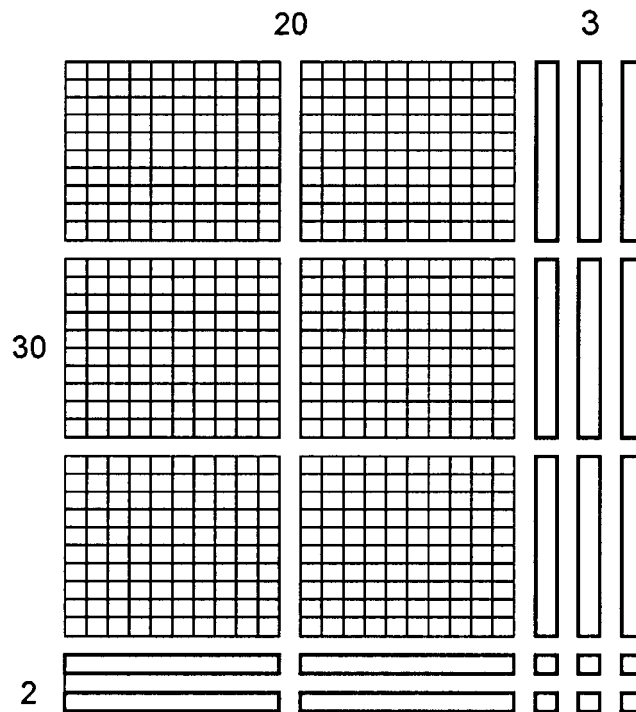


Array Model and Partial Product Multiplication

Students will have had previous experience with using arrays to model multiplication in earlier grades. Using *Base Ten Blocks*, model two-digit by two-digit multiplication arrays. It is not necessary to model larger numbers; we just want to make the connection to prior knowledge and use of arrays.



$$\begin{array}{r}
 20 \times 30 = 600 \\
 20 \times 2 = 40 \\
 30 \times 3 = 90 \\
 2 \times 3 = 6 \\
 \hline
 736
 \end{array}$$

Partial Product and Lattice Multiplication

Partial Product can also be set up in a grid format, which helps students be sure they have multiplied all of the combinations.

435 x 26				
x	400	30	5	
20	8,000	600	100	= 8,700
6	2,400	180	30	= 2,610

$$\begin{array}{r}
 8,700 \\
 + 2,610 \\
 \hline
 11,310
 \end{array}$$

This is the same problem using the lattice method to solve the equation. The problem is broken down into one fact at a time, which can make it less daunting for some students. You fill in the lattice one square at a time placing your tens in the top half, ones in the bottom. Once the lattice is filled in, add the numbers **on the diagonal** starting with the lower right corner. If you have a number greater than 9 “carry” your ten(s) over into the next column.

4	3	5	x
0	0	1	
8	6	0	2
2	1	3	
4	8	0	6

4	3	5	x
0	0	1	
8	6	0	2
2	1	3	
4	8	0	6
1	1		
1	4		
3	1	0	

$$435 \times 26 = 11,310$$