



# Essential Math II

**Lesson Date:** Tuesday April, 7

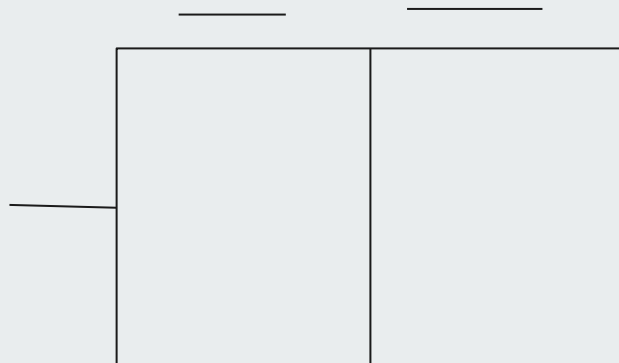
**Lesson:** Complex Area Models

**Target:** Students will be able to expand on prior knowledge to draw and create multi-step area models



# Bellwork

$12 \times 4 = \underline{\hspace{2cm}}$





# Getting Started

1. The concepts remain the same as the lesson before
2. Break your numbers down into hundreds, tens and ones places

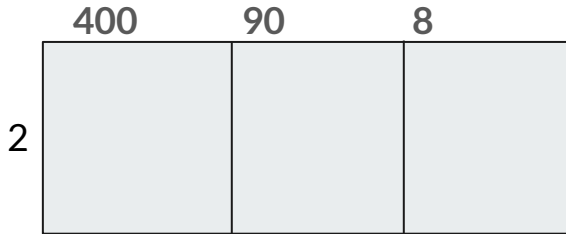
For example 435

Would be broken down into the following: 400 for the hundreds place, 30 for the tens place and 5 for the ones place so now we have 400, 30 and 5



# Getting Started

3. Now if we have  $2 \times 498$  the area model will look like this





## Getting Started

4. The same rules still apply as you would multiply 2 and 400, 2 and 90 and 2 and 8

	400	90	8
2	800	180	16

5. Add the contents of your area model:  $800 + 180 + 16$

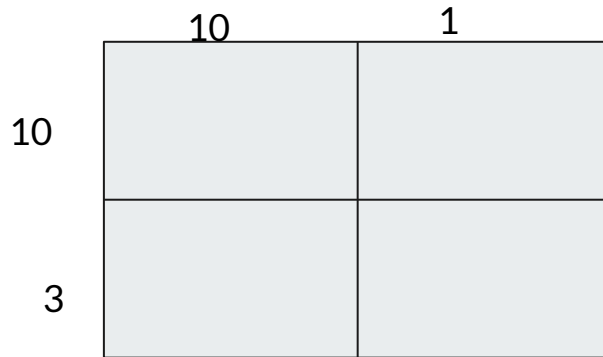
Answer:  $2 \times 498 = 996$



# Continuing

5. The same rules still apply even if there are multiple layers on both sides

Example:  $11 \times 13$





# Continuing

6.

Example:  $11 \times 13$

$$10 \times 3 = 30$$

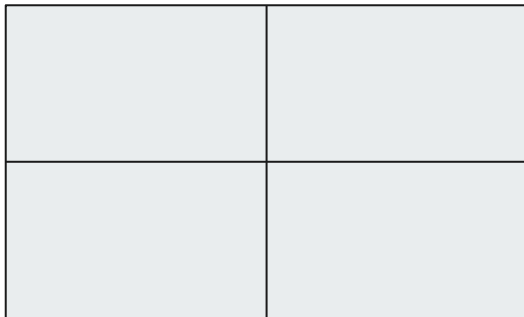
	$10 \times 10 = 100$	$10 \times 1 = 10$	
	10	1	
10	100	10	
3	30	3	$3 \times 1 = 3$

Answer:  $100 + 10 + 30 + 3 = 143$



**Practice:** Answer the following 4 questions on a piece of paper.  
For each problem draw an area model then solve

$45 \times 21 = \underline{\hspace{2cm}}$



$2 \times 842 = \underline{\hspace{2cm}}$







# Practice

$152 \times 48 = \underline{\hspace{2cm}}$

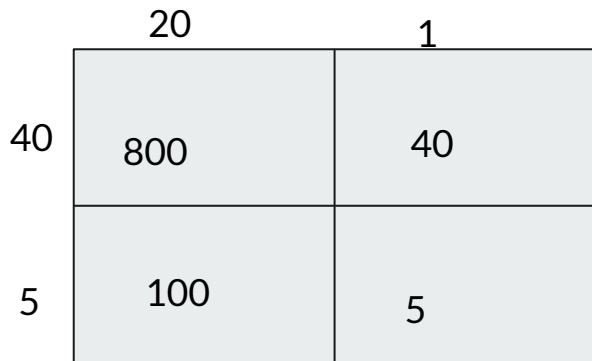

$165 \times 15 = \underline{\hspace{2cm}}$


## Answer Key

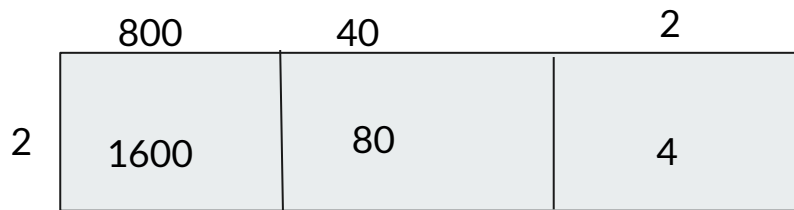
**Practice:** Answer the following 4 questions on a piece of paper.

For each problem draw an area model then solve

$$45 \times 21 = \underline{\quad\quad} 945 \underline{\quad\quad\quad}$$



$$2 \times 842 = \underline{\quad\quad} 1684 \underline{\quad\quad\quad}$$



## Answer Key

### Practice

$$152 \times 48 = \underline{\quad 7296 \quad}$$

	100	50	2
40	4000	2000	80
8	800	400	16

$$165 \times 15 = \underline{\quad 2475 \quad}$$

	100	60	5
10	1000	600	50
5	500	300	25