

How to multiply by using the grid method

An introduction to the method

- To do this, we need to partition (split up) each number into the correct place values:

$$37 \times 5 =$$

37 is partitioned into 30 and 7

- A correctly sized grid is drawn and the partitioned numbers are added to it:

x	30	7
5		

- Each part of the grid is completed by multiplying the numbers together:

x	30	7
5	$30 \times 5 =$ 150	$7 \times 5 =$ 35

- Now the answers are added together, taking care to record each number in its correct place value column:

$$\begin{array}{r} \text{H T O} \\ 150 \\ + 35 \\ \hline 185 \end{array}$$

$$37 \times 5 = 185$$

The grid method (multiplying a three-digit number by a one-digit number)

- Partition each number into the correct place values:

$$168 \times 6 =$$

168 is partitioned into 100, 60 and 8

- Add the partitioned numbers to a grid:

x	100	60	8
6			

- Complete the grid by multiplying the numbers together:

x	100	60	8
6	100×6 600	60×6 360	8×6 48

- Now add together the answers, taking care to record each number in its correct place value column:

$$\begin{array}{r}
 \text{Th.} \quad \text{H} \quad \text{T} \quad \text{O} \\
 \quad \quad 6 \quad 0 \quad 0 \\
 \quad \quad 3 \quad 6 \quad 0 \\
 + \quad \quad 4 \quad 8 \\
 \hline
 1 \quad 0 \quad 0 \quad 8 \\
 \hline
 \end{array}$$

$$168 \times 6 = 1,008$$

The grid method (multiplying a three-digit number by a two-digit number)

- Partition each number into the correct place values:

$$324 \times 14 =$$

324 is partitioned into 300, 20 and 4

14 is partitioned into 10 and 4

- Add the partitioned numbers to a grid:

x	300	20	4
10			
4			

- Complete the grid by multiplying the numbers together:

x	300	20	4
10	300×10 3000	20×10 200	4×10 40
4	300×4 1200	20×4 80	4×4 16

- Now add together the answers, taking care to record each number in its correct place value column:

$$\begin{array}{r}
 \begin{array}{cccc}
 \text{Th.} & \text{H} & \text{T} & \text{O} \\
 3 & 2 & 4 & 0 \\
 1 & 2 & 8 & 0 \\
 + & & & 16 \\
 \hline
 4 & 5 & 3 & 6 \\
 \hline
 & & & 1
 \end{array}
 \end{array}$$

$$324 \times 14 = 4,536$$