

Name \_\_\_\_\_

# Multiply Decimals

**I Can** use place-value strategies to place a decimal point when multiplying.

**CONNECT** You can use what you have learned about patterns and place value to place the decimal point in the product when you multiply two decimals.

$$1 \times 0.1 = 0.1$$

$$0.1 \times 0.1 = 0.01$$

$$0.01 \times 0.1 = 0.001$$

## Florida's B.E.S.T.

- Number Sense & Operations 5.NSO.2.4, 5.NSO.2.5
- Mathematical Thinking & Reasoning MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1, MTR.7.1

## Remember

When a number is multiplied by a decimal, the decimal point moves one place to the left in the product for each decreasing place value being multiplied.



## UNLOCK the Problem

A male leopard seal is measured and has a length of 2.8 meters. A male elephant seal is about 1.5 times as long. What length is the male elephant seal?

**Multiply.**  $1.5 \times 2.8$

**One Way** Use place value.

**STEP 1** Multiply as with whole numbers.

**STEP 2** Place the decimal point.

**Think:** Tenths are being multiplied by tenths. Use the pattern  $0.1 \times 0.1$ .

Place the decimal point so the value of the decimal is \_\_\_\_\_.

$$\begin{array}{r}
 28 \xrightarrow{\times 0.1} 2.8 \text{ 1 place value} \\
 \times 15 \xrightarrow{\times 0.1} \times 1.5 \text{ 1 place value} \\
 \hline
 140 \\
 + 280 \\
 \hline
 420 \xrightarrow{\times 0.01} \text{ 1 + 1, or 2 place values}
 \end{array}$$

So, the length of a male elephant seal is about \_\_\_\_\_ meters.



- **MTR** What if you multiplied 2.8 by 1.74? What would be the place value of the product? Explain your answer.

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## Another Way Use estimation.

You can use an estimate to place the decimal point in a product.

**Multiply.**  $7.8 \times 3.12$

**STEP 1** Estimate by rounding each factor to the nearest whole number.

$$\begin{array}{r} 7.8 \times 3.12 \\ \downarrow \quad \downarrow \\ \underline{\quad} \times \underline{\quad} = \underline{\quad} \end{array}$$

$$\begin{array}{r} 312 \\ \times 78 \\ \hline \end{array}$$

$$\begin{array}{r} 3.12 \\ \times 7.8 \\ \hline \end{array}$$

**STEP 2** Multiply as with whole numbers.

**STEP 3** Use the estimate to place the decimal point.

**Think:** The product should be close to your estimate.

$$7.8 \times 3.12 = \underline{\quad}$$

## Share and Show

Math Board

**Place the decimal point in the product.**

1. 
$$\begin{array}{r} 3.62 \\ \times 1.4 \\ \hline 5068 \end{array}$$

**Think:** A hundredth is being multiplied by a tenth. Use the pattern  $0.01 \times 0.1$ .

2. 
$$\begin{array}{r} 6.8 \\ \times 1.2 \\ \hline 816 \end{array}$$

Estimate:  $1 \times 7 = \underline{\quad}$

**Find the product.**

3. 
$$\begin{array}{r} 0.9 \\ \times 0.8 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 84.5 \\ \times 5.5 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 2.39 \\ \times 2.7 \\ \hline \end{array}$$

Math Talk

**MTR 2.1** Demonstrate understanding in multiple ways.

How can you know the place value of the product for Problem 5 before you solve?