Long Multiplication

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 often better to use a written method. When the numbers have **2 digits or more**, we use **long multiplication**.

Method

1 To start, we write the numbers in the correct place value columns, with the bigger number on top.

Here is an example with **234 x 32**.

Th	H	T	O
	2	3	4
x		3	2

2 We multiply **the top number** by **the ones** of the bottom number.

234 x 2 = **468**

We write this result in the first row under the line.

Th	H	T	O
	2	3	4
x		3	2
	4	**6**	**8**

3 Then we multiply the top number by **the tens** of the bottom number.

234 x 30 is harder to calculate. Let's partition 234 to make this easier.

200x30 = 6000	30x30 = 900	4x30 = 120

6,000 + 900 + 120 = **7,020**

Th	H	T	O
	2	3	4
x		3	2
	4	6	8
7	**0**	**2**	**0**

4 Finally, we need to **add** together the answers to our previous calculations!

We use column addition.

468 + 7,020 = **7,488**

Th	H	T	O
	2	3	4
x		3	2
	4	6	8
+ 7	0	2	0
7	**4**	**8**	**8**

The product of 234 and 32 is **7,488**!

Example Question

Over the past 18 months, a bakery has sold an average of 1,126 pastries every month.

How many pastries were sold in total over that time?

A	10,124	B	10,134	C	20,268	D	20,134

1 To solve this problem, we need to **multiply 1,126 by 18**. Let's use long multiplication.

2 We multiply the **top number** by the **ones** of the bottom number.

We can use short multiplication to calculate this.

1,126 x 8 = **9,008**

We write 9,008 in the first row under the line.

3 Now we multiply the **top number** with the **tens**.

1,126 x 10 = **11,260**

We write 11,260 in the next row.

Th	H	T	O
	1	1	2	6
x			1	8
	9	0	0	8
+ 1	1	2	6	0
2	**0**	**2**	**6**	**8**

4 Finally, we **add** these two numbers together.

9,008 + 11,260 = **20,268**

In total, **20,268 pastries** were sold in that time. Answer **C** is correct!