

Multiplying decimals by a 2-digit number using the expanded written method



- Multiply a decimal by a 2-digit number using the expanded written method of long multiplication
- Estimate and check the answer to a calculation

Challenge 1

What number is each clue describing?

- a It is six times larger than 0.09.
- b It is 0.6 more than triple 0.05.
- c It is 100 times larger than 0.07 multiplied by 6.
- d It is one quarter of 100.
- e It is double 3.9 and double again.
- f It is 10 less than when you multiply 50 by 0.5.
- g It is 8 times more than 8.9.
- h It is 10 times smaller than 0.5.
- i It is half of 0.32 and half again.
- j It is the sum of 7 multiplied by 0.07 and 0.25 multiplied by 4.
- k It is the same as 2.22 multiplied by 4 add 3 multiplied by 3.33.
- l It is 5 times larger than 2.3 multiplied by 2.

Challenge 2

Find the answer to these calculations using the expanded written method of long multiplication. Estimate the answer first. Convert the decimals to whole numbers, carry out the calculation, then convert the answer back to a decimal.

- a 2.38×25
- b 4.55×46
- c 6.84×31
- d 5.78×56
- e 6.74×28
- f 8.76×15
- g 3.45×19
- h 2.78×35
- i 6.38×42
- j 6.74×27
- k 7.35×18
- l 3.98×51
- m 8.06×37
- n 5.40×75
- o 9.38×19

Example

$$5.37 \times 33 \rightarrow 5 \times 30 = 150$$

		5	3	7	
	x		3	3	
		1	6 ¹	1 ²	1 (537 × 3)
		1	6 ¹	1 ²	1 0 (537 × 30)
		1	7	7	2 1











5.37 × 33 is equivalent to 537 × 33 ÷ 100.

This equals 17 721 ÷ 100, which is 177.21.

$$5.37 \times 33 = 177.21$$

Challenge 3

1 Work out the total cost of each purchase. Write your answer in pounds (£).

- a 13 boxes of eggs costing £3.59 each. 
- b 29 bottles of juice costing £2.89 each. 
- c 46 hamburgers costing £5.38 each. 
- d 38 pizzas costing £6.29 each. 
- e 54 cupcakes costing £1.96 each. 
- f 25 bottles of olive oil costing £4.85 each. 
- g 17 loaves of bread costing £2.49 each. 
- h 94 milkshakes costing £3.26 each. 
- i 67 pencils costing £0.79 each. 
- j 78 chocolate bars costing £1.95 each. 

2 Work out the total cost of each purchase. Think carefully about how you are going to work out the answer: using a mental or a written method. Write your answer in pounds (£).

- a 18 books costing £8.55 each. 
- b 62 pies costing £5.90 each. 
- c 43 bags of popcorn costing £3.70 each. 
- d 39 hotdogs costing £4.80 each. 
- e 76 sandwiches costing £4.10 each. 
- f 56 cans of soup costing £1.76 each. 
- g 38 large cakes costing £9.39 each. 
- h 27 bags costing £7.39 each. 
- i 48 pens costing £2.89 each. 
- j 69 candles costing £3.67 each. 

