

Homework & Practice 3-5

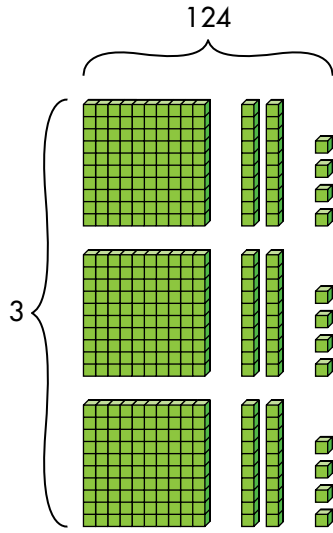
Arrays and Partial Products

Another Look!

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



Find 3×124 .



$$\begin{aligned}
 3 \times 124 &= 3 \times (100 + 20 + 4) \\
 &= (3 \times 100) + (3 \times 20) + (3 \times 4) \\
 &= 300 + 60 + 12 \\
 &= 372
 \end{aligned}$$

$$\begin{array}{r}
 124 \\
 \times 3 \\
 \hline
 12 \quad 3 \times 4 \text{ ones} \\
 60 \quad 3 \times 2 \text{ tens} \\
 + 300 \quad 3 \times 1 \text{ hundred} \\
 \hline
 372
 \end{array}$$

The partial products are modeled by the drawing.



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

1.
$$\begin{array}{r}
 218 \\
 \times 4 \\
 \hline
 \\
 + \\
 \hline
 \end{array}$$

2.
$$\begin{array}{r}
 411 \\
 \times 2 \\
 \hline
 \\
 + \\
 \hline
 \end{array}$$

3.
$$\begin{array}{r}
 223 \\
 \times 5 \\
 \hline
 \\
 + \\
 \hline
 \end{array}$$

4.
$$\begin{array}{r}
 316 \\
 \times 3 \\
 \hline
 \\
 + \\
 \hline
 \end{array}$$

5.
$$\begin{array}{r}
 1,178 \\
 \times 5 \\
 \hline
 \end{array}$$

6.
$$\begin{array}{r}
 2,148 \\
 \times 3 \\
 \hline
 \end{array}$$

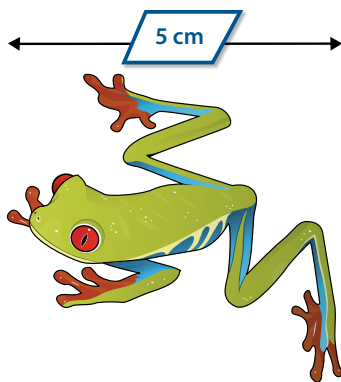
7.
$$\begin{array}{r}
 1,116 \\
 \times 2 \\
 \hline
 \end{array}$$

8.
$$\begin{array}{r}
 2,136 \\
 \times 4 \\
 \hline
 \end{array}$$

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.

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?



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.

$$\begin{array}{r}
 2, 4 8 1 \\
 \times \quad 6 \\
 \hline
 \square \\
 0 \\
 \square, 4 0 0 \\
 1 2, 0 0 \square \\
 \hline
 \square 4, \square 8 6
 \end{array}$$

0	1
2	4
6	8

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

$$\begin{array}{r}
 3, 0 4 9 \\
 \times \quad 6 \\
 \hline
 \square 4 \\
 2 \square 0 \\
 0 \\
 1 , 0 0 0 \\
 \hline
 \square 8, \square \square 4
 \end{array}$$

1	2
4	5
8	9