

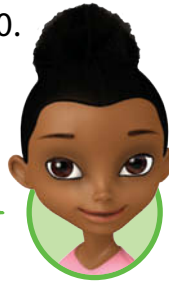
Homework & Practice 3-4

Mental Math Strategies for Multiplication

Another Look!

Use mental math to calculate $4 \times 4,002$ and 8×60 .

You can break numbers apart, use properties of operations, or use compensation to multiply mentally.



Use compensation to find $4 \times 4,002$.

4,000 is close to 4,002.

$$4 \times 4,000 = 16,000$$

$$4,000 + 2 = 4,002 \quad 4 \times 2 = 8$$

$$16,000 + 8 = 16,008$$

Use properties of operations to find 8×60 .

$$8 \times 60 = (4 \times 2) \times 60$$

$$= 4 \times (2 \times 60)$$

$$= 4 \times 120$$

$$= 480$$

For **1–18**, use mental math to find each product.

$$\begin{aligned} 1. \quad 5 \times 395 &= 5 \times (\underline{\quad} - \underline{\quad}) \\ &= (5 \times \underline{\quad}) - (5 \times \underline{\quad}) \\ &= \underline{\quad} - \underline{\quad} \\ &= \underline{\quad} \end{aligned}$$

$$\begin{aligned} 2. \quad 7 \times 312 &= 7 \times (\underline{\quad} + \underline{\quad}) \\ &= (7 \times \underline{\quad}) + (7 \times \underline{\quad}) \\ &= \underline{\quad} + \underline{\quad} \\ &= \underline{\quad} \end{aligned}$$

$$3. \quad 9 \times 898$$

$$4. \quad 2 \times 144$$

$$5. \quad 4 \times 408$$

$$6. \quad 8 \times 15$$

$$7. \quad 36 \times 9$$

$$8. \quad 3 \times 496$$

$$9. \quad 4 \times 509$$

$$10. \quad 3,004 \times 6$$

$$11. \quad 6 \times 198$$

$$12. \quad 5 \times 999$$

$$13. \quad 8 \times 250$$

$$14. \quad 4 \times 525$$

$$15. \quad 6 \times 28$$

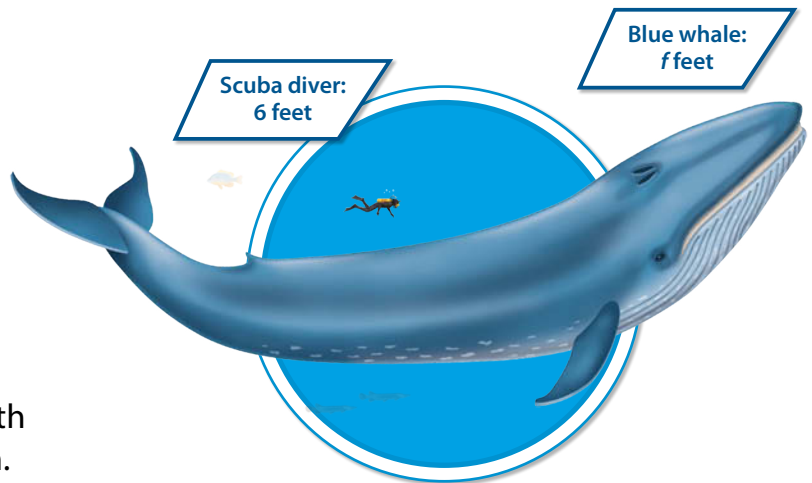
$$16. \quad 7 \times 156$$

$$17. \quad 9 \times 1,276$$

$$18. \quad 3 \times 1,607$$

For 19–20, use the picture at the right.

19. © **MP.2 Reasoning** The longest blue whale on record was about 18 scuba divers in length. Use breaking apart to estimate the length of the blue whale.



20. Explain how to estimate the length of the whale using compensation.

21. In an election, 589,067 people voted. Write 589,067 in expanded form and using number names.

22. **Higher Order Thinking** Davidson's Bakery bakes 108 cookies and 96 muffins every hour. How many baked goods are baked in 4 hours? Use mental math to solve.

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23. Which of the following expressions shows how to use mental math to find the product of 8×490 ? Select all that apply.

- $8 + (400 \times 90)$
 $(8 \times 400) + (8 \times 90)$
 $(8 \times 400) + (8 \times 9)$
 $(8 \times 500) - (8 \times 10)$
 $8 \times (500 \times 10)$

24. Which of the following expressions shows how to use mental math to find the product of $4 \times 2,025$? Select all that apply.

- $4 \times (2,000 + 20 + 5)$
 $(4 \times 2,000) + 25$
 $(4 \times 2,000) + (4 \times 25)$
 $4 \times (2,000 + 25)$
 $(4 \times 2,000 \times 25)$