# **Short Multiplication**

Multiplying by a One-Digit Number

					45	× 6	
	Write the numbers above each other in the correct columns.	×	4	5 6	-	3	Multiply the tens digit in the two-digit number by the one- digit number and add any regrouped tens.
					-		4 tens × 6 = 24 tens + 3 tens = 27 tens = 2 hundreds and 7 tens
							Write the answer in the provided section.
1	Multiply the ones digit in the two-digit number by the one-		3	E			
(	digit number.		4	5		4	45 × 6 = 270
	5 ones × 6 ones = 30 = 3 tens	×		6			45 ~ 0 - 270
(	and 0 ones			0			
(	Write O in the answer section and regroup the 3 tens by writing 3 above the tens						

column.



## 

# Long Multiplication

Multiplying by a Two-Digit Number

154 × 26

1	Write the numbers above each other in the correct columns.		154			<b>3</b> Next, multiply the tens in the t digit numbers by the ones digit
		×		2	6	the two-digit number and add regrouped tens.
						5 tens × 6 = 30 tens + 2 tens = tens = 3 hundreds and 2 tens

Write 2 in the answer section and regroup the 3 hundreds by writing 3 above the hundreds column.

- 4 Finally, multiply the hundreds in the three-digit numbers by the ones digits in the two-digit number and add any regrouped hundreds.
  - 1 hundred × 6 = 6 hundreds + 3 hundreds = 9 hundreds

Write 9 in the answer section.



First, multiply the ones in the three-digit number by the ones in			2	
the two-digit number.		1	5	4
4 ones × 6 ones = 24 ones = 2 tens and 4 ones	×		2	6
				4
Write 4 in the answer section and				

regroup the 2 tens by writing 2 above the tens column.

2

#### three-3 2 its in l any 5 4 2 6 × 32 2 4 3 2 5 4 2 6 X 9 2 4

## **Long Multiplication**

Multiplying by a Two-Digit Number

5	

Cross out any previous regroupings.

In the next section, multiply the ones in the three-digit number by the tens in the two-digit number

Because the calculation involves multiplying by 20, a zero needs to be placed in the right-hand column as a place holder.

 $4 \text{ ones} \times 2 \text{ tens} = 8 \text{ tens}$ 

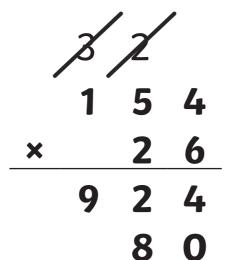
Write 8 in the answer section.

6

Multiply the tens in the three-digit number by the tens in the two-digit number and add any regrouped hundreds.

5 tens × 2 tens = 1 thousand

Write 0 in the answer section and regroup the 1 thousands by writing a 1 above the thousands column.



Multiply the hundreds in the three-digit number by the tens in the two-digit number and add any regrouped thousands.

 $1 \text{ hundred} \times 2 \text{ tens} = 2$ thousands + 1 thousand = 3thousands

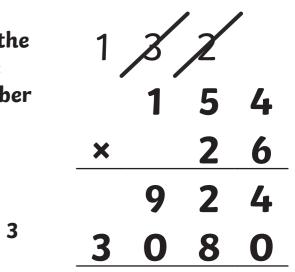
Write 3 in the answer section.

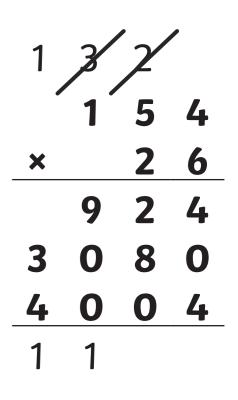
Combine the totals using regrouping if required.

X

154 × 26 = 4004



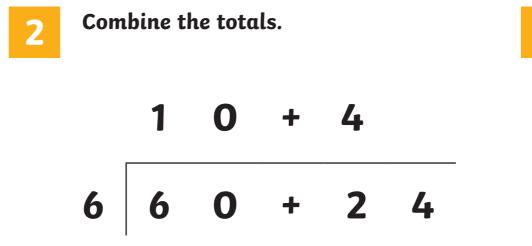




## **Short Division**

Dividing by a One-Digit Number

## 84 ÷ 6



Partition 84 into tens and ones.

Work out how many 6s divide into 80 so that the answer is a multiple of 10.

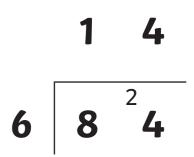
In this case, the highest multiple of 10 divisible by 6 is 60.

Partition 84 into 60 and 24 then divide each number by 6.

Combine the totals.



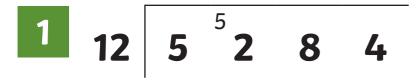
This can be shortened to:



## **Short Division**

Dividing by a Two-Digit Number

5284 ÷ 12



First we divide 5 (thousands) by 12. This gives a result of 0 with a remainder of 5. The remainder 5 (thousands) is exchanged for 50 hundreds and placed into the hundreds column. This is shown by a small 5 in front of the existing 2 hundreds to make 52 hundreds.

### 4 \*8 12 5

Next, we divide 52 (hundreds) by 12. This gives a result of 4 (hundreds) remainder 4. The remainder 4 (hundreds) is exchanged for 40 tens and placed into the tens column. This is shown by a small 4 in front of the existing 8 tens to make 48 tens. The 4 is written in the hundreds position of the answer above the line.

4



3 4 5 5 12 2

> Next we divide 48 (tens) by 12. This gives a result of 4. The 4 is written in the tens position of the answer above the line.

4

12 5 2

Next, we divide 4 (ones) by 12. This cannot be done, so there are four remaining. A zero is placed in the ones answer section as well as remainder 4.

4 4 8 4



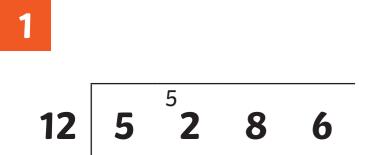
#### 8 4

### 5284 ÷ 12 = 440 r4

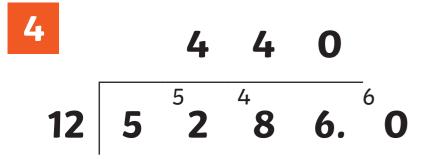
## **Short Division**

Dividing by a Two-Digit Number Resulting in a Decimal Answer

5286 ÷ 12



First, divide 5 (thousands) by 12. This gives a result of 0 with a remainder of 5. The remainder 5 (thousands) is exchanged for 50 hundreds and placed into the hundreds column. This is shown by a small 5 in front of the existing 2 hundreds to make 52 hundreds.

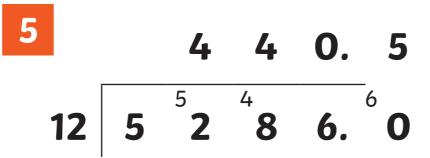


Next, divide 6 (ones) by 12. This cannot be done. This gives a result of 0 with a remainder of 6. Extend the number being divided to show the tenths place. The remainder 6 (ones) can now be exchanged for 60 tenths and placed into the tenths column. This is shown by a small 6 in front of 0 tenths to make 60 tenths. Remember to place the decimal point in your answer section.

4 12 5 6

2

Next, divide 52 (hundreds) by 12. This gives a result of 4 (hundreds) remainder 4. The remainder 4 (hundreds) is exchanged for 40 tens and placed into the tens column. This is shown by a small 4 in front of the existing 8 tens to make 48 tens. The 4 is written in the hundreds position of the answer above the line.



Next, divide 60 (tenths) by 12. This gives a result of 5. The 5 is written in the tenths position of the answer above the line.



3

12 5

6	

#### 4 4 5 4 8 6

Next, divide 48 (tens) by 12. This gives a result of 4. The 4 is written in the tens position of the answer above the line.

### $5286 \div 12 = 440.5$

## **Long Division**

#### Dividing by a Two-Digit Number Resulting in a Decimal Answer

## 591 ÷ 12

answer section

9

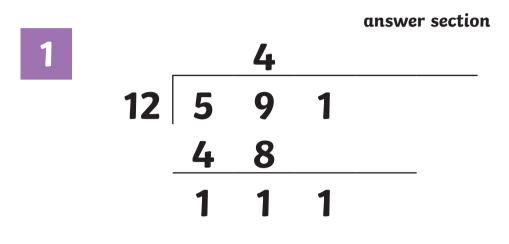
1

1

8

3

Work out the answer to two decimal places.



4

9

8

1

0

12

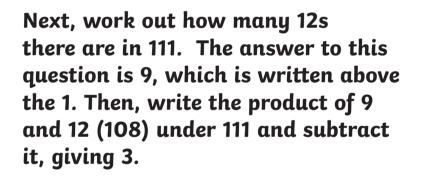
5

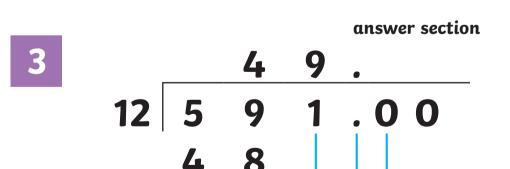
4

1

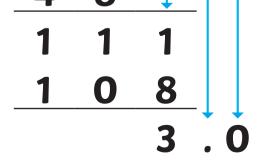
1

First, work out how many 12s there are in 59. The answer to this question is 4, which is written above the 9. We then write the product of 4 and 12 (48) under 59 and subtract giving 11. The 1 is then brought down and written next to 11 to make 111.





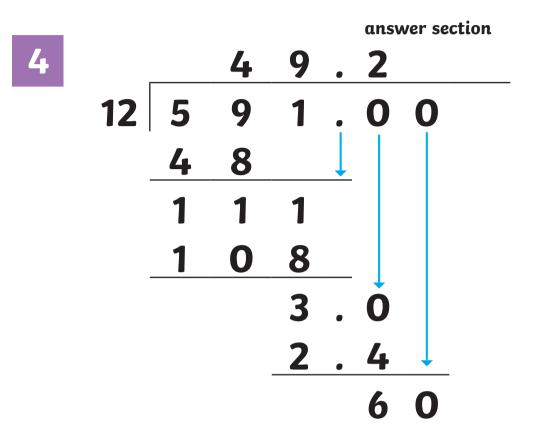
Extend 591 into decimals to continue the process of long division. The 0 in the tenths place is then brought down and written next to 3 to make 30.



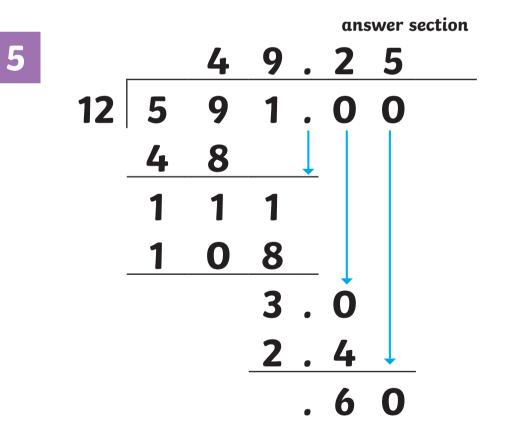


## **Long Division**

Dividing by a Two-Digit Number Resulting in a Decimal Answer



Next, work out how many 12s there are in 30. The answer to this question is 2, which is written above the 0 in the tenths place. Then, write the product of 2 and 12 (24) under 30 and subtract it, giving 6. The 0 is then brought down and written next to 6 to make 60.



Next, find out how many 12s there are in 60. The answer to this question is 5, which is written above the 0 in the hundredths place. Then, write the product of 5 and 12 (60) under 60 and subtract it, giving zero.

# . <u>6 0</u> <u>0</u> 591 ÷ 12 = 49.25

