Name: _____ Date: _____

Multiplying Decimals and Whole Numbers

How do we multiply decimal numbers and whole numbers without using hundreds grids?

1. Multiply as though you were multiplying two whole numbers.
2. Count the number of digits after the decimal point in the decimal factor.
3. Place the decimal point in the answer so that the answer has the same number of decimal place values as your decimal factor.

Example 1: $4.71 \approx 5$
$\times\ 3 \rightarrow \times 3$
15

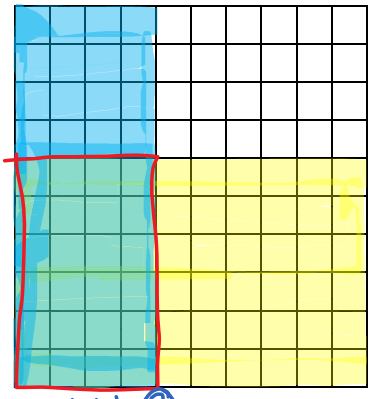
2
471
x 3
1413
14.13

Example 2: 6.813×12

Example 3: 79×52.1

Multiplying Decimals Numbers with Decimal Numbers

Example 1:



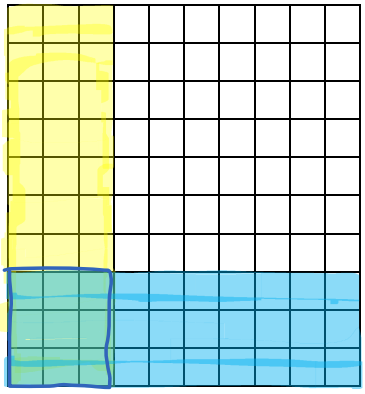
1+1=2

$0.4 \cdot 0.6 =$ 0.24

0.4 of 0.6

$\frac{4}{10}$ of $\frac{6}{10}$

Example 2:



$0.3 \cdot 0.3 =$ 0.09

0.3 of 0.3

$\frac{3}{10}$ of $\frac{3}{10}$

Do you see a pattern with the factors and products?

Stuart

Let's apply this pattern to solve multiplication problems with decimal numbers!

<u>Example 3:</u> 1.3 × 0.9

<u>Example 4:</u> 4.307(5.8) ← means multiply

4 · 6 = 24

$$\begin{array}{r} 4307 \\ \times\ 58 \\ \hline 34456 \\ +215350 \\ \hline 249806 \end{array}$$

24.9806

<u>Example 5:</u> 6.87 × 9.2

Solve: Mrs. Taylor runs at pace of 9.25 minutes per mile. If she stayed at this pace the entire time, how long would it take her to run a half marathon of 13.1 miles?

$$\begin{array}{r} 925 \\ \times\ 131 \\ \hline 925 \\ 27750 \\ +92500 \\ \hline 121175 \end{array}$$

121.175 min

9.25 ≈ 9 or 10
13.1 ≈ 12 or 13
108 or 130

Solve. *Oranges cost $3.29 per pound. Apples cost $2.89 per pound. You buy 1.8 pounds of oranges and 2.3 pounds of apples. Which costs you more, the apples or the oranges?*

$$\begin{array}{r} 3.29 \\ \times\ 1.8 \\ \hline 5.922 \end{array} = \$5.92$$

$$\begin{array}{r} 2.89 \\ \times\ 2.3 \\ \hline 6.647 \end{array} = \$6.65$$