Name _____

Multiply Decimals with Zeros in the Product

I Can understand the concept of having the correct number of decimal places in a product.

🔲 UNLOCK the Problem Real World

When decimals are multiplied, the product may not have enough digits to place the decimal point. In these cases, you may need to write additional zeros as place holders.

Students are racing typical garden snails and measuring the distance the snails travel in 1 minute. Chris's snail travels a distance of 0.2 foot. Jamie's snail travels 0.4 times as far as Chris's snail. How far does Jamie's snail travel?

● Using the given information, describe what you are being asked to find.

_____

_____

_____

Multiply. 0.4×0.2

STEP 1 Multiply as with whole numbers.

STEP 2 Determine the position of the decimal point in the product.

Since tenths are being multiplied by tenths,

the product will show _____.

$$
\begin{array}{r}
2 \\
\times 4 \\
\hline
8
\end{array}
\begin{array}{l}
\xrightarrow{\times 0.1} \\
\xrightarrow{\times 0.1} \\
\xrightarrow{\times 0.01}
\end{array}
\begin{array}{r}
0.2 \\
\times 0.4 \\
\hline
8
\end{array}
$$

1 place value
1 place value
1 + 1, or 2 place values

STEP 3 Place the decimal point.

Are there enough digits in the product

to place the decimal point? _____

Write zeros, as needed, to the left of the whole number product to place the decimal point.

So, Jamie's snail travels a distance of _____ foot.

Math Talk

MTR 3.1 Complete tasks with mathematical fluency.

Explain how you know when to write zeros in the product to place a decimal point.

Examples Multiply money.

0.2 × $0.30

STEP 1 Multiply as with whole numbers.

Think: The factors are 30 hundredths and 2 tenths.

What are the whole numbers you will multiply?

_____

$$\begin{array}{r} \$0.30 \\ \times \quad 0.2 \\ \hline \end{array}$$

STEP 2 Determine the position of the decimal point in the product.

Since hundredths are being multiplied by tenths,

the product will show _____.

STEP 3 Place the decimal point. Write zeros to the left of the whole number product as needed.

Since the problem involves dollars and cents, what place value should you use to show cents?

_____

So, 0.2 × $0.30 is _____.

Try This! Find the product.

0.2 × 0.05 = _____

What steps did you take to find the product?

_____

_____

_____

_____

_____

_____

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Explain why the answer to the Try This! can have a digit with a place value of hundredths or thousandths and still be correct.