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.**

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Estimate $6 \times 4 = 24$

$\overset{5}{3.91}$ ← 2 decimal places
$\times\ \ 6$
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 $3 \times 0 = 0$

$\overset{1}{0.016}$ ← 3 decimal places
$\times\ \ 3$
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.
1.35
$\times 1\ 00$
$\overline{\ \ 0\ 00}$
$\ 00\ 0$
$\underline{135\ \ \ }$
135.00 ← 2 decimal places

1.35 millimeters

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.

$1.35 \times 100 = 135. = 135$

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

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 × 7 = 35**

$$\begin{array}{r} 4.8 \\ \times\ 7.2 \\ \hline 9\,6 \\ 3\,3\,6 \\ \hline 3\,4.5\,6 \end{array}$$

4.8 ⟵ 1 decimal place
× 7.2 ⟵ + 1 decimal place
3 4.5 6 ⟵ 2 decimal places

⠂⠂ So, 4.8 × 7.2 = 34.56.   **Reasonable? 34.56 ≈ 35** ✓

b. Multiply 3.1 × 0.05.   **Estimate 3 × 0 = 0**

3.1 ⟵ 1 decimal place
× 0.0 5 ⟵ + 2 decimal places
0.1 5 5 ⟵ 3 decimal places

⠂⠂ So, 3.1 × 0.05 = 0.155.   **Reasonable? 0.155 ≈ 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 | |

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?