

Multiplication - Columns

Learning Goal:

By the end of this lesson I should be able to MULTIPLY double and triple digit positive numbers together using a COLUMN MODEL, WITHOUT the use of a calculator (technology).

It is important to remember that **MULTIPLICATION** is a shortcut for repetitive addition.

When we are asked to multiply numbers together, the final result is called the **PRODUCT**.

Product -> Multiply -> "Times"
(similar meaning)

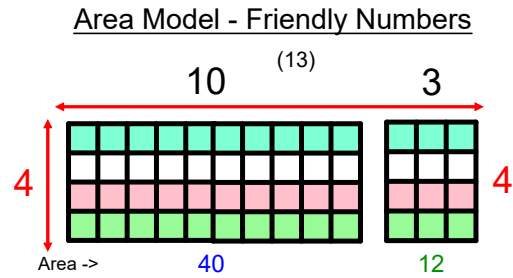
Warning:

The Column Model is a very efficient way to solve multiplication problems but it requires a strong grasp of multiplication concepts.

It is **STRONGLY** recommended that use of the Area Model be mastered before continuing to this model.

Find the product of 4×13

$$4 \times 13 = 52$$



Column Model One

$$\begin{array}{r} 13 \\ \times 4 \\ \hline \end{array}$$

Column Model Two

$$\begin{array}{r} 13 \\ \times 4 \\ \hline \end{array}$$

Be Careful! There are some tricky parts!

Find the product of 18×25

Area Model - Friendly Numbers

	20	+	5
0	200		50
+			
∞	160		40

Column Model One

$$\begin{array}{r} 25 \\ \times 18 \\ \hline \end{array}$$

Column Model Two

$$\begin{array}{r} 25 \\ \times 18 \\ \hline \end{array}$$

Be Careful! There are some tricky parts!

Find the product of 28×85

Area Model - Friendly Numbers

	80	+	5
20	1600		100
+			
8	640		40

Column Model One

$$\begin{array}{r} 85 \\ \times 28 \\ \hline \end{array}$$

Column Model Two

$$\begin{array}{r} 85 \\ \times 28 \\ \hline \end{array}$$

Spot the difference

$$\begin{array}{r} 24 \\ + 16 \\ \hline \end{array}$$

$$\begin{array}{r} 24 \\ - 16 \\ \hline \end{array}$$

$$\begin{array}{r} 24 \\ \times 16 \\ \hline \end{array}$$

The OPERATION (add, subtract, multiply) makes a HUGE difference on the answer.

Find the PRODUCT for the following using the Column Model.

(a) $(9)(24)$

$$\begin{array}{r} 24 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 15 \\ \times 12 \\ \hline \end{array}$$

$$\begin{array}{r} 36 \\ \times 24 \\ \hline \end{array}$$

(b) $(12)(15)$

(c) $(24)(36)$

Task 2.6