



Multiplication is the calculation we use to add the same number one or more times. The result of a multiplication is called a **product**.

That's me!



We use the **times** symbol for multiplication: **x**

Some products can be calculated mentally, but with bigger numbers it is usually better to use a written method. When we multiply **2 two-digit numbers** together, we can use an **area model**.

Method

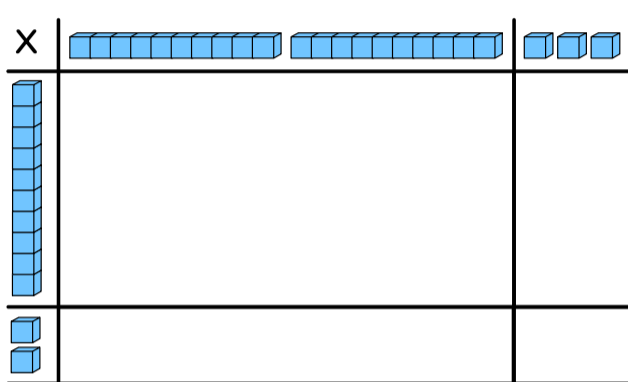
In an **area model**, we start by partitioning the numbers that we are multiplying. We then place these in the rows and columns of a table.

1 Let's use the example of **12 x 23**.

We split 12 into **1 ten** and **2 ones**. These will be the **rows** of our model.

We split 23 into **2 tens** and **3 ones**. These will be the **columns** of our model.

2 We can represent our area model pictorially or numerically!



x	20	3
10		
2		

3 We now need to multiply each of our 'parts' together.

Let's start with the top-left box of our model. We need to **multiply 10 x 20**.

$$10 \times 20 = 200$$

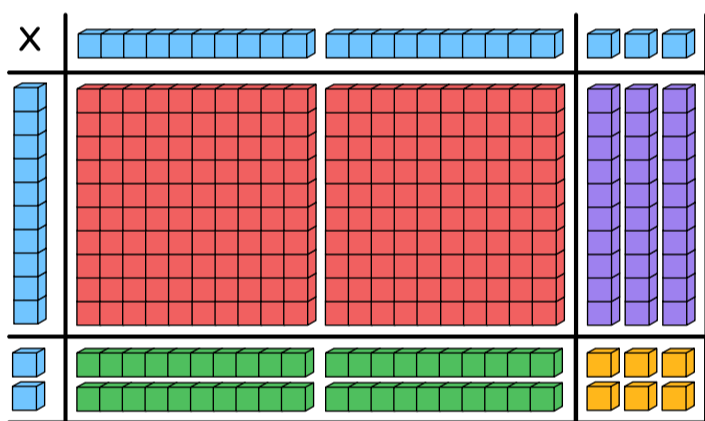
x	20	3
10	200	
2		

4 Now let's **fill in** the rest of our area model!

$$10 \times 3 = 30$$

$$2 \times 20 = 40$$

$$2 \times 3 = 6$$



x	20	3
10	200	30
2	40	6

5 Finally, we add these four numbers together to find the result of the multiplication!

$$200 + 30 + 40 + 6 = 276$$

The product of 12 and 23 is **276**!

Example Question

Calculate **27 x 42**. Fill in the missing numbers in the area model below to help you.

x	40	2
20		
7		

A 1,124

B 1,134

C 1,184

D 1,260

E 1,280

1 Let's **fill** the area model with the four missing products.

$$20 \times 40 = 800$$

$$20 \times 2 = 40$$

$$7 \times 40 = 280$$

$$7 \times 2 = 14$$

x	40	2
20	800	40
7	280	14

2 Now we just **add** these four numbers to find the solution!

$$800 + 40 + 280 + 14 = 1,134$$

Using the area model, we find that **27 x 42 = 1,134**. Answer **B** is correct!