Name Key ODDS ONLY

Week 9 Homework due WEDNESDAY 10/16/19

Help Practice Buddy Tools Games

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.

1. $5 \times 395 = 5 \times (400 - 5)$
$= (5 \times 400) - (5 \times 5)$
$= 2000 - 25$
$= 1975$

2. $7 \times 312 = 7 \times (\_\_\_ + \_\_\_)$
$= (7 \times \_\_\_) + (7 \times \_\_\_)$
$= \_\_\_ + \_\_\_$
$= \_\_\_$

3. 9×898 (900 − 2)
$8100 - 18 =$
8,082

4. 2×144

5. 4×408 (400 + 8)
$1600 + 32 =$
1,632

6. 8×15

7. 36×9 (40 − 4)
$360 - 36 = 324$

8. 3×496

9. 4×509 (500 + 9)
$2000 + 36 =$
2,036

10. $3{,}004 \times 6$

11. 6×198 (200 − 2)
$1200 - 12 = 1188$

12. 5×999

13. 8×250 (200 + 50)
$1600 + 400 =$
2,000

14. 4×525

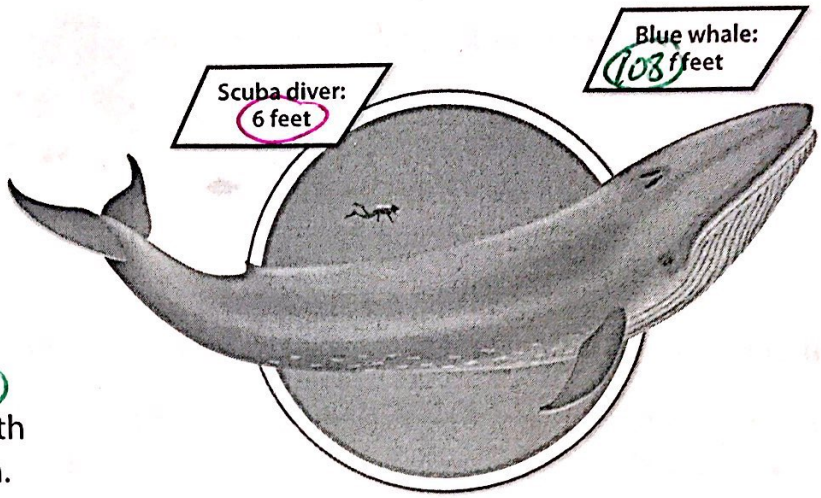
15. 6×28 (30 − 2)
$180 - 12 = 168$

16. 7×156

17. $9 \times 1{,}206$ (1,200 + 6)
$10{,}800 + 630 + 54$
11,484

18. $3 \times 1{,}607$

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 × 6 = 120 − 12 = 108 ft

OR

10 × 6 = 60 + 48 = 108 ft

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 (word form)

500,000 + 80,000 + 9,000 + 60 + 7

Five hundred eighty-nine thousand, sixty-seven

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.

Common Core Assessment

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 × 90)
- ☑ (8 × 400) + (8 × 90)
- ☐ (8 × 400) + (8 × 9)
- ☑ (8 × 500) − (8 × 10)
- ☐ 8 × (500 ⊗ 10)

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

- ☐ 4 × (2,000 + 20 + 5)
- ☐ (4 × 2,000) + 25
- ☐ (4 × 2,000) + (4 × 25)
- ☐ 4 × (2,000 + 25)
- ☐ (4 × 2,000 × 25)

Name _____

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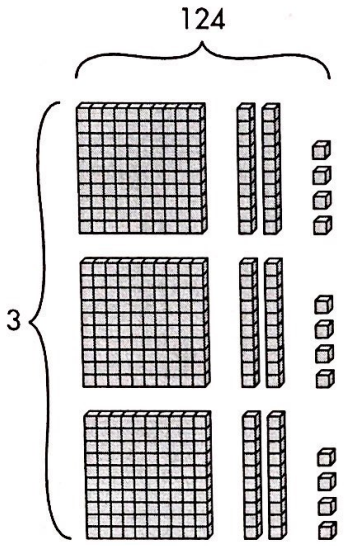
Homework & Practice 3-5
Arrays and Partial Products

Another Look!

You can use place value, arrays, and properties of operations to help multiply.

Find 3×124.



$$3 \times 124 = 3 \times (100 + 20 + 4)$$
$$= (3 \times 100) + (3 \times 20) + (3 \times 4)$$
$$= 300 + 60 + 12$$
$$= 372$$

The partial products are modeled by the drawing.

$$\begin{array}{r} 124 \\ \times \quad 3 \\ \hline 12 \\ 60 \\ +\ 300 \\ \hline 372 \end{array}$$

3×4 ones
3×2 tens
3×1 hundred

For **1–8**, complete each calculation. Use place-value blocks or draw arrays as needed.

1. 218×4

32
40
+ 800
872

2. 411×2

3. 223×5

15
100
+ 1000
1,115

4. 316×3

5. $1{,}178 \times 5$

40
350
500
+5,000
5,890

6. $2{,}148 \times 3$

7. $1{,}116 \times 2$

12
20
200
+2000
2,232

8. $2{,}136 \times 4$

9. James was able to correctly name 11 major highways, 4 mountains, 86 major cities, and 9 bodies of water on a map. How many places on the map did James identify? Explain how you can use compatible numbers to help calculate the sum.

11 + 4 + 86 + 9

(4 + 86) + (11 + 9) =

90 + 20 = 110

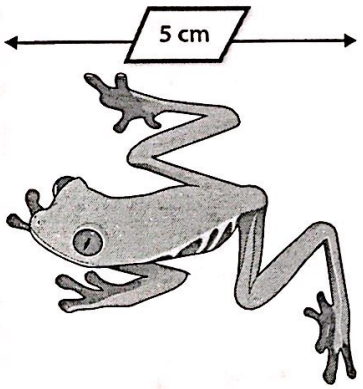
SHOW Ms. N

Sample

I used the associative property to group compatible addends together before adding. 86 and 4 make 90 and 11 and 9 make 20, which are easy numbers to add.

10. **MP.5 Use Appropriate Tools** Show how you can use place-value blocks or draw an array to find the partial products for 4 × 125.

11. A red tree frog can jump up to 150 times its body length. How far can this tree frog jump?



150 × 5

500 + 250 =

750cm

12. **Higher Order Thinking** Tony says to multiply 219 × 3, you multiply 2 × 3, 1 × 3, and 9 × 3, then add the products. Explain Tony's error. How would you help Tony understand how to correctly multiply 219 × 3?

Common Core Assessment

13. Complete the calculation using the numbers from the box. Use each number once.

	2,	4	8	1
×				6
				6
		4	8	0
	2,	4	0	0
1	2,	0	0	0
1	4,	8	8	6

0	1
2	4
6	8

14. Complete the calculation using the numbers from the box. Use each number once.

	3,	0	4	9
×				6
				4
	2		0	
				0
1		,	0	0
	8,			4

1	2
4	5
8	9

Name _____

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Homework & Practice 3-6

Use Partial Products to Multiply by 1-Digit Numbers

Another Look!

Three groups of 145 students attended the play.
How many students attended the play?

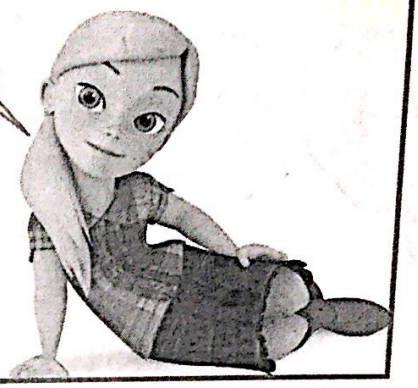
Find 3×145.

Record the partial products.

$$\begin{array}{rl} 145 & \\ \times\ \ 3 & \\ \hline 15 & 3 \times 5 \\ 120 & 3 \times 40 \\ +\ 300 & 3 \times 100 \\ \hline 435 & \end{array}$$

435 students attended the play.

You can use an algorithm to record the partial products when multiplying.



For **1–16**, find each product using an algorithm. Draw pictures, use arrays, or area models if needed. Check if your answer is reasonable.

for example, round and compare!

1. 275 × 6 = 1650 ≈ 300 × 6 = 1800 ✓

2. 164 × 5

3. 317 × 9 = 2853

4. 3,933 × 4

5. 15 × 8 = 120

6. 137 × 4

7. 1,619 × 7 = 11,333

8. 4,269 × 5

9. 64 × 7 = 448

10. 96 × 3

11. 531 × 8 = 4248

12. 5 × 2,111

13. 62 × 9 = 558

14. 217 × 4

15. 119 × 3 = 357

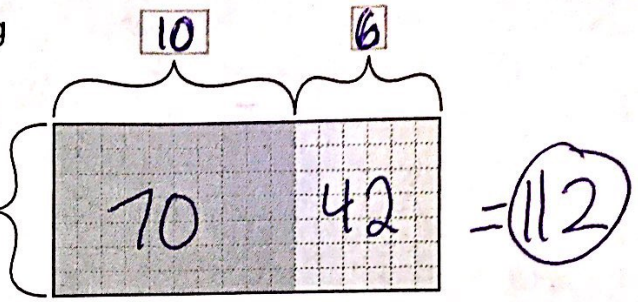
16. 1,231 × 2

17. **MP.4 Model with Math** Complete the model showing how to use the Distributive Property to find the product of 7 and 16. Then write an equation showing how to find the product using the Distributive Property.

$7 \times 16 = 7 \times (10+6) = (7 \times 10) + (7 \times 6)$

$70 + 42$

112

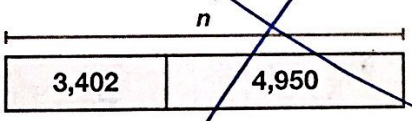


18. Fred's Auto Sales purchases 3 new vehicles for $11,219, $31,611, and $18,204. What was the total cost for all the vehicles?

19. Kinsey earns $54,625 a year. She purchases a snowmobile for $12,005. How much of Kinsey's yearly earnings does she have left?

54,625
−12,005
$42,620

20. **Number Sense** Dalton added 3,402 + 4,950 to get 8,352. Estimate the sum by rounding the addends to the nearest hundred. Is Dalton's sum reasonable? Explain.



21. **Higher Order Thinking** Josh used an algorithm to find the product for 9 × 239. His work is shown below. Is Josh's work correct? Explain.

239
× 9
1,800
270
+ 81
2,151

Josh's work is correct because...

★SHOW MS. N★

Common Core Assessment

22. DeShawn fuels 2 yachts and 6 barges. Each boat gets 126 gallons of fuel. To find how much fuel he needs for all the boats, DeShawn first finds the number of boats, then he uses an algorithm to multiply. Which are the three partial products DeShawn could add to find the final product?

- ☐ 48
- ☐ 80
- ☐ 160
- ☐ 800
- ☐ 8,000