

**AIM:** 1-9 I will be able to multiply decimal numbers!

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Date \_\_\_\_\_  
Math 6 - Period \_\_\_\_\_

**Warm-up:**

Use a calculator!		Where should the decimal go? (No calculator)	
1a.	$350 \times 5 =$ 1,750	1b.	$3.50 \times 5 =$ '2 scoops' 17.50
2a.	$1,245 \times 73 =$ 90,885	2b.	$12.45 \times 7.3 =$ '3 scoops' 90.885
3a.	$14,560 \times 125 =$ 1,820,000	3b.	$14.560 \times 12.5 =$ '4 scoops' 182.0000 ↓ 182

Place the decimal in the correct place in the product. No calculator!

4.  $3.56 \times 2.1 = 7476$

5.  $1.8 \times 200.6 = 36108$

STOP '3 scoops' 7.476      '2 scoops' 361.08



**Let's Investigate:** How do we multiply decimals?

**Vocabulary:**

**Product** - the answer to a multiplication problem.

$2 \cdot 3 = 6$   
Factors      product

**Steps:**

1. Line up the DIGITS. (The decimals DO NOT have to line up.)
2. Multiply as you would with whole numbers.
3. The number of decimal places in the product is equal to the Sum of the decimal places in the factors.
4. Use estimation to check if your answer is reasonable.

**EXAMPLE:**

**Add/Subtract:**  
 $3.45 + 2.3$   
 $\begin{array}{r} 3.45 \\ + 2.30 \\ \hline 5.75 \end{array}$   
 ← annex 0  
 Decimals line up!

**Multiply:**  
 $3.45 \times 2.3$   
 $\begin{array}{r} 3.45 \\ \times 2.3 \\ \hline 7.935 \end{array}$  } '3 scoops'

**Examples:** Find the product.

$$\begin{array}{r}
 1) \quad \overset{2}{2.3} \\
 \times 0.8 \\
 \hline
 184
 \end{array}$$

1 decimal place(s)  
1 decimal place(s)  
2 decimal place(s)

$184$        $1.84$

Check: Is your answer reasonable?

$$\begin{array}{r}
 2.3 \rightarrow 2 \\
 0.8 \rightarrow \times \frac{1}{2}
 \end{array}$$

$1.84$  is close to  $2$  ✓

multiply  $\leftarrow$

$$\begin{array}{r}
 2) \quad 6.45 \cdot 18 \\
 \begin{array}{r}
 \overset{3}{6} \overset{4}{.} \overset{5}{4} 5 \\
 \times 18 \\
 \hline
 5160 \\
 + 6450 \\
 \hline
 11610
 \end{array}
 \end{array}$$

2 'scoops'  
 $116.10$

Check: Is your answer reasonable?

$$\begin{array}{r}
 6.45 \rightarrow 6 \\
 18 \rightarrow \times 20 \\
 \hline
 120
 \end{array}$$

$116.1$  is close to  $120$ . ✓

$$\begin{array}{r}
 3) \quad 10.6(3) \\
 \begin{array}{r}
 \overset{1}{10} \overset{6}{.} \\
 \times 3 \\
 \hline
 318
 \end{array}
 \end{array}$$

1 'scoop'  
 $31.8$

Check: Is your answer reasonable?

$$\begin{array}{r}
 10.6 \rightarrow 11 \\
 3 \rightarrow \times 3 \\
 \hline
 33
 \end{array}$$

$31.8$  is close to  $33$  ✓



**Now You Try!**

- 4) Matt earns \$9.40 per hour working at an animal shelter. How much money will he earn for 5.5 hours of work? Write your answer in a complete sentence.

$$\begin{array}{r}
 940 \\
 \times 55 \\
 \hline
 4700 \\
 + 47000 \\
 \hline
 51700
 \end{array}$$

2      2  
1      1

Matt will earn \$51.70 after working 5.5 hours!

\$51.70  
(not 51.700 or 51.7)  
Money is rounded to hundredths!

5. CORRECT and EXPLAIN the error made in finding the product of 6.21 and 0.04.

Correct:

$$\begin{array}{r}
 621 \\
 \times 04 \\
 \hline
 2484
 \end{array}$$

2      2

0.2484

$6.21 \times 0.04 = 28.84$

'4 scoops'  
4 decimal places

Explanation: The first error is a multiplication error. The second error is the decimal placement. There are a total of 4 decimal places so you must move the decimal 4 places to the left, in front of the 2. (0.2484)

Use estimation to check if your answer is reasonable:

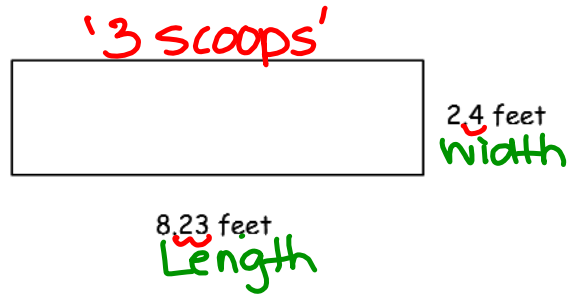


$$\begin{array}{r}
 \$9.40 \rightarrow 9 \\
 5.5 \rightarrow 6 \\
 \times 6 \\
 \hline
 54
 \end{array}$$

54 is close to 51.70 ✓

6. Find the area of the rectangle:

\*Formula: Area = length x width  
 $A = L \cdot W$



$$\begin{array}{r} 8.23 \\ \times 2.4 \\ \hline 3292 \\ + 16460 \\ \hline 19752 \end{array}$$

$$19.752$$

$$19.752 \text{ ft}^2$$

7. A student earns \$11.75 per hour for gardening. If she worked 21 hours this <sup>week</sup> ~~morning~~, how much did she earn?

$$\begin{array}{r} 11.75 \\ \times 21 \\ \hline 1175 \\ + 23500 \\ \hline 24675 \end{array}$$

\$246.75

Summarize: POST-IT EXIT TICKET

Find the product of 74.8 and 5.7

$$\begin{array}{r} 74.8 \\ \times 5.7 \\ \hline 5236 \\ + 37400 \\ \hline 42636 \end{array}$$

□  
□

426.36