806 \times 9 = \underline{}$
8. $5,007 \times 4 = \underline{}$
Multiply.

1. \(709 \times 6 = \) 
2. \(450 \times 3 = \) 
3. \(805 \times 5 = \) 
4. \(6,058 \times 8 = \) 
5. \(5,608 \times 4 = \) 
6. \(5,079 \times 8 = \) 
7. \(1,047 \times 7 = \) 
8. \(2,009 \times 2 = \) 
9. \(4,010 \times 3 = \) 
10. \(7,028 \times 4 = \) 
11. \(5,001 \times 9 = \) 
12. \(7,084 \times 9 = \) 
13. \(4,807 \times 7 = \) 
14. \(3,009 \times 4 = \) 
15. \(9,012 \times 6 = \) 
16. \(7,040 \times 8 = \) 
17. \(1,027 \times 5 = \) 
18. \(5,405 \times 5 = \) 
19. \(3,004 \times 3 = \) 
20. \(4,303 \times 2 = \) 
21. \(1,009 \times 3 = \) 
22. \(9,300 \times 1 = \) 
23. \(9,099 \times 9 = \)

Solve.

24. Tamara has 5 tall trees in her back yard. Each tree is 108 feet tall. How tall are all the trees put together?

25. Look back over the page and circle every product that has a 3 in the tens place. Draw a box around every product that has a 2 in the thousands place.
Multiply Across Zeros

Multiply.

1. $460 \times 6 = \underline{\phantom{000}}$
2. $308 \times 8 = \underline{\phantom{000}}$
3. $6,404 \times 3 = \underline{\phantom{000}}$
4. $5,060 \times 5 = \underline{\phantom{000}}$
5. $7,032 \times 4 = \underline{\phantom{000}}$
6. $3,056 \times 6 = \underline{\phantom{000}}$
7. $7,501 \times 4 = \underline{\phantom{000}}$
8. $7,810 \times 8 = \underline{\phantom{000}}$
9. $2,058 \times 3 = \underline{\phantom{000}}$
10. $8,040 \times 2 = \underline{\phantom{000}}$

For exercise 11, complete the table.

11. Multiply by 5,809.

<table>
<thead>
<tr>
<th>Input</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Solve.

12. Jaime has 8 boxes of beads. Each box has 50 beads in it. How many beads does she have in all? ________________

Spiral Review

Solve (Lesson 7-6)

13. $9,732 \times 9 = \underline{\phantom{000}}$
14. $2,581 \times 2 = \underline{\phantom{000}}$

15. There are 182 bulletin boards throughout the school. Each bulletin board is covered by 8 large pieces of colored paper. Every summer the colored paper is replaced. How many sheets of paper does it take to cover the bulletin boards? ________________

16. The school bulletin boards display at least 1,000 students’ papers. The bulletin boards are changed 9 times during the school year. At least how many student papers are displayed over the year? ________________
Solve.

1. The school has 206 boxes of chalk. Each box has 8 pieces of chalk inside. How many pieces of chalk are there in all?

2. There are 401 windows in the school. Each window has 9 panes. When Mr. Parker washes each window pane by hand, how many panes does he wash?

3. The art teacher ordered 201 sets of markers for her students to use. Each set has 32 markers. How many markers did she order in all?

4. Each time the art class paints pictures, 108 brushes must be cleaned. If the art class paints pictures 9 times during the year, how many brushes will be cleaned?

5. Brent rode his bicycle 4 miles during the last day of August. His bicycle has an odometer that measures how far in miles and yards. Each mile has 1,760 yards. How many yards did Brent ride on the last day of August?

6. Cassandra ran 7 miles during the week. She wears a pedometer that measures how far she runs in miles and yards. Each mile has 1,760 yards. How many yards did Cassandra run in the week?
Enrich

Mental Math Challenge

Choose factors from the box to make true multiplication equations.

<table>
<thead>
<tr>
<th>3</th>
<th>810</th>
<th>5</th>
<th>608</th>
</tr>
</thead>
<tbody>
<tr>
<td>402</td>
<td>6</td>
<td>2,003</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>4,005</td>
<td>4</td>
<td>906</td>
</tr>
<tr>
<td>306</td>
<td>2</td>
<td>5,002</td>
<td>8</td>
</tr>
</tbody>
</table>

1. \[\square \times \square = 1,206\]
2. \[\square \times \square = 1,530\]
3. \[\square \times \square = 14,021\]
4. \[\square \times \square = 3,240\]
5. \[\square \times \square = 24,030\]
6. \[\square \times \square = 1,836\]
7. \[\square \times \square = 40,016\]
8. \[\square \times \square = 5,472\]
## Individual Progress Checklist

<table>
<thead>
<tr>
<th>B</th>
<th>D</th>
<th>M</th>
<th>Goal</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>multiply multiples of 10 using basic facts and patterns</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>multiply multiples of 100 using basic facts and patterns</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>multiply multiples of 1,000 using basic facts and patterns</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>evaluate whether a solution to a problem is reasonable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>estimate products by rounding</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>multiply a two-digit number by a one-digit number</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>choose the best strategy to solve a problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>multiply a three-digit number by a one-digit number</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>multiply multidigit numbers with zeros by a one-digit number</td>
<td></td>
</tr>
</tbody>
</table>

### Notes

__________________________

__________________________

__________________________

__________________________

__________________________

__________________________
Chapter Diagnostic Assessment

Read each question carefully. Write your answer on the line provided.

Multiply. Use models if needed.

1. \(3 \times 4\)  
2. \(3 \times \$2\)  
3. \(4 \times 5\)  
4. \(6 \times \$4\)  
5. Mrs. Williams wants to buy 5 soccer balls for her class. How much will she spend?

Identify the place value of the underlined digit.

6. 1,576  
7. \$7,432\  
8. 32,187  
9. 889  
10. Lake Tahoe, in Tahoe City, California, is 1,645 feet deep. Identify the place value of each digit in 1,645.

Round each number to its greatest place value.

11. 37  
12. 368  
13. 3,487  
14. \$42,898\  
15. There are 10,187 people in Chen's town. Approximately how many people live in his town?
Chapter Pretest

Read each question carefully. Write your answer on the line provided.

Multiply.

1. \(7 \times 900 = \) 
2. \(5,000 \times 4 = \) 
3. \(3 \times 20 = \) 
4. \(37 \times 3 = \) 
5. \(28 \times 7 = \) 
6. \($4,843 \times 9 = \) 
7. \(107 \times 5 = \) 
8. \(2 \times 800 = \) 

Decide whether each answer is reasonable.

9. Jill runs about 10 miles a week. Is it reasonable to assume she will run at least 500 miles in a year?

10. Larry’s father travels 1,200 miles on each business trip. He goes on business trips about once a month. Is it reasonable to assume he will travel 30,000 miles in a year?

11. Opie takes karate classes twice a week. The classes cost $105 per week. Is it reasonable to assume he will pay more than $1,200 for the karate classes in a month?

Estimate each product by rounding.

12. \(8 \times 990 = \)
13. \($4,689 \times 3 = \)
14. \(792 \times 5 = \)

Solve. Check for reasonableness.

15. The Lachica family’s electricity bill averages $103 per month. How much will they pay for electricity after 6 months?

16. Gailynn visits her grandmother in Hawaii every summer. The flight time from Los Angeles, where Gailynn lives, to Honolulu is about 4 hours. How many minutes does Gailynn spend on an airplane each summer? (Remember, she flies there and back.)
Read each question carefully. Write your answer on the line provided.

Multiply. Use basic facts and patterns.

1. \(5 \times 3\)
   \(5 \times 30\)
   \(5 \times 300\)
   \(5 \times 3,000\)

2. \(5 \times 70 = \) \[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

3. \(20 \times 4 = \) \[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

4. \(n \times 30 = 90\)

5. \(m \times 4 = 240\)

6. \(9 \times 8,000 = \) \[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

Find the value of each expression if \(k = 9\).

7. \(3,000 \times k = \) \[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

8. \(200 \times k = \) \[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

Find the value of each expression if \(k = 9\).

9. \(3,000 \times k = \) \[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

10. Suppose that each member of a family of four makes 30 phone calls during a week. How many phone calls will they make all together?

11. A school lunch costs $3. Is it reasonable to assume that Harvey will spend more than $10 on lunch this week if he buys lunch every day?
**Quiz 2** *(Lessons 7-3 through 7-4)*

**Estimate each product by rounding.**

1. \(6 \times 375 = \) ____________________
2. \(888 \times 7 = \) ____________________
3. \(7 \times 2,221 = \) ____________________
4. \(2 \times 991 = \) ____________________
5. \(4,326 \times 4 = \) ____________________

**Multiply. Check for reasonableness.**

6. \(21 \times 8 = \) ____________________
7. \(5 \times 38 = \) ____________________
8. \(72 \times 9 = \) ____________________
9. \(69 \times 2 = \) ____________________
10. \(45 \times 7 = \) ____________________

**Solve.**

11. The Wang family is planning a road trip across the country. If they drive 515 miles a day for 6 days, about how many miles will they drive in all? ____________________

12. The Mullen brothers take golf lessons that cost \$785 per year. About how much will 5 years of golf lessons cost? ____________________
Read each question carefully. Write your answer on the line provided.

Multiply.
1. $177 \times 9 =
2. 355 \times 7 =
3. $644 \times 8 =
4. 501 \times 3 =
5. 7 \times $5,003 =
6. 904 \times 6 =

Find the value of each expression if $n=6$.
7. $n \times 5,334 =
8. 662 \times n =

Solve. Tell what strategy you used.
9. Kellie now has $45. Today she earned $21 babysitting, and she received $4 for her allowance. How much money did she have yesterday?
10. Mr. and Mrs. Kwan played miniature golf with their four children at the carnival. It cost $5 for adults and $3 for children to play. How much did they spend on miniature golf?
11. Gabriel planted seeds in his garden. He planted 3 seeds in the first row, 7 seeds in the second row, and 11 seeds in the third row. If the pattern continues, how many seeds will he plant in the seventh row?
Read each question carefully. Write your answer on the line provided.

1. Multiply. Use mental math. $6 \times 4 =$
   A. 12     B. 20     C. 21     D. 24
   1. _____

2. It costs the Gerardo family about $80 a day to eat while on vacation. If they are on vacation for 5 days, about how much will it cost them to eat?
   F. $40     G. $250     H. $300     J. $400
   2. _____

3. Ben bikes at least 60 miles each month. How many miles is it reasonable to estimate that he will bike in 5 months?
   A. 200     B. 300     C. 400     D. 700
   3. _____

Estimate the product.

4. $2 \times 257$
   F. 200     G. 410     H. 514     J. 600
   4. _____

5. $7 \times 2,566$
   A. 14,000     B. 17,962     C. 18,000     D. 21,000
   5. _____

6. Janie is putting her books away. She can fit 10 books on each shelf of her bookcase. There are 4 shelves. How many books will fit on the bookcase?
   6. _____

7. Juanita makes $10 an hour as a lifeguard at the recreation center. Last month she worked 90 hours. How much money did Juanita earn?
   7. _____

Multiply. Check for reasonableness.

8. $33 \times 2$
   8. _____

9. $24 \times 4$
   9. _____

10. The sales tax in Betty’s town is 5 cents for each dollar that is spent on any item in any store. How much sales tax is charged for a computer program that costs $200?
   10. _____
Using the word bank below, complete each sentence by writing the correct word or words in the blank.

<table>
<thead>
<tr>
<th>Addition</th>
<th>Division</th>
<th>Estimate</th>
<th>Multiplication</th>
<th>Product</th>
<th>Subtraction</th>
<th>Whole Numbers</th>
</tr>
</thead>
</table>

1. The term __________ means to split a number into equal parts.

2. ________________ is an operation on two numbers to find their product. It can be thought of as repeated addition.

3. An operation on two or more addends that is equal to a sum is _____________________________.

4. An __________ is a number close to an exact value; it indicates about how much.

5. ________________ is an operation on two numbers that tells the difference, when some or all are taken away.

6. A __________ is the answer to a multiplication problem. It also refers to expressing a number as a product of its factors.

7. The numbers 0, 1, 2, 3, 4 are ________________________.
Read each question aloud to the student. Then write the student’s answers on the lines below the question.

Arrange 4 groups of 3 base-ten blocks and 2 ones.

1. How many groups do we have? How many objects are in each group?

2. Use the blocks to show the product of $2 \times 32$.

3. Tell how you got your answer.

4. Use the blocks to show the product of $4 \times 32$.

5. Tell how you got your answer.

6. What is the product of $2 \times 4$? $2 \times 40$? $2 \times 400$?

7. Describe the pattern you see in Exercise 6.
8. Elena is cleaning her room. She can fit 25 books on each shelf of her bookcase. There are 6 shelves. How many books will fit on the bookcase?

______________________________________________________________________________

9. How many books would fit on the bookcase if there were 5 shelves?

______________________________________________________________________________

10. Tell how you got your answer.

______________________________________________________________________________

11. If she could fit 20 books on a shelf and there were 4 shelves, how many books could she fit?

______________________________________________________________________________

12. Tell how you got your answer.

______________________________________________________________________________

13. If she could fit 30 books on a shelf and there were 4 shelves, how many books could she fit?

______________________________________________________________________________

14. Tell how you got your answer.

______________________________________________________________________________
# Chapter Project Rubric

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Student successfully completed the chapter project. Student demonstrated appropriate use of chapter information in completing the chapter project.</td>
</tr>
<tr>
<td>2</td>
<td>Student completed the chapter project with partial success. Student partially demonstrated appropriate use of chapter information in completing the chapter project.</td>
</tr>
<tr>
<td>1</td>
<td>Student did not complete the chapter project or completed it with little success. Student demonstrated very little appropriate use of chapter information in completing the chapter project.</td>
</tr>
<tr>
<td>0</td>
<td>Student did not complete the chapter project. Student demonstrated inappropriate use of chapter information in completing the chapter project.</td>
</tr>
</tbody>
</table>
## Foldables Rubric

### Multiply by One-Digit Numbers

**Four-Door Book Foldables**

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Student properly assembled Foldables graphic organizer according to instructions. Student recorded information related to the chapter in the manner directed by the Foldables graphic organizer. Student used the Foldables graphic organizer as a study guide and organizational tool.</td>
</tr>
<tr>
<td>2</td>
<td>Student exhibited partial understanding of proper Foldables graphic organizer assembly. Student recorded most but not all information related to the chapter in the manner directed by the Foldables graphic organizer. Student demonstrated partial use of the Foldables graphic organizer as a study guide and organizational tool.</td>
</tr>
<tr>
<td>1</td>
<td>Student showed little understanding of proper Foldables graphic organizer assembly. Student recorded only some information related to the chapter in the manner directed by the Foldables graphic organizer. Student demonstrated little use of the Foldables graphic organizer as a study guide and organizational tool.</td>
</tr>
<tr>
<td>0</td>
<td>Student did not assemble Foldables graphic organizer according to instructions. Student recorded little or no information related to the chapter in the manner directed by the Foldables graphic organizer. Student did not use the Foldables graphic organizer as a study guide and organizational tool.</td>
</tr>
</tbody>
</table>
Read each question carefully. Write your answer on the line provided.

1. $5 \times 30$, $5 \times 300$, and $5 \times 3,000$
   A. 15, 150, 1,500
   B. 25, 1,500, 30,000
   C. 150, 1,500, 15,000
   D. 250, 2,500, 25,000

2. $2 \times 4,000$
   F. 800
   G. 8,000
   H. 12,000
   J. 42,000

3. Four friends are going to a concert. The tickets are $20 per person. What is the total cost of the tickets?
   A. $80
   B. $100
   C. $405
   D. $800

4. Mr. Johnson goes for a 30-minute walk every day. How many minutes does he walk in 7 days?
   F. 200 minutes
   G. 210 minutes
   H. 310 minutes
   J. 2,000 minutes

5. $500 \times 6$
   A. 300
   B. 3,000
   C. 30,000
   D. 300,000

6. $5 \times 3,000$
   F. 1,500
   G. 15,000
   H. 150,000
   J. 1,500,000

7. $440 \times 2$
   A. 88
   B. 880
   C. 8,800
   D. 88,000

8. $1,600 \times 4$
   F. 6
   G. 640
   H. 6,400
   J. 60,000

9. Estimate the product. $3 \times 241$
   A. 600
   B. 700
   C. 723
   D. 850

10. Estimate the product. $4 \times 268$
    F. 108
    G. 270
    H. 1,072
    J. 1,200

11. Mrs. Black teaches 6 classes. Each class has 29 students. About how many students does Mrs. Black have all together?
    A. 180
    B. 174
    C. 120
    D. 100
12. Jessica is packing her books into boxes. If she has 100 books and can fit 10 books into one box, how many boxes will she need to pack all of her books?
   F. 5    G. 10    H. 20    J. 50  

13. Multiply with regrouping. Choose the most reasonable answer.
   \[23 \times 6\]
   A. 110    B. 138    C. 150    D. 300  

14. Estimate the product. \[48 \times 6\]
   F. 240    G. 280    H. 288    J. 300  

15. Multiply the ones, tens, and hundreds. Which choice correctly shows this process? \[239 \times 7\]
   A. 7 \times 239    B. 9 \times 7, 9 \times 39, 9 \times 2
   C. 7 \times 9 ones, 7 \times 3 tens, 7 \times 2 hundreds
   D. 2 \times 7, 3 \times 7, 9 \times 7  

16. The circus sold 300 tickets on Monday. If each ticket cost $8, how much did the circus make?
   F. $900    G. $1,200
   H. $1,800    J. $2,400  

17. Multiply. Check for reasonableness.
   \[204 \times 3\]
   A. 408    B. 612    C. 2,000    D. 2,652  

18. Find the value of this expression if \(k = 7\).
   \[372 \times k\]
   F. 379    G. 2,604    H. 2,772    J. 2,802  

Chapter Test, Form 2A

Read each question carefully. Write your answer on the line provided.

1. $6 \times 40$, $6 \times 400$, and $6 \times 4,000$
   - A. 250, 2,500, 25,000
   - B. 240, 2,400, 24,000
   - C. 24, 140, 1,400
   - D. 24, 400, 34,000

2. $2 \times 8,000 =$
   - F. 16,000
   - G. 12,000
   - H. 1,600
   - J. 800

3. Three friends are going to a concert. The tickets are $20 per person. What is the total cost of the tickets?
   - A. $600
   - B. $120
   - C. $60
   - D. $40

4. Sally goes for a 40-minute walk every day. How many minutes does she walk in 5 days?
   - F. 200 minutes
   - G. 210 minutes
   - H. 310 minutes
   - J. 2,000 minutes

5. $700 \times 6 =$
   - A. 300
   - B. 1,300
   - C. 4,200
   - D. 42,000

6. $4 \times 2,000 =$
   - F. 8,000
   - G. 15,000
   - H. 80,000
   - J. 8,500,000

7. Estimate the product.
   $5 \times 231$
   - A. 1,500
   - B. 1,200
   - C. 1,000
   - D. 723

8. Estimate the product.
   $2 \times 266$
   - F. 600
   - G. 400
   - H. 270
   - J. 108

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9. Mrs. Black teaches 8 classes. Each class has 29 students. About how many students does Mrs. Black have all together?

A. 240  B. 232  C. 120  D. 100  9. ____

10. Jessica is packing her books into boxes. If she has 5 boxes, and puts 10 books into one box, how many books does she have?

F. 50  G. 15  H. 10  J. 5  10. ____

11. Multiply with regrouping.

$27 \times 6$

A. 150  B. 162  C. 180  D. 300  11. ____

12. Estimate the product.

$51 \times 6$

F. 240  G. 280  H. 288  J. 300  12. ____

13. Multiply the ones, tens, and hundreds. Which choice correctly shows this process? $139 \times 7$

A. $7 \times 239$
B. $9 \times 7$, $7 \times 39$, $7 \times 139$
C. $7 \times 9$ ones, $7 \times 3$ tens, $7 \times 1$ hundred
D. $2 \times 7$, $3 \times 7$, $9 \times 7$  13. ____

14. The circus sold 409 tickets on Monday. If each ticket cost $9, how much did the circus make?

F. $4,090$
G. $3,681$
H. $1,318$
J. $1,100  14. ____

15. Multiply. Check for reasonableness.

$204 \times 3$

A. 408  B. 612  C. 2,000  D. 2,652  15. ____

16. Find the value of this expression if $k = 7$.

$372 \times k$

F. 2,800  G. 2,772  H. 2,604  J. 379  16. ____
Chapter Test, Form 2B

Read each question carefully. Write your answer on the line provided.

1. $6 \times 40$
   - A. 250
   - B. 240
   - C. 24
   - 1. _____

2. $6 \times 400$
   - F. 2,400
   - G. 2,500
   - H. 240
   - 2. _____

3. $6 \times 4,000$
   - A. 21,000
   - B. 24,000
   - C. 240,000
   - 3. _____

4. Three friends are going to a concert. The tickets are $20 each. What is the total cost of the tickets?
   - F. $600
   - G. $60
   - H. $40
   - 4. _____

5. $700 \times 6$
   - A. 300
   - B. 4,200
   - C. 42,000
   - 5. _____

6. $4 \times 2,000$
   - F. 8,000
   - G. 15,000
   - H. 80,000
   - 6. _____

7. Multiply with regrouping.
   $27 \times 6$
   - A. 180
   - B. 162
   - C. 150
   - 7. _____

8. Estimate the product. $5 \times 231$
   - F. 1,000
   - G. 1,155
   - H. 1,200
   - 8. _____

9. Estimate the product. $2 \times 266$
   - A. 600
   - B. 400
   - C. 108
   - 9. _____

10. Mrs. Black teaches 8 classes. Each class has 29 students. About how many students does Mrs. Black have all together?
    - F. 240
    - G. 232
    - H. 120
    - 10. _____
11. Jessica is packing her books into boxes. If she has 50 books, and can fit 10 books into one box, how many boxes will she need to pack all of her books?
   A. 50       B. 20       C. 5

12. Estimate the product.
    \[51 \times 6\]
   F. 280       G. 288       H. 300

13. Multiply the ones, tens, and hundreds. Which choice shows this?
    \[139 \times 7\]
   A. \(7 \times 239\)
   B. \(9 \times 7, 7 \times 39, 7 \times 139\)
   C. \(7 \times 9 \text{ ones}, 7 \times 3 \text{ tens}, 7 \times 1 \text{ hundred}\)

14. Sally goes for a 40-minute walk every day. How many minutes does she walk in 5 days?
   F. 200 minutes   G. 210 minutes   H. 2,000 minutes

15. Multiply. Check for reasonableness.
    \[240 \times 3\]
   A. 720       B. 7,200       C. 7,440

16. There are band members going to a parade. They are going in 8 vans that seat 12 people. If all the vans are full, how many band members are going?
   F. 72 members   G. 96 members   H. 116 members
Chapter Test, Form 2C

Read each question carefully. Write your answer on the line provided.

1. Three friends are going to a concert. The tickets are $30 per person. What is the total cost of the tickets?
   1. 

2. Sally goes for a 30-minute walk every day. How many minutes does she walk in 5 days?
   2. 

3. Estimate the product.
   \( 5 \times 231 \)
   3. 

4. Estimate the product.
   \( 2 \times 266 \)
   4. 

5. Mrs. Black teaches 7 classes. Each class has 29 students. About how many students does Mrs. Black have all together?
   5. 

6. \( 700 \times 5 \)
   6. 

7. \( 3 \times 2,000 \)
   7. 

8. \( 603 \times 6 \)
   8. 

9. \( 216 \times 2 \)
   9. 

10. Jessica is packing her books into boxes. If she has 5 boxes, and can fit 10 books into one box, how many books does she pack?
   10. 

Grade 4

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11. Multiply with regrouping.
   \[27 \times 6\]

12. There are band members going to a parade. They are going in 9 vans that seat 8 passengers each. How many band members are going?

13. Estimate the product by rounding.
   \[51 \times 6\]

14. Multiply the ones, tens, and hundreds. Show the steps.
   \[7 \times 139\]

15. Solve when \(n = 6\).
   \[400 \times n\]

   \[300 \times 2\]

17. Solve \(6 \times 40\), \(6 \times 400\) and \(6 \times 4,000\).

18. \(2 \times 8,000\)
Read each question carefully. Write your answer on the line provided.

1. Three friends are going to a concert. The tickets are $30 each. What is the total cost of the tickets?

2. Sally goes for a 30-minute walk every day. How many minutes does she walk in 5 days?

3. Estimate the answer by rounding.
   \[ 5 \times 231 \]

4. Estimate the answer by rounding.
   \[ 2 \times 266 \]

5. Mrs. Black teaches 7 classes. Each class has 29 students. About how many students does Mrs. Black have altogether?

6. \[ 700 \times 5 \]

7. \[ 3 \times 2,000 \]

8. Jessica is packing her books into boxes. If she has 5 boxes, and can fit 10 books into one box, how many books does she have?
9. Multiply with regrouping. What is the best estimate?
   \[ 27 \times 6 \]

10. There are band members in 9 vans going to a parade. Eight people can fit in one van. How many band members are going?

11. Estimate the answer by rounding.
   \[ 51 \times 6 \]

12. Multiply the ones, tens, and hundreds. Show each step.
   \[ 7 \times 139 \]

13. The circus sold 400 tickets on Monday. If each ticket cost $9, how much money did the circus make?

14. Solve for \( x \).
   \[ 300x = 2,400 \]

15. Solve \( 6 \times 40, 6 \times 400 \) and \( 6 \times 4,000 \).

16. \( 2 \times 8,000 \)
Read each question carefully. Write your answer on the line provided.

1. Five friends are going to a concert. The tickets are $32.50 per person. To the nearest ten dollars, what is the approximate cost of the tickets?

2. Sally walks 210 minutes in 6 days. How many minutes does she walk in 12 days?

3. Estimate the product by rounding.
   \[ 5 \times 234 \]

4. Estimate the product by rounding.
   \[ 2 \times 246 \]

5. Mrs. Black teaches a total of 210 students. If each student has 3 pencils, about how many pencils do the students have?

6. \( 700 \times 5 \)

7. \( 3 \times 2,000 \)

8. Jessica needs 5 boxes to pack her books. If she can fit 10 books into one box, how many books does she have?
9. Multiply with regrouping.
   \[ 27 \times 6 \]

10. There are band members going to a parade. They are going in 9 vans that seat 8 passengers. How many band members are going?

11. Estimate the product by rounding.
   \[ 51 \times 6 \]

12. Multiply the ones, tens, and hundreds. Show this process.
   \[ 7 \times 139 \]

13. The circus sold 400 tickets on Monday. If each ticket cost $9, how much money did the circus make?

14. Solve when \( t = 8 \).
   \[ 3,000 \times t \]

15. Solve \( 6 \times 40, 6 \times 400 \) and \( 6 \times 4,000 \).

16. \( 2 \times 8,000 \)
Demonstrate your knowledge by giving a clear, concise solution to each problem. Be sure to include all relevant drawings and justify your answers. You may show your solution in more than one way or investigate beyond the requirements of the problem. If necessary, record your answer on another piece of paper.

1. What basic facts and patterns can you use to find \(4 \times 9,000\)?
   Show your work.

2. Evaluate the reasonableness of the solution in the context of this problem:

   Mary donated 2 cases of crayons to a childcare center. Each case has 20 packs of crayons. The childcare center has 30 children. Mary says she donated more than enough packs of crayons in order for each child to have their own pack. Is this claim reasonable?

3. Write a real-world multiplication problem that involves the multiplication sentence \(10 \times 4\). Solve the problem.

4. Identify the multiplication problem that does not belong with the other three. Explain.

   \[
   \begin{align*}
   201 \times 4 &= 804 \\
   262 \times 5 &= 1,310 \\
   765 \times 2 &= 1,530 \\
   923 \times 8 &= 7,384 \\
   \end{align*}
   \]
Use this recording sheet with pages 294–295 of the Student Edition. Read each question. Then fill in the correct answer.

1. A  B  C  D

2. F  G  H  J

3. A  B  C  D

4. F  G  H  J

5. A  B  C  D

6. F  G  H  J

7. A  B  C  D

8. F  G  H  J

9. A  B  C  D

10. F  G  H  J
**Test Example**

How many paperclips are in 7 boxes of 500?

A. 7,500 paperclips  
B. 7,000 paperclips  
C. 5,000 paperclips  
D. 3,500 paperclips

**Read the Question**

You need to know the number of paperclips in 7 boxes.

**Solve the Question**

Look for the basic fact in the problem. Solve it.

The basic fact is $7 \times 5$. The answer is 35.

Then count the number of zeros in the factor.  
There are 2 zeros in the factor 500.

Add 2 zeros to 35.  
So, $7 \times 500 = 3,500$.

The answer is D.

**Read each question carefully. Write your answer on the line provided.**

1. Irene has 10 bags of carrots. Each bag has 30 carrots. How many carrots does she have?
   A. 300 carrots  
   B. 3,000 carrots  
   C. 3,100 carrots  
   D. 30,000 carrots  
   1. ___

2. A jumbo jet can travel 483 miles per hour. About how many miles will it travel in 5 hours?
   F. 2,500 miles  
   G. 2,000 miles  
   H. 1,000 miles  
   J. 500 miles  
   2. ___

3. Cristina needs to purchase 4 tickets to a play. Each ticket costs $23. How much will 4 tickets cost?
   A. $46  
   B. $80  
   C. $92  
   D. $100  
   3. ___
4. The bakery has 12 display shelves. Each shelf can hold 12 desserts. How many desserts can the bakery display at one time?
   F. 104  
   G. 144  
   H. 244  
   J. 404  

5. The hotel that the Nguyen family is staying in costs $80 a day. Their vacation is 6 days long. How much is the total cost of the hotel?
   A. $480  
   B. $500  
   C. $520  
   D. $4,800  

6. Find $n$ if $17 + n = 34$
   F. 7  
   G. 17  
   H. 19  
   J. 27  

7. What is the value of $y$?
   $(9 + 6) \times (2 \times 3) = y$
   A. 20  
   B. 90  
   C. 120  
   D. 260  

8. This frequency table shows the number of dogs groomed by Ernesto’s dog grooming business in one month.

<table>
<thead>
<tr>
<th>Week</th>
<th>Number of Dogs Groomed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
</tr>
</tbody>
</table>

Which week did Ernesto groom more than 20 dogs?
   F. Week 1  
   G. Week 2  
   H. Week 3  
   J. Week 4  

9. The table shows how many miles an airplane traveled over 4 weeks.

<table>
<thead>
<tr>
<th>Week</th>
<th>Number of Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>623</td>
</tr>
<tr>
<td>2</td>
<td>513</td>
</tr>
<tr>
<td>3</td>
<td>783</td>
</tr>
<tr>
<td>4</td>
<td>723</td>
</tr>
</tbody>
</table>

About how many total miles did the airplane travel over 4 weeks?

A. 2,000  B. 2,600  C. 2,800  D. 2,900  9. _________

10. Find 3,200 − 2,121

F. 979  G. 1,079  H. 1,180  J. 1,181  10. _________

11. Multiply $8 \times 8,000$ using mental math.

12. Find the value of the expression $n \times 30$ if $n = 7$.

13. Estimate the product of $2 \times 290$.

14. Multiply $46 \times 3$ using partial products.

15. Multiply $3,291 \times 4$ using the standard method.
### Graphic Organizer

Fill in the table.

<table>
<thead>
<tr>
<th></th>
<th>×10</th>
<th>×100</th>
<th>×1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>80</td>
<td>800</td>
<td>8,000</td>
</tr>
<tr>
<td>6</td>
<td>60</td>
<td>600</td>
<td>6,000</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>400</td>
<td>4,000</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>200</td>
<td>2,000</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>500</td>
<td>5,000</td>
</tr>
</tbody>
</table>

### Anticipation Guide

#### Multiply by One-Digit Numbers

**Before you begin Chapter 7**
- Read each statement.
- Decide whether you agree (A) or disagree (D) with the statement.
- Write A or D in the first column OR if you are not sure whether you agree or disagree, write NS (not sure).

**STEP 1**

<table>
<thead>
<tr>
<th>A, D, or NS Statement</th>
<th>A or D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowing basic facts and number patterns can help you to multiply mentally.</td>
<td>A</td>
</tr>
<tr>
<td>2. 2 × 2,000 = 4,000</td>
<td>A</td>
</tr>
<tr>
<td>3. 5 × 10,000 = 50,000</td>
<td>A</td>
</tr>
<tr>
<td>4. 3 × 900 = 7,200</td>
<td>D</td>
</tr>
<tr>
<td>5. Using partial products can help you to multiply multi-digit numbers.</td>
<td>A</td>
</tr>
<tr>
<td>6. When multiplying by a four-digit number, you should multiply the ones, then the tens, then the hundreds, and finally the thousands, and then add them all together.</td>
<td>A</td>
</tr>
<tr>
<td>7. Using estimation, 5 × $3,300 is about $15,000 (5 × $3,000).</td>
<td>A</td>
</tr>
<tr>
<td>8. Using estimation, 4 × 6,700 is about 28,000 (4 × 7,000).</td>
<td>A</td>
</tr>
<tr>
<td>9. You multiply multi-digit numbers the same way that you multiply a two-digit number by a one-digit number.</td>
<td>A</td>
</tr>
<tr>
<td>10. 7 × 20 &gt; 6 × 90</td>
<td>D</td>
</tr>
</tbody>
</table>

**STEP 2**

- Reread each statement and complete the last column by entering an A (agree) or a D (disagree).
- Did any of your opinions about the statements change from the first column?
- For those statements that you mark with a D, use a separate sheet of paper to explain why you disagree. Use examples, if possible.
Skill Practice
Multiples of 10, 100, and 1,000
Multiply. Use basic facts and patterns.

1. $6 \times 30 = 180$
2. $5 \times 300 = 1,500$
3. $4 \times 3,000 = 12,000$
4. $5 \times 40 = 200$
5. $7 \times 300 = 2,100$
6. $9 \times 1,000 = 9,000$
7. $8 \times 20 = 160$
8. $7 \times 500 = 3,500$
9. $2 \times 9,000 = 18,000$
10. $9 \times 80 = 720$

Find the value of each variable.

21. $5 \times n = 2,500$  
22. $8 \times n = 32,000$
23. $1 \times n = 10$
24. $60 \times n = 120$

Chapter 7
Multiply. Use basic facts and patterns.
1. 4 \times 1 = 4
2. 6 \times 7 = 42
3. 4 \times 10 = 40
4. 4 \times 100 = 4,000
5. 4 \times 1,000 = 4,000

Multiply. Use mental math.
3. 2 \times 70 = 140
4. 9 \times 500 = 4,500
5. 7 \times 4,000 = 28,000

ALGEBRA Find the value of each variable.
6. 30 \times n = 120
   n = \frac{120}{30} = 4

7. 6 \times n = 3,600
   n = \frac{3,600}{6} = 600

ALGEBRA Find the value of each expression if \( k = 2 \).
8. 20 \times k = 20 \times 2 = 40

9. k \times 500 = 2 \times 500 = 1,000

10. Joe bought a house. His payments are $1,000 a month. How much will he pay for 5 months?
   $5,000

Problem-Solving Practice

Solve.
1. There were 20 pirates on a ship. Each one had 1 eye patch. How many eye patches were on the ship in all?
   20 eye patches

2. The pirates had 6 treasure chests with gold coins. Each chest had 9,000 gold coins. How many gold coins did the pirates have in all?
   54,000 gold coins

3. The pirates traveled 50 miles every day. They have been at sea for 8 days. How many miles have they traveled altogether?
   400 miles

4. One day the pirates sighted 2 whales every hour for 10 hours. How many total whales were sighted?
   20 whales

5. Over the 8 days that they have been at sea, the pirates ate 20 fish each day. How many fish were eaten in all?
   160 fish

6. The pirates plan to explore 3 islands which will require walking 20 miles per day. How many miles will they have walked if it takes 4 days to explore all 3 islands?
   80 miles

7. Four of the pirates have been away at sea for 200 days. How many days total have these four pirates been away at sea?
   800 days
**7-1 Enrich**

**ExTENding Patterns**

The numbers in these patterns are multiples of 10. Continue each pattern and write the rule.

1. 200, 2,000, 20,000, 200,000, __2,000,000__
   The rule is: **Multiply by 10**

2. 10, 50, 250, 1,250, __6,250__
   The rule is: **Multiply by 5**

3. 9,600, 4,800, 2,400, 1,200, __600__
   The rule is: **Divide by 2**

4. 30, 60, 120, 240, __480__
   The rule is: **Multiply by 2**

5. 3,400,000,000, 34,000,000, 340,000, 3400, __34__
   The rule is: **Divide by 100**

Solve these problems. Use the answers to fill in the blanks so that the paragraph makes sense.

\[3 \times 1 = \_3\]  \[3 \times 10 = \_30\]  \[3 \times 100 = \_300\]

About 126 kinds of fish and 346 kinds of mammals are on the endangered species list. The mountain gorilla, one of ___3___ kinds of gorillas that live in Africa, is endangered. Fewer than 640 mountain gorillas exist in the wild. They live in groups and eat mostly plants. The average male weighs more than ___300___ pounds and lives between ___30___ and 50 years.

---

**7-2 Reteach**

**Problem-Solving Skill: Reasonable Answers**

Jeff wants to invite some friends over for dinner. He has a large rectangular table and knows there is room to seat 10 people on each of the long sides and 4 on the two ends of his table.

If Jeff wants everyone seated at the table, how many friends can he invite? Is it reasonable for him to invite 40 people?

**Step 1: Understand. What facts do you know?**

Jeff can seat 10 people on each of the long sides of his table.
Jeff can seat 4 people on each of the ends of his table.
Jeff wants everyone seated at the table.

**Step 2: Plan. What you need to know?**

How many friends is it reasonable for Jeff to invite?

**Step 3: Solve. What math do you need to do?**

You need to figure out the number of people that can sit at the table, based on all of the amounts that you have.
2 long sides, 10 people each: \(10 \times 2 = 20\)
2 ends, 4 people each: \(4 \times 2 = 8\)
Add the amounts: \(20 + 8 = 28\) people can sit at the table.

**Step 4: Check. See if your answer makes sense.**

When you compare the amount that can sit at the table, 28, to the amount of people that Jeff wants to invite, 40, you can see that it is not reasonable for him to invite 40 guests. If Jeff only has seats for 28, how many friends should he invite? (Remember, Jeff needs a seat too!)

Use the steps above to solve the following problem.

Brittany was given 3 movies to watch in her free time. Each movie is 100 minutes long. Brittany has 70 minutes to relax before she goes to work every day, Monday through Friday. Is it reasonable for her to expect to watch all three movies, starting Monday and ending on Friday?
**Reteach (continued)**

**Problem-Solving Skill: Reasonable Answers**

Step 1: Understand. What facts do you know?

**Brittany has 70 minutes to relax for 5 days.**
**Brittany has 3 movies to watch.**
Each movie is 100 minutes long.

Step 2: Plan. What you need to know?
**Is it reasonable for Brittany to expect to watch all three movies in five days?**

Step 3: Solve. What math do you need to do?
**Find out Brittany's total minutes of free time by multiplying** $70 \times 5 = 350$ minutes

Figure out the total minutes it will take to watch all three movies.
$100 \times 3 = 300$ minutes

Step 4: Check. See if your answer makes sense.
**Compare. The 300 minutes that it will take to watch the movies is less than Brittany's total free time, so yes, her plan is reasonable.**

**Decide whether each answer is reasonable. Explain your reasoning.**

1. Sandy owns her own pizza restaurant. Her profit is about $2,000 a week. She needs to put aside $400 a week for taxes. Is it reasonable for her to spend $1,600 a week? **No, $1,600**

2. Sandy works 5 days a week. Her total number of hours each week is 50. Is it reasonable to say that Sandy works 7 hours a day? **No, 10**

3. Jill expects that the sale of donated soda will bring in about $50 a day for the week. Is it reasonable to say that she will walk more than 10 miles before the week is over? **Yes; 10 \times 7 = 70 miles**

4. Jill will have to walk home from the fair each day for the week. The fair is 1 mile from her home. Is it reasonable to say that she will walk more than 10 miles before the week is over? **No, 7 miles**

5. Jill expects that the sale of donated soda will bring in about $50 a day for the week. Is it reasonable for her to expect at least $500 from soda sales by the end of the week? **No, $350**

6. Jill was able to collect donations of about $60 a month for the 10 months that she was planning the fair. She saved all of the money. In addition, she was given $350 that had been put aside from the previous fair. She needs $1,000 to rent a ferris wheel. Is it reasonable to say that she can pay for the ferris wheel rental in full? **No, she only has $950**

7. Jill has spent a total of 6,000 minutes organizing the fair. Is it reasonable for her to claim that she organized the fair in under 10 hours? **No, it has taken her 100 hours**

---

**Skills Practice**

**Problem-Solving Skill: Reasonable Answers**

**Types of Prizes**
- **stuffed animals**: 98
- **plastic models**: 54
- **yo-yos**: 96
- **stopwatches**: 49

**5. The table above shows the numbers of different prizes Jill collected for the fair. Is it reasonable for her to say that she has close to 300 prizes to give to those who win games? Yes, 297 prizes is close to 300 prizes**

**6. Jill has spent a total of 6,000 minutes organizing the fair. Is it reasonable for her to claim that she organized the fair in under 10 hours? No, it has taken her 100 hours**
Homework Practice

Problem–Solving Skill: Reasonable Answers

Decide whether each answer is reasonable. Explain your reasoning.

1. Sam travels from Baltimore to Boston each year. It takes him 10 hours to get to Boston. He stops 3 times, for an hour each time. If he only stopped once, is it reasonable to say that he could get there in 6 hours?
   **No, it would take 8 hours**

2. The table below shows Sam’s expenses for his trip to Boston. Was it reasonable for Sam to say that the trip cost him close to $400?
   **Yes, $391**
   
<table>
<thead>
<tr>
<th>Expenses</th>
<th>Amount Spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>$103</td>
</tr>
<tr>
<td>Gas</td>
<td>$252</td>
</tr>
<tr>
<td>Tolls</td>
<td>$36</td>
</tr>
</tbody>
</table>

3. Write a problem that would have $1,000 as a reasonable answer.
   **You get paid $100 a month for a year. You spend $200 on clothes and save the rest. Is it reasonable to say that you have $1,000 saved?**

4MR3.1, 4NS3.0

Spiral Review

Multiply. Use mental math. (Lesson 7–1)

4. \(2 \times 4,000 = \) 8,000
5. \(3 \times 80 = \) 240
6. \(9 \times 600 = \) 5,400
7. \(4 \times 5,000 = \) 20,000
8. \(5 \times 50 = \) 250
9. \(6 \times 900 = \) 5,400
10. \(6 \times 200 = \) 1,200
11. \(8 \times 1,000 = \) 8,000
12. \(9 \times 30 = \) 270
13. \(5 \times 70 = \) 350

ALGEBRA Find the value of each variable.

14. \(n \times 20 = 60\)  \(n = 3\)
15. \(t \times 8 = 56,000\)  \(t = 7,000\)

Enrich

Book Reports

Today is Tuesday and Scott has a book report due a week from next Friday. His favorite stories are science fiction.

1. If Scott starts reading a 72-page book on Tuesday, and he reads 9 pages every day, on what day of the week will he finish reading the book?
   **On the eighth day, which is the following Tuesday**

2. What if Scott reads 10 pages a day?
   **He will still finish the book on the following Tuesday, but he’ll read only 2 pages that day.**

3. On Thursday, October 2, Scott’s teacher announced that three book reports were due by the end of the month – on each of the dates that is a multiple of ten. On what days and dates are the book reports due?
   **Day**  **Date**
   - **Friday**  **October 10**
   - **Monday**  **October 20**
   - **Thursday**  **October 30**
### Reteach

**Use Rounding to Estimate Products**

To estimate products, round numbers. Then use basic facts and multiply. Look at the number lines below.

- **Ones**
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10

- **Tens**
  - 10
  - 20
  - 30
  - 40
  - 50
  - 60
  - 70
  - 80
  - 90
  - 100

- **Hundreds**
  - 100
  - 200
  - 300
  - 400
  - 500
  - 600
  - 700
  - 800
  - 900
  - 1,000

When a number is halfway between two numbers, round up.

Remember to round the greater factor to its greatest place.

<table>
<thead>
<tr>
<th>Sample estimates are given. Accept all reasonable estimates.</th>
<th>Use basic facts and multiply.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 59 × 5</td>
<td><strong>60</strong> × <strong>5</strong></td>
</tr>
<tr>
<td>2. 579 × 4</td>
<td><strong>600</strong> × <strong>4</strong></td>
</tr>
<tr>
<td>3. 788 × 3</td>
<td><strong>800</strong> × <strong>3</strong></td>
</tr>
<tr>
<td>4. 6,222 × 6</td>
<td><strong>6,000</strong> × <strong>6</strong></td>
</tr>
<tr>
<td>5. 8,951 × 4</td>
<td><strong>9,000</strong> × <strong>4</strong></td>
</tr>
<tr>
<td>6. 42 × 7</td>
<td><strong>40</strong> × <strong>7</strong></td>
</tr>
<tr>
<td>7. 6,450 × 8</td>
<td><strong>6,000</strong> × <strong>8</strong></td>
</tr>
<tr>
<td>8. 683 × 4</td>
<td><strong>700</strong> × <strong>4</strong></td>
</tr>
<tr>
<td>9. 7,395 × 3</td>
<td><strong>7,000</strong> × <strong>3</strong></td>
</tr>
</tbody>
</table>

### Skills Practice

**Use Rounding to Estimate Products**

- **Sample estimates are given. Accept all reasonable estimates.**

1. 5 × 21 = **50** × **20** = 100
2. 3 × 39 = **30** × **40** = 120
3. 7 × 546 = **70** × **500** = 350
4. 85 × 6 = **90** × **60** = 540
5. 17 × 9 = **20** × **9** = 180
6. 81 × 3 = **80** × **3** = 240
7. 2 × 298 = **20** × **300** = 600
8. 4 × 305 = **40** × **300** = 1,200
9. 478 × 6 = **500** × **6** = 3,000
10. 5 × 784 = **50** × **800** = 4,000
11. 612 × 9 = **600** × **9** = 5,400
12. 6 × 556 = **600** × **6** = 3,600
13. 2 × 1,987 = **20** × **2,000** = 4,000
14. 3 × 2,126 = **30** × **2,000** = 6,000

Solve.


30. An ambulance travels about 386 miles a day. About how many miles does it travel in a week? 400 miles × 7 = 2,800 miles
Homework Practice

Use Rounding to Estimate Products

Estimate each product.

1. \(2 \times 36 = 2 \times 40 = 80\)
2. \(96 \times 3 = 100 \times 3 = 300\)
3. \(6 \times 28 = 6 \times 30 = 180\)
4. \(68 \times 4 = 70 \times 4 = 280\)
5. \(5 \times 41 = 5 \times 40 = 200\)

6. \(5 \times 423 = 5 \times 400 = 2,000\)
7. \(6 \times 523 = 6 \times 500 = 3,000\)
8. \(3 \times 667 = 3 \times 700 = 2,100\)
9. \(2 \times 366 = 2 \times 400 = 800\)
10. \(4 \times 712 = 4 \times 700 = 2,800\)

Sample estimates are given. Accept all reasonable estimates.

Solve.

11. An airline pilot travels about 6,457 miles a week. About how many miles would she travel in a month?
   \(6,000 \text{ miles} \times 4 = 24,000 \text{ miles}\)

12. If the L.A. Dodgers win about 21 games a month, about how many games would they win after three months?
   \(20 \times 3 = 60; 60 \text{ games}\)

Spiral Review

Decide whether each answer is reasonable. Explain your reasoning. (Lesson 7-2)

13. Ted Williams had about 30 home runs a season. Is it reasonable to say that he had 300 home runs within a 6-year period?
   No, he only had 180 home runs.

14. Roger Clemens pitched about 16 winning games per year. After he had played 8 years for the Boston Red Sox, is it reasonable to say that he had about 130 wins?
   Yes, 128 is about 130 wins.

Problem-Solving Practice

Use Rounding to Estimate Products

Estimate each product.

1. Each fourth-grade class has 28 students. There are three classes in the school. About how many fourth-grade students are there in all?
   \(3 \times 30 = 90; 90 \text{ fourth-grade students}\)

2. Pizzas cost $11 each. Miss Adams buys 4 pizzas. About how much does she spend on pizzas?
   \(4 \times 10 = 40\)

3. Chad's family wants to buy 6 different board games. Each board game costs $17.99. About how much will all of the board games cost?
   \(6 \times 20 = 120\)

4. Habib buys 3 books that cost $9 each. About how much money does he spend on books?
   \(3 \times 10 = 30\)

5. Mr. Bell buys 4 shirts that cost $17 each. He has $50 to spend. Does he have enough money? Explain.
   \(4 \times 20 = 80, \text{ No, he does not have enough since } 80 > 50.\)
In the center of each flower below, you will see a range of products. Use your rounding and estimation skills to complete the multiplication problems on the petals so that the answers fall into that range of products.

**Flower 1**

Range of Products: 125–150

5 petals:
- $3 \times 45 = 135$
- $4 \times 32 = 128$
- $5 \times 26 = 130$
- $6 \times 25 = 150$
- $7 \times 20 = 140$

**Flower 2**

Range of Products: 700–800

5 petals:
- $6 \times 120 = 720$
- $7 \times 100 = 700$
- $8 \times 95 = 760$
- $9 \times 81 = 729$
- $10 \times 75 = 750$

**Reteach**

**Multiply Two-Digit Numbers**

Find $13 \times 3$.
First, think in terms of tens and ones. $13$ has 1 ten and 3 ones.
Second, set up the problem with the greater number on top.

$13 \times 3$

**Step 1** Multiply the ones.
- $3 \times 3 = 9$

**Step 2** Multiply the tens.
- $10 \times 3 = 30$

The tens (30) added to the ones (9) = 39

Find $13 \times 5$.
First, think in terms of tens and ones. $13$ has 1 ten and 3 ones.
Second, set up the problem with the greater number on top.

$13 \times 5$

**Step 1** Multiply the ones.
- $3 \times 5 = 15$

**Step 2** Multiply the tens. Add the new ten.
- $10 \times 5 = 50 + 10$

This time the product of the ones is larger. You need to regroup. You have 1 ten and 5 ones. You need to add that ten to the other tens.

$13 \times 5$

The tens (50 + 10) added to the ones (5) = 65

Multiply. Check for reasonableness.

1. $26 \times 5 = 130$
2. $22 \times 7 = 154$
3. $45 \times 3 = 135$

Grade 4

**Chapter Resources**

**Answers** (Lessons 7-3 and 7-4)
Skills Practice
Multiply Two-Digit Numbers

Multiply.
1. $21 \times 7 = 147$
2. $38 \times 5 = 190$
3. $54 \times 2 = 108$
4. $49 \times 6 = 294$
5. $17 \times 4 = 68$
6. $25 \times 9 = 225$
7. $53 \times 4 = 212$
8. $28 \times 7 = 196$
9. $61 \times 8 = 488$
10. $39 \times 2 = 78$
11. $62 \times 2 = 124$
12. $38 \times 4 = 152$
13. $91 \times 3 = 273$
14. $46 \times 5 = 230$
15. $78 \times 6 = 468$
16. $98 \times 5 = 490$
17. $76 \times 6 = 456$
18. $24 \times 9 = 216$
19. $56 \times 7 = 392$
20. $48 \times 8 = 384$
21. $66 \times 6 = 396$
22. $77 \times 7 = 539$
23. $94 \times 3 = 282$
24. $59 \times 4 = 236$
25. $44 \times 9 = 396$
26. $24 \times 7 = 168$
27. $19 \times 8 = 152$
28. $67 \times 5 = 335$
29. $84 \times 4 = 336$
30. $91 \times 2 = 182$

Solve.
17. A rectangle is 5 tiles wide by 13 tiles high. How many tiles are in the rectangle? 
65 tiles
18. Books are stacked in 3 stacks with 17 books in each stack. How many books are in the stacks? 
51 books

See students’ work.

Homework Practice
Multiply Two-Digit Numbers

Multiply.
1. $73 \times 3 = 219$
2. $88 \times 4 = 352$
3. $44 \times 5 = 220$
4. $74 \times 5 = 370$
5. $31 \times 7 = 217$
6. $85 \times 4 = 340$
7. $68 \times 8 = 544$
8. $77 \times 6 = 462$
9. $32 \times 9 = 288$
10. $97 \times 2 = 194$
11. $65 \times 5 = 325$
12. $66 \times 8 = 528$
13. $33 \times 6 = 198$
14. $94 \times 3 = 282$
15. $96 \times 3 = 288$

Estimate each product. (Lesson 7-3)
19. $89 \times 2 = 180$
20. $396 \times 4 = 1,600$
21. $6 \times 105 = 600$
22. $3 \times 412 = 1,200$
23. $4 \times 209 = 800$
24. $3 \times 970 = 3,000$

Solve.
25. A football player runs about 104 yards each game. After he has played 2 games, about how many yards has he run? 
About 200 yards
Name __________________________ Date __________________

7-4

Problem-Solving Practice

Multiply Two-Digit Numbers

4NS3.0, 4MR2.1

Solve.

1. There are 3 birds on the ground. Each bird eats 10 worms. How many worms are eaten all together?
   30 worms

2. Simon has 12 CDs. He burns 3 copies of each. How many CDs did Simon make?
   36 CDs

3. The school auditorium has 4 rows of seats. There are 18 seats in each row. How many students can sit in the auditorium?
   72 students

4. The school cafeteria has 6 rows of tables. Each row has 22 places to sit. How many students can eat in the school cafeteria?
   132 students

5. Scott is playing a game of memory with some picture cards. He makes 4 rows and puts 23 cards in each row. How many picture cards is Scott using in this game?
   92 picture cards

6. Kate would like to play the memory game, too. She adds her cards to the game. Now, there are 8 rows, and 24 cards in each row. How many cards are there now?
   192 cards

7. John wants to buy birthday gifts for 8 friends. He can spend $19 for each gift. How much will he spend in all?
   $152

8. Caroline makes $5 an hour pet-sitting for the neighbors. Last summer she worked 31 hours. How much money did Caroline earn?
   $155

Enrich

What’s the Problem?

Use the clues to figure out each factor. Write them in the two top boxes. Then multiply and write the product in the third box.

1. Prime number between 25 and 30 \( \times \) Odd number greater than 6 and divisible by 3
   29  9  261

2. Letters in “multiplication” \( \times \) Quarts in a gallon
   14  4  56

3. Square number close to 50 \( \times \) Half a dozen
   49  6  294

4. Inches in a yard \( \times \) Days in a week
   36  7  252

5. Five times eleven \( \times \) Sides of an octagon
   55  8  440
## Choose the Best Strategy

Here are five problem-solving strategies and tips on how to use them.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>How to Use It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the four-step plan</td>
<td>Understand the facts. Plan your strategy. Solve the problem using the strategy. Check your work.</td>
</tr>
<tr>
<td>Draw a picture</td>
<td>Create a picture from the words in the problem to help you find the answer.</td>
</tr>
<tr>
<td>Look for a pattern</td>
<td>Spot whether there is something in the problem that repeats or looks the same.</td>
</tr>
<tr>
<td>Make a table</td>
<td>Organize data by making a table with columns for each category and rows for each number. Fill in the numbers to solve the problem.</td>
</tr>
<tr>
<td>Work backward</td>
<td>Start with the information given in the problem. Then use subtraction to find the answer to the problem.</td>
</tr>
</tbody>
</table>

Use any strategy shown below to solve. Tell what strategy you used.

- Use the four-step plan
- Make a table
- Draw a picture
- Work backward
- Look for a pattern

1. Bob wants to treat his 3 friends to rides at an amusement park. All-day passes cost $10. What will Bob have to pay for himself and his friends to go on the rides all day? **$40; four-step plan**

2. Russ is setting up his science project about the seashore at the fair. He has several rocks at the edge of the water, on the right side of the display. He has sand on the left side. Five starfish are on the right side of the rocks, touching the water. Are the starfish next to the sand? **No, they are on the right side, the rocks are in between the sand and the starfish. Draw a Picture**

3. Fill in the missing number. 3, 6, 12, 24, ____, 96, 192 **48; look for a pattern**

4. There are 5 marbles in each bag. How many marbles do you have if you are given 10 bags of red marbles, 12 bags of yellow marbles, and 6 bags of blue marbles? **150; make a table**

5. Mary now has 5 pairs of sneakers. Her friend gave her 1 white pair yesterday. Her mom bought her new pink ones this morning. How many pairs did she have originally? **3 pairs; work backward**

6. Hank is planting pepper plants. In the first row, he plants 1 pepper. In the second row, he plants 2. In the third row, he plants 4. In the fourth row he plants 8. How many peppers will he plant in the sixth row? **32; look for a pattern or make a table**

7. Now, Jay has a collection of 20 baseball hats. He just got a new one on a school trip. Last week, his father’s friend gave him 6 hats. How many hats did he have originally? **13; work backward**

8. Jerry was late to school all week. On Monday, Tuesday, and Wednesday, Jerry was 30 minutes late. On Thursday and Friday he was 50 minutes late. The principal told him that he would have to stay after school and make up all of the time before the end of the year. How many minutes will Jerry have to stay after school? **190 minutes; make a table**
Skills Practice
Problem-Solving Investigation

Problem-Solving Strategies
- Draw a picture
- Make a table
- Look for a pattern
- Work backward

Use any strategy shown above to solve. Tell what strategy you used.

1. Fred is buying soda and snacks for a school event. He has to walk to the store and can only carry a limited amount at one time. He walked to the store 4 times. The first time he brought back 10 items, the second time 32, the third time 12, and the last time 15. How many items did he purchase? 

   make a table; 69 items

2. Joe is building a storage shed. He needs 200 nails for each one of the 4 sides, 500 nails for the roof, 100 nails for the door, and 200 nails for the steps. How many nails will he need in all? 

   make a table; 1,600 nails

3. Andy is creating a design using colored shapes. He is starting with a triangle and ending with another triangle. In between the triangles, he has a circle to the left of a square. What does the design look like? 

   draw a picture or look for a pattern; triangle, circle, square, triangle

4. Gary rakes leaves. The first day, he fills 6 bags. The second day, he fills 8 bags. The third day, he fills 10 bags of leaves. If this pattern continues, how many bags will he fill on the fourth day? 

   look for a pattern; 12 bags

5. Sherri now has 25 pairs of earrings. Last week she was given 2 pairs for her birthday. Just yesterday, her older sister gave her 2 sets of earrings. How many sets of earrings did she have originally? 

   work backward, 21 sets

Homework Practice
Problem-Solving Investigation

Use any strategy to solve.

1. Joe has 5 new notebooks for school. Two of those notebooks have 3 sections and three have 5 sections. Joe needs 20 sections in all. Does he have enough? 

   yes, he has 21

2. Each class uses 1,000 sheets of paper every week. The school uses a total of 9,000 sheets of paper every week. How many classes are in the school? 

   9 classes

3. Write a problem that you can solve by looking for a pattern. Explain the pattern you used.

   Jill called 4 friends and told them she was moving. Each of her friends called 4 different people and told them to say goodbye to Jill. How many people know that Jill is moving? 

   4 × 4 + the original 4 + Jill = 21

Spiral Review

Multiply. (Lesson 7-4)

4. $55 \times 5 = 275$
10. $4 \times 52 = 208$
16. $9 \times 22 = 198$

5. $75 \times 6 = 450$
11. $63 \times 7 = 441$
17. $72 \times 8 = 576$

6. $8 \times 47 = 376$
12. $29 \times 9 = 261$
18. $33 \times 5 = 165$

7. $6 \times 39 = 234$
13. $32 \times 5 = 160$
19. $2 \times 90 = 180$

8. $2 \times 98 = 196$
14. $4 \times 60 = 240$

9. $84 \times 6 = 504$
15. $66 \times 8 = 528$

Solve.

20. There are 26 teams in the basketball league. Each team has 9 players on its roster. How many players are there all together? 

   234 players
Angie has to sell 72 calendars for her school fundraiser.

1. If Angie starts selling on Thursday, and she sells 9 calendars every day, on what day of the week will she sell all of the calendars? **on the eighth day, which is the following Thursday**

2. What if Angie sells 12 calendars a day? **If Angie sold 12 calendars a day she would finish on the sixth day.**

On Monday, Angie’s teacher announced that the fundraiser would last for a total of 4 weeks. If Angie sold at a rate of 9 calendars a day, how many would she sell by the end of the fundraiser? Use the worksheet to help you find the answer.

| By Week 1 | 63 calendars |
| By Week 2 | 126 calendars |
| By Week 3 | 189 calendars |
| By Week 4 | 252 calendars |

**Multiply by following steps.**

Find 22 × 6.

**Step 1**

Think in terms of tens and ones. 22 is 2 tens and 2 ones.

**Step 2**

Multiply the ones. 6 × 2 = 12. Regroup 12 ones as 1 ten + 2 ones. Be sure to put the 1 in the tens column above the two.

**Step 3**

Multiply the tens. 1 ten × 2 tens = 20 tens. Add the regrouped ten.

132 Regroup 13 tens as 1 hundred and 3 tens.

**Multiply.**

1. 7 × 217 = 1479
2. 6 × 210 = 1260
Multiply.
1. \(114 \times 6 = 684\)
2. \(261 \times 4 = 1044\)
3. \(628 \times 8 = 5024\)
4. \(739 \times 5 = 3695\)
5. \(295 \times 3 = 885\)
6. \(375 \times 5 = 1875\)
7. \(648 \times 7 = 4536\)
8. \(1525 \times 6 = 9150\)
9. \(1313 \times 9 = 11817\)
10. \(4512 \times 5 = 22560\)
11. \(6421 \times 3 = 19263\)
12. \(1225 \times 9 = 11025\)

ALGEBRA Find the value of each expression if \(t = 7\).
13. \(t \times 385 = 2695\)
14. \(t \times 7441 = 52087\)
15. \(t \times 1123 = 7861\)

Compare. Use \(>\), \(<\), or \(=\).
16. \(396 \times 4 \space \vspace{10pt} 5 \times 423\)
17. \(4 \times 712 \space \vspace{10pt} 3 \times 412\)
18. \(3 \times 656 \space \vspace{10pt} 7 \times 366\)
19. \(6 \times 523 \space \vspace{10pt} 2 \times 379\)
20. \(2 \times 961 \space \vspace{10pt} 8 \times 612\)

Multiply.
1. \(416 \times 6 = 2496\)
2. \(293 \times 5 = 1465\)
3. \(153 \times 4 = 612\)
4. \(310 \times 3 = 930\)
5. \(2135 \times 4 = 8540\)
6. \(5216 \times 6 = 31296\)
7. \(3591 \times 3 = 10773\)
8. \(4325 \times 9 = 38925\)
9. \(2135 \times 2 = 4270\)
10. \(5112 \times 4 = 20448\)

ALGEBRA Find the value of each expression if \(n = 3\).
11. \(n \times 6421 = 19263\)
12. \(n \times 1913 = 5739\)

Solve.
13. There are 9 children in the scout troop. Each of them contributed 127 hours to community clean-up projects. What is the total number of hours the scout troop contributed?
11,143 hours

14. Five people donated to the school library this year. Each person donated $225. How much money did the library get in donations this year?
$1125

Spiral Review
Use any strategy to solve. (Lesson 7-5)
15. For the past 6 weeks, fourth-grade safety guards have worked after school and waited with first-grade students until their parents came for them. The first week they waited with 5 first-graders, the second week with 7, the third week with 9. If the pattern continued, how many first-graders did they wait with for the fourth, fifth, and sixth weeks?
11, 13, 15

16. Twenty babysitters in the babysitters club earned a total of $400 for the club each month. How much would 40 babysitters earn?
$800
Problem-Solving Practice

Multiply Multi-Digit Numbers

Solve.

1. The first floor of an apartment building has space for 112 small apartments. The next 5 floors are the same. The first 6 floors of the apartment building have space for how many apartments?

   672

2. Each year 6,578 people eat lunch in a certain restaurant. During a period of 5 years, how many people will eat in this restaurant?

   32,890 people

3. The maximum number of people that can be on the top of a building at one time is 400. By 10 A.M. one morning there had already been 4 groups of 398 people to the top. How many people have been to the top of the building already?

   1,592 people

4. In one greenhouse, there were 427 plants. If there were 5 greenhouses growing the same number of plants, how many plants would there be altogether?

   2,135 plants

5. A famous concert hall seats 9,551 people. Every seat was filled for the 9 concerts that took place in June. How many people heard a concert in this concert hall in June?

   85,959 people

6. A taxi driver kept track of how many people were friendly to him in a day. Sixteen people told him what they were doing in the city, 8 asked him if he had a family, 23 told him what they liked best about the city, and 3 asked if they could buy him coffee. The taxi driver wanted his friends to believe that people are friendly, so he tripled his numbers. How many people did the taxi driver say were friendly to him?

   150 people

Enrich

More Multiples

Using only 1, 2, 3, and 6 to make three-digit numbers, find six even multiples of three. (You may not repeat these numerals in the same three-digit number, so numbers like 222 are not allowed.)

Write the six even multiples of three in order from least to greatest:

1. 126
2. 132
3. 162
4. 216
5. 312
6. 612

Use them, in that order, to complete these multiplication problems. Then solve the problems.

1. \[
\begin{array}{c}
\text{126} \\
\times 5
\end{array}
\]

   630

2. \[
\begin{array}{c}
\text{132} \\
\times 6
\end{array}
\]

   792

3. \[
\begin{array}{c}
\text{162} \\
\times 9
\end{array}
\]

   1,458

4. \[
\begin{array}{c}
\text{216} \\
\times 4
\end{array}
\]

   864

5. \[
\begin{array}{c}
\text{312} \\
\times 7
\end{array}
\]

   2,184

6. \[
\begin{array}{c}
\text{612} \\
\times 8
\end{array}
\]

   4,896
You can use the same steps to multiply numbers that contain zeros that you use to multiply any multidigit number.

Find \(305 \times 4\).

**Step 1**

Think in terms of hundreds, tens, and ones.

- 305 is 3 hundreds + 0 tens + 4 ones.

**Step 2**

Multiply the ones.

- \(5 \times 4 = 20\)
  - Regroup 20 ones as 2 tens + 0 ones. Be sure to put the 2 in the tens column above the 0.

**Step 3**

Multiply the tens.

- \(305 \times 4 = 1220\)
  - Add the regrouped 2 tens.
  - 0 tens + 2 tens = 2 tens

**Step 4**

Multiply the hundreds.

- \(2 \times 305 = 610\)
  - 4 hundreds. 0 ones + 2 tens + 1 thousand = 1220

---

### Multiply Across Zeros

#### Multiply

1. \(402 \times 8 = 3216\)
2. \(7009 \times 3 = 21027\)
3. \(5 \times 301 = 1505\)
4. \(6 \times 9020 = 54120\)
5. \(2 \times 1099 = 2198\)
6. \(7 \times 8107 = 56749\)
7. \(806 \times 9 = 7254\)
8. \(5007 \times 4 = 20028\)
9. \(401 \times 3 = 12030\)
10. \(7028 \times 4 = 48112\)
11. \(5001 \times 9 = 63756\)
12. \(7084 \times 9 = 63756\)

#### Solve

24. Tamara has 5 tall trees in her backyard. Each tree is 108 feet tall.
   - How tall are all the trees put together? **540 feet**

25. Look back over the page and circle every product that has a 3 in the tens place. Draw a box around every product that has a 2 in the thousands place. **See students’ work.**
7–7

Homework Practice

Multiply Across Zeros

Multiply.

1. \(460 \times 6 = 2,760\)  
2. \(308 \times 8 = 2,464\)  
3. \(6,404 \times 3 = 19,212\)  
4. \(5,060 \times 5 = 25,300\)  
5. \(7,032 \times 4 = 28,128\)  
6. \(3,056 \times 6 = 18,336\)  
7. \(7,501 \times 4 = 30,004\)  
8. \(7,810 \times 8 = 62,480\)  
9. \(2,058 \times 3 = 6,174\)  
10. \(8,040 \times 2 = 16,080\)

For exercise 11, complete the table.

<table>
<thead>
<tr>
<th>Input</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>29,045</td>
<td>34,854</td>
<td>40,663</td>
<td>46,472</td>
<td>52,281</td>
</tr>
</tbody>
</table>

Solve.

11. Multiply by 5,809.

12. Jaime has 8 boxes of beads. Each box has 50 beads in it. How many beads does she have in all? 400 beads

Spiral Review

Solve (Lesson 7-6)

13. \(9,732 \times 9 = 87,588\)

14. \(2,581 \times 2 = 5,162\)

15. There are 182 bulletin boards throughout the school. Each bulletin board is covered by 8 large pieces of colored paper. Every summer the colored paper is replaced. How many sheets of paper does it take to cover the bulletin boards? 1,456 sheets

16. The school bulletin boards display at least 1,000 students’ papers. The bulletin boards are changed 9 times during the school year. At least how many student papers are displayed over the year? 9,000 papers
7–7

Enrich

Mental Math Challenge

Choose factors from the box to make true multiplication equations.

\[
\begin{array}{cccc}
3 & 810 & 5 & 608 \\
402 & 6 & 2,003 & 9 \\
7 & 4,005 & 4 & 906 \\
306 & 2 & 5,002 & 8 \\
\end{array}
\]

1. \(3 \times 402 = 1,206\)
2. \(5 \times 306 = 1,530\)
3. \(7 \times 2,003 = 14,021\)
4. \(4 \times 810 = 3,240\)
5. \(6 \times 4,005 = 24,030\)
6. \(6 \times 306 = 1,836\)
7. \(8 \times 5,002 = 40,016\)
8. \(9 \times 608 = 5,472\)

Using the word bank below, complete each sentence by writing the correct word or words in the blank.

addition division estimate multiplication product subtraction whole numbers

1. The term \textbf{division} means to split a number into equal parts.
2. \textbf{multiplication} is an operation on two numbers to find their product. It can be thought of as repeated addition.
3. An operation on two or more addends that is equal to a sum is \textbf{addition}.
4. An \textbf{estimate} is a number close to an exact value; it indicates about how much.
5. \textbf{subtraction} is an operation on two numbers that tells the difference, when some or all are taken away.
6. A \textbf{product} is the answer to a multiplication problem. It also refers to expressing a number as a product of its factors.
7. The numbers 0, 1, 2, 3, 4 are \textbf{whole numbers}.
Read each question aloud to the student. Then write the student’s answers on the lines below the question.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Elena is cleaning her room. She can fit 25 books on each shelf of her bookcase. There are 6 shelves. How many books will fit on the bookcase?</td>
<td>150 books</td>
</tr>
<tr>
<td>9. Tell how you got your answer.</td>
<td>25 \times 5 = 125</td>
</tr>
<tr>
<td>10. If she could fit 20 books on a shelf and there were 4 shelves, how many books could she fit?</td>
<td>80 books</td>
</tr>
<tr>
<td>11. Tell how you got your answer.</td>
<td>20 \times 4 = 80</td>
</tr>
<tr>
<td>12. If she could fit 30 books on a shelf and there were 4 shelves, how many books could she fit?</td>
<td>120 books</td>
</tr>
<tr>
<td>13. Tell how you got your answer.</td>
<td>30 \times 4 = 120</td>
</tr>
<tr>
<td>14. Describe the pattern you see in Exercise 6.</td>
<td>Sample answer: Each time you add a zero to the factor, you add a zero to the product.</td>
</tr>
</tbody>
</table>
### Chapter 7 Assessment Answer Key

#### Diagnostic Assessment Page 44

1. 12
2. $6
3. 20
4. $24
5. $50
6. thousands
7. ones
8. tens
9. hundreds
10. 1: thousands
   6: hundreds
   4: tens
   5: ones
11. 40
12. 400
13. 3,000
14. $40,000
15. 10,000
16. people

#### Chapter Pretest Page 45

1. 6,300
2. 20,000
3. 60
4. 111
5. 196
6. $43,587
7. 535
8. 1,600
9. Yes
10. No
11. No
12. $5,000 \times 3 = $15,000
13. 800 \times 5 = 4,000
14. $618
15. 480
16. minutes

#### Quiz 1 Page 46

1. 15
2. 150
3. 1,500
4. 15,000
5. 350
6. 80
7. 3
8. 60
9. 72,000
10. 27,000
11. 1,800
12. Yes

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Chapter 7 Assessment Answer Key

Quiz 2
Page 47

1. \(6 \times 400 = 2,400\)
2. \(900 \times 7 = 6,300\)
3. \(7 \times 2,000 = 14,000\)
4. \(2 \times 1,000 = 2,000\)
5. \(4,000 \times 4 = 16,000\)
6. 168
7. 190
8. 648
9. 138
10. 315
11. about 3,000 miles
12. about $4,000

Quiz 3
Page 48

1. $1,593
2. 2,485
3. $5,152
4. 1,503
5. $35,021
6. 5,424
7. 32,004
8. 3,972
9. $20; work backward
10. $22; make a table
11. 27 seeds; look for a pattern
12. about $4,000

Mid-Chapter Review
Page 49

1. D
2. J
3. B
4. J
5. D
6. 40 books
7. $900
8. 66
9. $96
10. $10
**Chapter 7 Assessment Answer Key**

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<td>10. J</td>
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<tr>
<td>11. A</td>
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<td>11. <strong>C</strong></td>
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<td>2. <strong>F</strong></td>
<td>12. <strong>H</strong></td>
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<tr>
<td>11. <strong>B</strong></td>
<td>3. <strong>B</strong></td>
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<tr>
<td>12. <strong>J</strong></td>
<td>4. <strong>G</strong></td>
<td></td>
</tr>
<tr>
<td>13. <strong>C</strong></td>
<td>5. <strong>B</strong></td>
<td>13. <strong>C</strong></td>
</tr>
<tr>
<td>14. <strong>G</strong></td>
<td>6. <strong>F</strong></td>
<td>14. <strong>F</strong></td>
</tr>
<tr>
<td>15. <strong>B</strong></td>
<td>7. <strong>B</strong></td>
<td>15. <strong>A</strong></td>
</tr>
<tr>
<td>16. <strong>H</strong></td>
<td>8. <strong>F</strong></td>
<td>16. <strong>G</strong></td>
</tr>
<tr>
<td></td>
<td>9. <strong>A</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. <strong>F</strong></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 7 Assessment Answer Key

Form 2C
Page 61

1. $90

2. 150
   minute

3. 
   \[ 5 \times 200 = \]
   
   \[ 1,000 \]

4. 
   \[ 2 \times 300 = \]
   
   \[ 600 \]

5. 210
   students

6. 3,500

7. 6,000

8. 3,618

9. 432

10. 50
    books

11. 162

12. 72
    members

13. 
   \[ 50 \times 6 = 300 \]

14. 
   \[ 7 \times 9 \text{ ones,} \]
   \[ 7 \times 3 \text{ tens,} \]
   \[ 7 \times 1 \text{ hundred} = 973 \]

15. 2,400

16. 600

17. 
   \[ 240; \]
   \[ 2,400; \]
   \[ 24,000 \]

18. 16,000

Form 2D
Page 62

1. $90

2. 150
   minutes

3. 
   \[ 5 \times 200 = \]
   
   \[ 1,000 \]

4. 
   \[ 2 \times 300 = \]
   
   \[ 600 \]

5. 210
   students

6. 3,500

7. 6,000

8. 50
    books

9. 162

10. 72
    members

11. 
   \[ 50 \times 6 = 300 \]

12. 72
    members

13. 
   \[ 7 \times 9 \text{ ones,} \]
   \[ 7 \times 3 \text{ tens,} \]
   \[ 7 \times 1 \text{ hundred} = 973 \]

14. 
   \[ 7 \times 9 \text{ ones,} \]
   \[ 7 \times 3 \text{ tens,} \]
   \[ 7 \times 1 \text{ hundred} = 973 \]

15. 2,400

16. 600

17. 
   \[ 240; \]
   \[ 2,400; \]
   \[ 24,000 \]

18. 16,000

(continued on the next page)
### Chapter 7 Assessment Answer Key

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<td>Page 66</td>
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</tbody>
</table>

#### 1.
$150

#### 2.
420 minutes

#### 3.
$5 \times 200 = 1,000$

#### 4.
$2 \times 200 = 400$

#### 5.
600 pencils

#### 6.
3,500

#### 7.
6,000

#### 8.
50 books

#### 9.
162

#### 10.
72 members

#### 11.
$50 \times 6 = 300$

#### 12.
$7 \times 9$ ones, $7 \times 3$ tens, $7 \times 1$ hundred and 973

#### 13.
$3,600$

#### 14.
8

#### 15.
240; 2,400; 24,000

#### 16.
16,000
### Chapter 7 Assessment Answer Key

**Page 67, Extended-Response Test**

**Scoring Rubric**

<table>
<thead>
<tr>
<th>Level</th>
<th>Specific Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The student demonstrates a <strong>thorough understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student has responded correctly to the task, used mathematically sound procedures, and provided clear and complete explanations and interpretations. The response may contain minor flaws that do not detract from the demonstration of a thorough understanding.</td>
</tr>
<tr>
<td>3</td>
<td>The student demonstrates an <strong>understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student’s response to the task is essentially correct with the mathematical procedures used and the explanations and interpretations provided demonstrating an essential but less than thorough understanding. The response may contain minor errors that reflect inattentive execution of the mathematical procedures or indications of some misunderstanding of the underlying mathematics concepts and/or procedures.</td>
</tr>
<tr>
<td>2</td>
<td>The student has demonstrated only a <strong>partial understanding</strong> of the mathematics concepts and/or procedures embodied in the task. Although the student may have used the correct approach to obtaining a solution or may have provided a correct solution, the student’s work lacks an essential understanding of the underlying mathematical concepts. The response contains errors related to misunderstanding important aspects of the task, misuse of mathematical procedures, or faulty interpretations of results.</td>
</tr>
<tr>
<td>1</td>
<td>The student has demonstrated a <strong>very limited understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student’s response to the task is incomplete and exhibits many flaws. Although the student has addressed some of the conditions of the task, the student reached an inadequate conclusion and/or provided reasoning that was faulty or incomplete. The response exhibits many errors or may be incomplete.</td>
</tr>
<tr>
<td>0</td>
<td>The student has provided a <strong>completely incorrect</strong> solution or uninterpretable response, or no response at all.</td>
</tr>
</tbody>
</table>
In addition to the scoring rubric found on page A27, the following sample answers may be used as guidance in evaluating open-ended assessment items.

1. To find $4 \times 9,000$ you can use the basic fact that $4 \times 9 = 36$. Then you need to add 3 zeros in order to make it 36,000.

   Pattern:
   $4 \times 9 = 36$
   $4 \times 90 = 360$
   $4 \times 900 = 3,600$
   $4 \times 9000 = 36,000$

2. When you figure out that $20 \times 2 = 40$ and knowing that there are 30 children, you can confirm that the claim is reasonable. If there are 30 students and 40 packs of crayons, there are more than enough packs for each child to get one pack of crayons.

3. From each of the 4 fourth-grade classrooms, 10 students are getting their school pictures taken on Monday. How many students are getting their school pictures taken on Monday? [Answer: 40]

4. Sample answer: The multiplication problem $201 \times 4 = 804$ does not belong because it is the only problem that does not involve regrouping.
## Chapter 7 Assessment Answer Key

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<td>10. G</td>
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<tr>
<td>3. C</td>
<td>6. G</td>
<td>11. 64,000</td>
</tr>
<tr>
<td>7. B</td>
<td></td>
<td>12. 210</td>
</tr>
<tr>
<td>8. H</td>
<td></td>
<td>13. (2 \times 300 = 600)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14. 138</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15. 13,164</td>
</tr>
</tbody>
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