

Name: _____

Period: _____

Date: _____

Math Unit 2: Fractions and Decimals**Lesson 2.5- Multiplying Decimals****SWBAT:****Paraphrase:****Essential Question:** How can you multiply decimals?

Example 1

a. Find 6×3.91 .**Estimate $6 \times 4 = 24$**

$$\begin{array}{r} 3.91 \\ \times 6 \\ \hline 23.46 \end{array}$$

5
3.91 ← 2 decimal places

23.46 ← Count 2 decimal places from right to left.

So, $6 \times 3.91 = 23.46$.**Reasonable? $23.46 \approx 24$ ✓****b. Find 3×0.016 .****Estimate $3 \times 0 = 0$**

$$\begin{array}{r} 0.016 \\ \times 3 \\ \hline 0.048 \end{array}$$

1
0.016 ← 3 decimal places

0.048 ← To have 3 decimal places, insert zeros to the left of 48.

So, $3 \times 0.016 = 0.048$.**Reasonable? $0.048 \approx 0$ ✓**

Example 2

How high is a stack of 100 dimes?**Method 1:** Multiply 1.35 by 100.

$$\begin{array}{r} 1.35 \\ \times 100 \\ \hline 000 \\ 000 \\ \hline 135 \\ \hline 135.00 \end{array}$$

2 decimal places

So, a stack of 100 dimes is 135 millimeters high.

Method 2: You are multiplying by a power of 10. Use mental math.There are **two** zeros in 100. So, move the decimal point in 1.35 **two** places to the right.

$$1.35 \times 100 = 135. = 135$$

Your Turn

Multiply. Use estimation to check your answer.

1. 12.3×8

2. 5×14.51

3. 0.88×9

4. 0.003×10

5. A quarter is 1.75 millimeters thick. How high is a stack of 1000 quarters? Solve using both methods.

Example 3

a. Multiply 4.8×7.2 .

Estimate $5 \times 7 = 35$

$$\begin{array}{r} 4.8 \longleftarrow 1 \text{ decimal place} \\ \times 7.2 \longleftarrow + 1 \text{ decimal place} \\ \hline 96 \\ 336 \\ \hline 34.56 \longleftarrow 2 \text{ decimal places} \end{array}$$

∴ So, $4.8 \times 7.2 = 34.56$. Reasonable? $34.56 \approx 35$ ✓

b. Multiply 3.1×0.05 .

Estimate $3 \times 0 = 0$

$$\begin{array}{r} 3.1 \longleftarrow 1 \text{ decimal place} \\ \times 0.05 \longleftarrow + 2 \text{ decimal places} \\ \hline 0.155 \longleftarrow 3 \text{ decimal places} \end{array}$$

∴ So, $3.1 \times 0.05 = 0.155$. Reasonable? $0.155 \approx 0$ ✓

Your Turn

Multiply. Use estimation to check your answer.

6. 8.1×5.6

7. 2.7×9.04

8. 6.32×0.09

9. 1.785×0.2

Notes /
Questions

LET'S PRACTICE-ORDER OF OPERATIONS

Evaluate the expression.

10. $12.67 + 8.2 \cdot 1.9$

11. $6.4(1.8 \cdot 7.5)$

12. You buy 4.5 pounds of bananas at \$0.49 per pound. You hand the cashier a \$20 bill. How much change will you get back?