

# Multiplication TO x TO using the expanded written method

Use the expanded written method of long multiplication to calculate TO x TO  
Estimate and check the answer to a calculation



For each question, multiply each of the numbers on the yellow leaves by the number on the green leaf at the top.

**a**

Green leaf:  $\times 9$

Yellow leaves: 8, 30, 6, 7, 40, 50

**b**

Green leaf:  $\times 7$

Yellow leaves: 20, 6, 70, 3, 90, 8

**c**

Green leaf:  $\times 6$

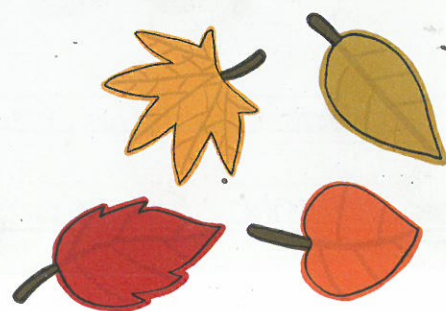
Yellow leaves: 30, 50, 8, 4, 70, 6

1 Approximate the answer to each calculation.

- |                  |                  |                  |
|------------------|------------------|------------------|
| a $46 \times 38$ | b $72 \times 39$ | c $58 \times 56$ |
| d $64 \times 83$ | e $67 \times 49$ | f $96 \times 26$ |
| g $88 \times 38$ | h $74 \times 68$ | i $56 \times 93$ |

Example

$$63 \times 38 \rightarrow 60 \times 40 = 2400$$



2 Use the expanded written method to work out the answers to the calculations in Question 1. Choose which method is easiest for you.

Example

Th	H	T	O
		6	3
$\times$		3	8
	5	0	4
1	8	9	0
2	3	9	4
1			

( $63 \times 8$ )  
( $63 \times 30$ )

Th	H	T	O
		6	3
$\times$		3	8
1	8	9	0
	5	0	4
2	3	9	4
1			

( $63 \times 30$ )  
( $63 \times 8$ )

Challenge 3

Ali tried to work out the answer to  $37 \times 24$  on his calculator but he found that the 7 key on the calculator was broken. He used these two methods to find his answer:

You will need:  
• calculator

$$\begin{aligned} 36 \times 24 &= 864 \\ \text{add } 1 \times 24 &= 24 \\ \text{so } 864 + 24 &= 888 \end{aligned}$$

$$\begin{aligned} 38 \times 24 &= 912 \\ \text{subtract } 1 \times 24 &= 24 \\ \text{so } 912 - 24 &= 888 \end{aligned}$$



The 7 key is still broken. Explore methods of finding the answer to the following calculations using other keys on the calculator.

Record your methods.

- |                    |                    |                    |
|--------------------|--------------------|--------------------|
| a $67 \times 58$   | b $45 \times 27$   | c $77 \times 38$   |
| d $73 \times 47$   | e $97 \times 57$   | f $37 \times 37$   |
| g $77 \times 77$   | h $397 \times 965$ | i $428 \times 768$ |
| j $647 \times 321$ | k $274 \times 83$  | l $175 \times 175$ |

