

Grades 3-5: Lattice Method of Multiplication

- The lattice method is a handy visual way to do multiplication using a rectangle with smaller rectangles and triangles inside of it.
- The steps are very similar to the ones we use when multiplying using the vertical algorithm, but you can do all your multiplication in one step and then all your addition in a second step.

As an example, let's use this method to solve 53 x 38.

- ⇒ First, let's set up our rectangle to show that we are multiplying two two-digit numbers. We make each side two units long to reflect this fact. We write one number along the top and the other along the right side.
- \Rightarrow Let's also slice each section in half with a diagonal, making triangles.



- Now that we have our lattice structure set up, we can **start multiplying**. Let's begin by multiplying 3 x 3. We are going to fill the highlighted section in with our answer.
- Because the answer is 9, we place a 0 in the top triangle (to show 0 tens) and 9 in the bottom triangle (to show 9 ones). This is what our lattice looks like after this step:



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- We keep multiplying until every triangle in our lattice has a number in it. Remember that in each section, the bottom triangle represents the value in the ones place and the top triangle represents the value in the tens place.
- Here is our completed lattice.



- All of our multiplication work is done!
- We are ready to start adding. We add the blue numbers along the diagonals, starting from the triangle in the bottom right corner. This corner is our ones place, and as we move to the next diagonal to the left, it will be our tens place (and so on).
- The arrows below show the direction we move as we add, and smaller numbers in light blue are what we carry to the next place. For example, because 9 + 2= 11, we need to carry a 1 from the tens to the hundreds place.
- Our final answer is along the bottom and left side in green. 53 x 38 = 2,014



For More on This Topic: https://www.khanacademy.org/math/arithmetic-home/multiply-divide#place-value-area-models%20lattice-multiplication