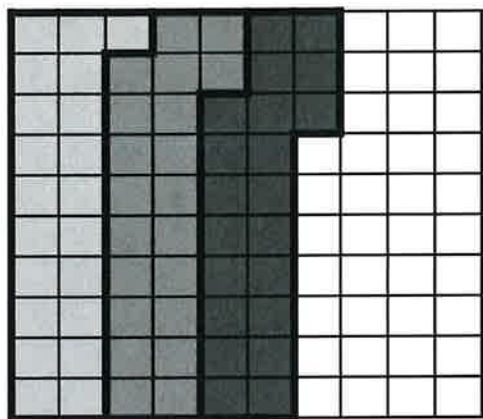


Strategies for Multiplying Decimals by Whole Numbers

$$0.21 \times 3 = 0.63$$



0.21 0.21 0.21

Modeling with Hundredths Blocks:

1. Take your decimal number (your first factor) and shade in that many squares of your hundredths block.
2. Do this as many times as the second factor (your whole number)
3. Count up your boxes and that's how many hundredths you have.
4. Write in proper decimal form.

Standard Multiplication Algorithm:

Step 1: Multiply as you would with whole numbers.

Step 2: Count how many digits you have after EVERY decimal point in the problem

Step 3: Move the decimal point to the LEFT as many places as there are digits behind the decimal

Repeated addition:

$$\begin{array}{r} 0.21 \\ 0.21 \\ + 0.21 \\ \hline 0.63 \end{array}$$

Step 1:

$$\begin{array}{r} .21 \\ \times 3 \\ \hline 63 \end{array}$$

Step 2:

$$\begin{array}{r} .21 \leftarrow 2 \text{ places} \\ \times 3 \\ \hline 63 \end{array}$$

Step 3:

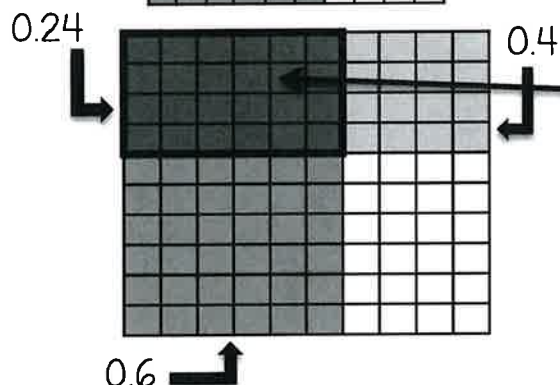
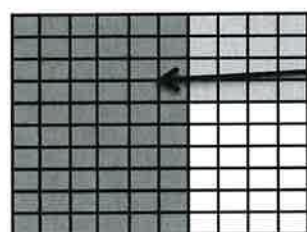
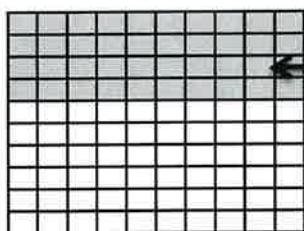
$$\begin{array}{r} .21 \\ \times 3 \\ \hline .63 \end{array}$$

Final Answer:

$$\begin{array}{r} .21 \\ \times 3 \\ \hline .63 \end{array}$$

Strategies for Multiplying Decimals by Decimals

$$0.4 \times .6 = 0.24$$



Modeling with Hundredths Blocks:

1. Take your first decimal number (your first factor) and shade in that many squares of your hundredths block horizontally (side to side).
2. Take your second decimal number (your second factor) and shade in that many squares of your hundredths block vertically (up and down).
2. Count up the boxes that are overlapped by both shadings.
3. Write in proper decimal form.

Standard Multiplication Algorithm:

Step 1: Multiply as you would with whole numbers.

Step 2: Count how many digits you have after EVERY decimal point in the problem.

Step 3: Move the decimal point to the LEFT as many places as there are digits to the right of the decimal.

Step 1:

$$\begin{array}{r} .4 \\ \times .6 \\ \hline 24 \end{array}$$

Step 3:

$$\begin{array}{r} .4 \\ \times .6 \\ \hline 24 \end{array}$$

Step 2:

$$\begin{array}{r} .4 \leftarrow 1 \text{ place} \\ \times .6 \leftarrow 1 \text{ place} \\ \hline 24 \quad 2 \text{ places total} \end{array}$$

Final Answer:

$$\begin{array}{r} .4 \\ \times .6 \\ \hline .24 \end{array}$$