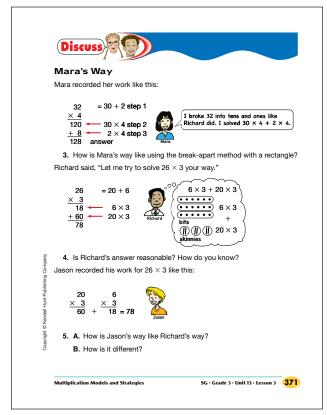


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\*Answers and/or discussion are included in the lesson.

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## **Student Guide**

## Multiplication Models and Strategies (SG pp. 370–371) Questions 1–5

- **I.\*** Estimates will vary. Possible estimate:  $30 \times 4 = 120$
- **2.\*** 128 tiles
- **3.\*** Possible response: Both methods break a product into simpler products. Then you add the partial products. It is like breaking a 32 × 4 rectangle into a 30 × 4 rectangle and a 2 × 4 rectangle. When Mara multiplies the 4 by the tens in 32, that matches the large 4 × 30 rectangle. When Mara multiplies the 4 by the ones in 32, that matches the small 4 × 2 rectangle.
- **4.** Richard's answer is reasonable. 26 is close to  $25.25 \times 3 = 75$ , and 78 is close to that.
- **5. A.\*** Possible response: Jason breaks the 26 into tens and ones, 20 + 6, like Richard does. Then he records partial products like Richard does. He multiplies the tens times 3,  $20 \times 3$ , and records 60. He multiplies the ones times 3,  $6 \times 3$ , and records 18. They both add the partial products, 60 + 18, to get the same product, 78.
  - B.\* Possible response: It looks different.
    Richard's problem is recorded in a vertical fashion. Jason's problems are written side by side. Jason multiplied 20 × 3 first.
    Richard multiplied 6 × 3 first.

## Answer Key • Lesson 3: Multiplication Models and Strategies

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Homework (SG p. 372) Questions 1–15 I. 37 $\frac{\times 8}{56}$ $\pm 240$	$\underbrace{\begin{array}{c} \hline & & & \\ \hline \hline & & & \\ \hline \hline \hline \\ \hline & & & \\ \hline \hline \hline \\ \hline \hline & & & \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline$
296 2. 72 3. 387 4. 174 5. 207 6. 117	4. $2 \times 87 = ?$ 5. $23 \times 9 = ?$ 6. $9 \times 13 = ?$ 7. $34 \times 9 = ?$ 8. $4 \times 79 = ?$ 9. $18 \times 7 = ?$ 10. $6 \times 68 = ?$ 11. $53 \times 8 = ?$ 12. $42 \times 5 = ?$ 13. Solve $3 \times 37$ . Write a story and draw a picture to match your solution.       14. Explain why your answer to Question 8 is reasonable.       15. Luis drew a rectangle to help him solve $34 \times 5$ . Then he recorded his work using Mara's method. "Something does not seem right," Luis solve the microke?       14. Explain work using Mara's method.
<ul> <li>7. 306</li> <li>8. 316</li> <li>9. 126</li> <li>10. 408</li> <li>11. 424</li> </ul>	$30 \qquad 4 \\ 5 \qquad 30 \\ 30 \\ 30 \\ 34 \\ 5 = ? \\ 34 \\ 5 \\ 34 \\ 5 = ? \\ 34 \\ 5 \\ 34 \\ 5 = ? \\ 34 \\ 5 \\ 35 \\ 35 \\ 5 \\ 5 \\ 5 \\ 5 \\ 5 \\ 5 \\$
<b>12.</b> 210	

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13. 111; Stories and pictures will vary. Sample story: There were 37 sets of triplets. 30 sets of triplets were boys and 7 sets of triplets were girls. How many children were there? Sample solution:  $30 \times 3$  boys + 7 × 3 girls = 111 children

Sample picture:

B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	В	B	B
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	В	B	B
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

- 14. Possible response:  $4 \times 80 = 320$  so  $4 \times 79$  should be 4 less than that. 316 is reasonable.
- **15.** Luis recorded  $3 \times 5 = 15$ . He should have multiplied  $30 \times 5$  and recorded 150.