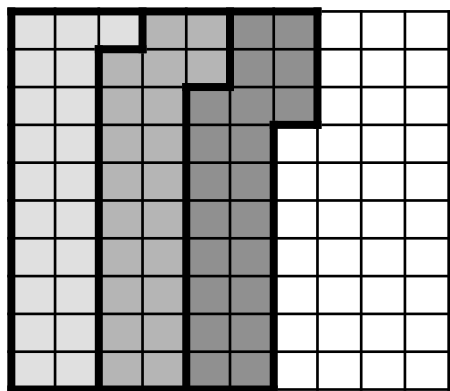


# Strategies for Multiplying Decimals by Whole Numbers

$$0.21 \times 3 = 0.63$$



0.21 0.21 0.21

## Modeling with Hundreds Blocks:

1. Take your decimal number (your first factor) and shade in that many squares of your hundreds 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:

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

Step 3:

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

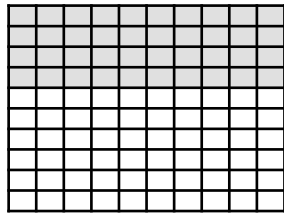
Final Answer:

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

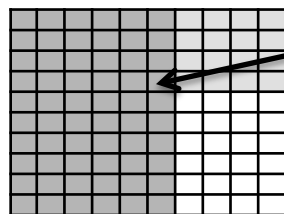
# Strategies for Multiplying Decimals by Decimals

$$0.4 \times .6 = 0.24$$

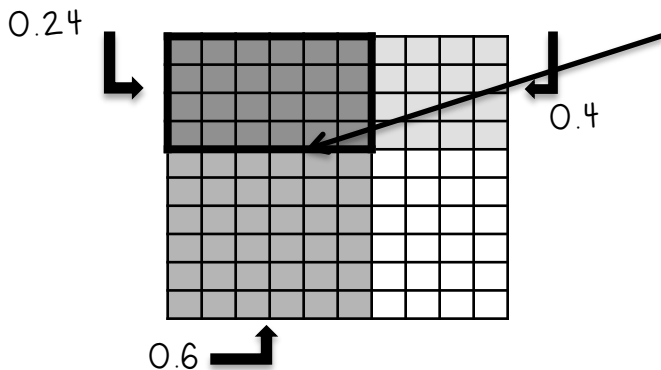
## Modeling with Hundreds Blocks:



1. Take your first decimal number (your first factor) and shade in that many squares of your hundreds block vertically (up and down).



2. Take your second decimal number (your second factor) and shade in that many squares of your hundreds block in the opposite direction (side to side).



3. Count up the boxes that are overlapped by both shadings.

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

Step 1:

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

Step 3:

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

Step 2:

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

Final Answer:

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