

Short Multiplication

Formal Multiplication of Three-Digit Numbers
and Four-Digit Numbers by One-Digit Numbers



Expanded Short Multiplication

Complete the following calculation:

multiplicand

$$543 \times 4$$

multiplier

Go onto the next slide to see the multiplication process for this calculation.

1. Multiply the number in the units column by the multiplier.

Th	H	T	U	
	5	4	3	
		\times	4	(4 \times 3)
<hr/>				
		1	2	

2. Multiply the number in the tens column by the multiplier.

Th	H	T	U	
	5	4	3	
		×	4	
<hr/>				
		1	2	(4 × 3)
1	6	0		(4 × 40)
			↑	

Don't forget to write in the zero here.
People often forget that the answer is a multiple of ten!

3. Multiply the number in the hundreds column by the multiplier.

Remember to take into account the tens and units column.
There are two zeros here holding place with the 5 to make it 500.

Th	H	T	U	
	5	4	3	
		×	4	
<hr/>				
		1	2	(4 × 3)
	1	6	0	(4 × 40)
2	0	0	0	(4 × 500)

4. Using the column addition method, combine the three separate answers.

Th	H	T	U
	5	4	3
		×	4
<hr/>			
		1	2
			(4 × 3)
	1	6	0
			(4 × 40)
2	0	0	0
			(4 × 500)
<hr/>			
2	1	7	2

Quick Check 1. If your answer doesn't look right, round the multiplicand to the nearest hundred and multiply that. If your answer is way off, you know you need to go through it again.
e.g. $500 \times 4 = 2000$

Quick Check 2. Sometimes your calculations will all be right, but you just haven't multiplied all the numbers. An easy way to check how many rows of numbers you should have in your answers is by multiplying the number of digits in the multiplicand by the multiplier. In this case, 3×1 .

Recap:

1. Multiply the units.
2. Multiply the tens.
3. Multiply the hundreds.
4. Add together the three separate answers.

Th	H	T	U	
	5	4	3	
		×	4	
<hr/>				
		1	2	(4×3)
	1	6	0	(4×40)
2	0	0	0	(4×500)
<hr/>				
2	1	7	2	

Compact Short Multiplication

Complete the following calculation:

multiplicand

$$487 \times 9$$

multiplier

Go onto the next slide to see the multiplication process for this calculation.

1. Multiply the number in the units column by the multiplier and carry the tens over to the tens column.

Th	H	T	U
	4	8	7
		×	9
<hr/>			
			3
		6	

2. Multiply the number in the tens column by the multiplier and carry over the hundreds to the hundreds column. Remember to add on the tens that were carried over.

Th	H	T	U
	4	8	7
		×	9
<hr/>			
		8	3
	7	6	

3. Multiply the number in the hundreds column by the multiplier and carry the thousands over to the thousands column. Remember to add on the hundreds that were carried over.

Th	H	T	U
	4	8	7
		×	9
<hr/>			
4	3	8	3
	7	6	

Now try these multiplication problems using short multiplication:

1. 453×4

6. 645×6

2. 814×5

7. 8044×4

3. 185×7

8. 2232×9

4. 203×6

9. 1573×6

5. 911×3

10. 4307×3



Core Task

1.

		5	6
×			4
	2	2	4
		2	

1. First set your calculation out correctly with one number in each square. Use a ruler to draw the lines.
2. Multiply the ones digit by 4. ($6 \times 4 = 24$)
3. Write the 2 tens in the tens column under the line. You need to carry this over to the tens column because it represents 20.
4. Now calculate the tens. Multiply 5 by 4. ($5 \times 4 = 20$)
5. Don't forget to add on the 2 tens that you carried. ($20 + 2 = 22$)

Now try these:

1. 49×3

2. 8×75

3. 3×55

4. 91×3

5. The product of 8 and 83

6. 64 multiplied by 4



Stretch
task

Multiplying 3-Digit Numbers by 1-Digit Numbers

$$\begin{array}{r} 725 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 973 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 344 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 226 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 575 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 897 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 919 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 843 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 427 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 784 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 148 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 991 \\ \times 4 \\ \hline \end{array}$$



Challenge
task



$$\begin{array}{r} 1. \quad _06 \\ \times \quad _2 \\ \hline 412 \end{array}$$

$$\begin{array}{r} 2. \quad 2_0 \\ \times \quad _4 \\ \hline 1040 \end{array}$$

$$\begin{array}{r} 3. \quad _95 \\ \times \quad _4 \\ \hline 1180 \end{array}$$

$$\begin{array}{r} 4. \quad 20_ \\ \times \quad _4 \\ \hline 836 \end{array}$$

$$\begin{array}{r} 5. \quad 35_ \\ \times \quad _4 \\ \hline 1428 \end{array}$$

$$\begin{array}{r} 6. \quad 4_2 \\ \times \quad _4 \\ \hline 1928 \end{array}$$

$$\begin{array}{r} 7. \quad _59 \\ \times \quad _3 \\ \hline 477 \end{array}$$

$$\begin{array}{r} 8. \quad 55_ \\ \times \quad _2 \\ \hline 1108 \end{array}$$

$$\begin{array}{r} 9. \quad 5_4 \\ \times \quad _4 \\ \hline 2256 \end{array}$$

$$\begin{array}{r} 10. \quad _34 \\ \times \quad _4 \\ \hline 1736 \end{array}$$