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Multiplying Decimals by Two-Digit Whole Numbers

1 Here's How

Multiply decimals by two-digit whole numbers one place at a time. Multiply by the ones first. Then multiply by the tens. Add the partial products.

A **partial product** is the product of one place of a factor and the other factor.

Look at this example.

```
  8.3
× 14
 332
```

Step 1

Multiply by the ones: 4 × 83 = 332. Write the partial product.

Omit decimal points in the partial products.

```
  8.3
× 14
 332
 830
```

Step 2

Multiply by the tens: 10 × 83 = 830. Write the partial product under the first partial product.

```
  8.3
× 14
 332
 830
116.2
```

Step 3

Add the partial products. The sum is the total product.

Count the number of decimal places in the factors. There is one. Write the decimal point in the product one place from the right.

The product of 14 × 8.3 is 116.2.

2 Try It

Complete each step.

32 × 0.34 =

Write the problem vertically in the space at the left. Do the work there.

Multiply by the ones. The partial product is _____.

Multiply by the tens. The partial product is _____.

Add the partial products. The sum is _____.

How many decimal places are in the factors? _____
Place the decimal point.

The product is _____.

3 On Your Own

Multiply.

1.
$$\begin{array}{r} 0.8 \\ \times\ 42 \\ \hline 16 \\ 320 \\ \hline 33.6 \end{array}$$

2.
$$\begin{array}{r} 1.2 \\ \times\ 53 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 0.5 \\ \times\ 24 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 3.2 \\ \times\ 86 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 0.71 \\ \times\ 15 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 2.42 \\ \times\ 27 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 0.56 \\ \times\ 91 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 1.45 \\ \times\ 39 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 0.214 \\ \times\ 71 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 1.004 \\ \times\ 44 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 0.725 \\ \times\ 16 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 5.203 \\ \times\ 68 \\ \hline \end{array}$$

Write each problem vertically. Then multiply.

13. $12 \times 3.4 =$

$$\begin{array}{r} 3.4 \\ \times\ 12 \\ \hline 68 \\ 340 \\ \hline 40.8 \end{array}$$

14. $53 \times 7.5 =$

15. $38 \times 3.19 =$

16. $81 \times 0.525 =$

4 Think About It

Answer the question. Write your answer below.

17. When one factor is a decimal less than 1 and the other is a whole number, how does the product compare to the whole number? Is it larger or smaller? Explain.