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

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

Challenge 1

1 Work out these calculations.

a	b	c	d
600 × 9	70 × 50	800 × 6	70 × 70
60 × 90	700 × 5	80 × 6	700 × 7
60 × 9	70 × 5	80 × 6	70 × 7
6 × 9	7 × 5	80 × 60	7 × 7
0·6 × 9	0·7 × 5	0·8 × 6	7 × 0·7
0·06 × 9	0·07 × 5	0·08 × 6	7 × 0·07

e	f	g
30 × 90	110 × 40	1200 × 7
300 × 9	1100 × 4	120 × 70
30 × 9	110 × 4	120 × 7
3 × 9	11 × 4	12 × 7
0·3 × 9	11 × 0·4	12 × 0·7
0·03 × 9	11 × 0·04	0·12 × 7

2 Write five multiplication calculations that give a total of each of the numbers below.

9·6   1·5   3·2   0·36   64   2·4
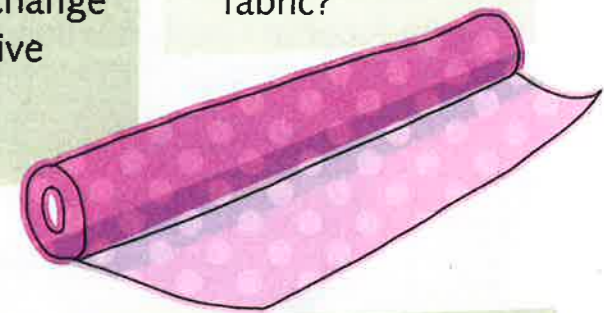
Challenge 2

Find the answer to these calculations using the formal 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 6·34 × 18   b 4·73 × 34
c 7·93 × 29   d 2·78 × 75
e 7·54 × 26   f 8·94 × 63
g 7·25 × 14   h 8·29 × 25
i 9·86 × 37   j 6·42 × 58

Challenge 3 Find the answers to these problems.

a The sewing and fabric shop sells reels of blue and red ribbon each with 90 metres of ribbon on them. The blue ribbon is cut into pieces 2·25 metres in length. The red ribbon is cut into lengths of 1·25 metres. How many more pieces of red ribbon will there be?

b Bags of 10 buttons cost £6.90. How much would it cost to buy 55 buttons? How much change would I receive from £50?

c A length of fabric measures 5·67 m by 38 m. What is the area of the fabric?

d Liz bought three bags of sequins and a reel of cotton. The total cost was £25.40. The reel of cotton cost £3.56. How much did each bag of sequins cost?

e Ben bought 26 blue zips and 39 purple zips. He spent £247.39 altogether. Purple zips cost £4.01 each. How much does one blue zip cost?

f Jim has £100. He wants to buy 6 m of elastic at a cost of £3.54 per metre and 17·m of fabric at a cost of £6.29 per metre. How much more money does he need?

Example

2·46 × 38 → 2 × 40 = 80

	2	4	6
×		3	8
1	9	6	8
7	3	8	0
9	3	4	8

2·46 × 38 is equivalent to 246 × 38 ÷ 100.
This equals 9348 ÷ 100, which is 93·48.
2·46 × 38 = 93·48