Language of Multiplication

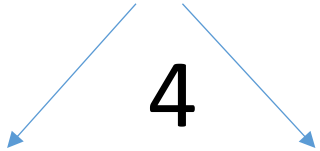
- Times
- Multiply
- Double
- Treble
- Product of
- Groups of
- Multiple
- Altogether

Mental Strategies - Partitioning

can help when we start to work with larger numbers

Partitioning means breaking numbers down into smaller parts.

$$24 \times 3 =$$



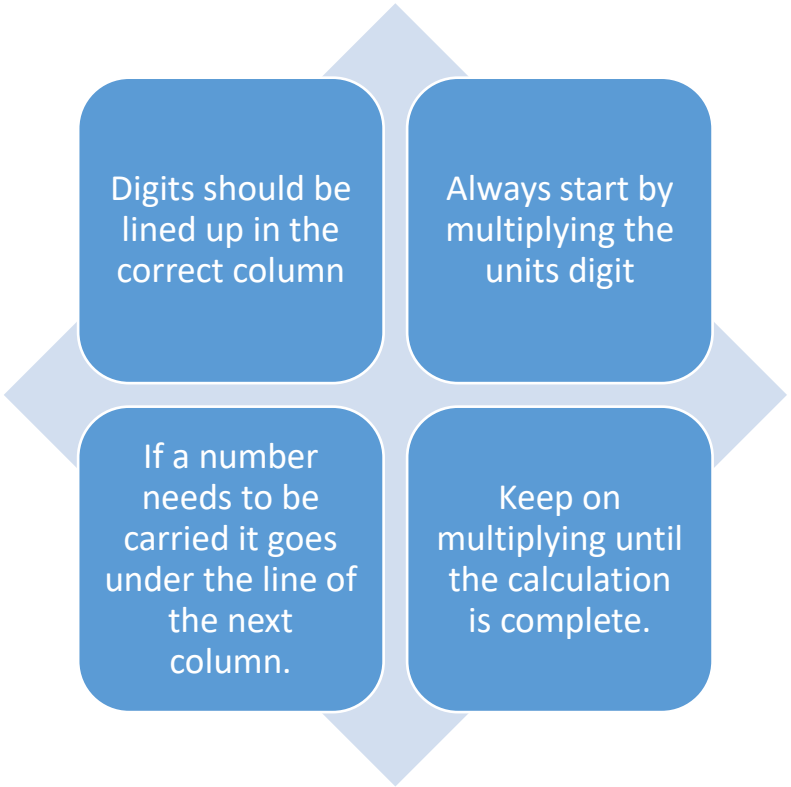
20 4

$20 \times 3 + 4 \times 3$

$60 + 12 = 72$

Written Multiplication Calculations

Multiplying by a single digit whole number

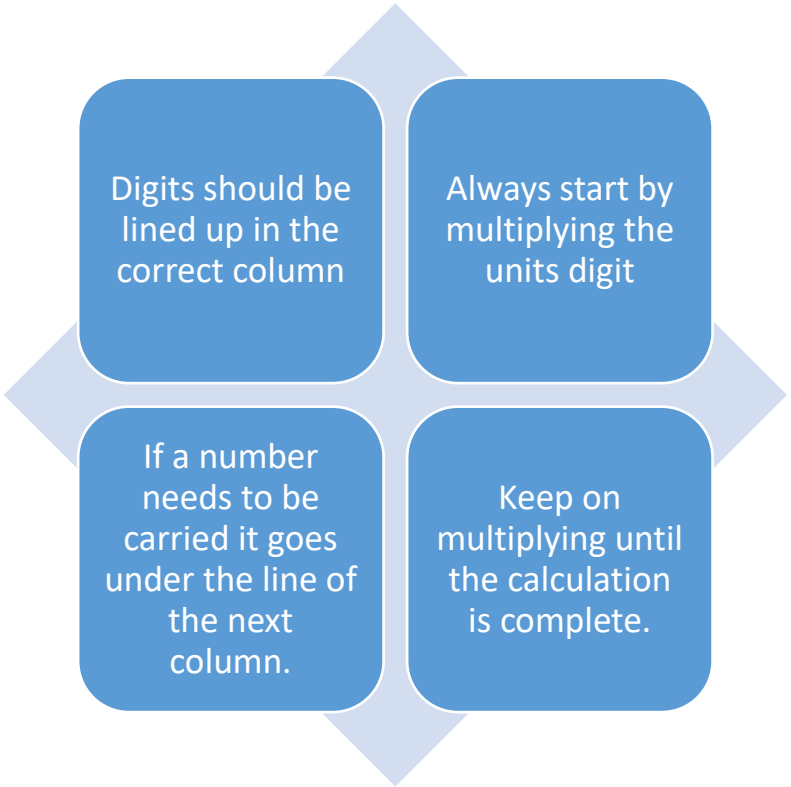


	T	U
	2	0
x		3
	6	0

	T	U
	2	5
x		3
	7	5
	1	

Written Multiplication Calculations

Multiplying by a 2 digit whole number



	T	U
	2	0
x	3	3

	T	U
	2	5
x	1	3

Long Multiplication

Firstly write the calculation correctly:

That means units over units and tens over tens. This makes the working out easier.

$$\begin{array}{r} 24 \\ \times 34 \\ \hline \end{array}$$

Then the first part is done as normal. Bottom Unit x Top unit. Bottom Unit x Top Tens.

$$\begin{array}{r} 24 \\ \times 34 \\ \hline 96 \end{array}$$

Then, because we are multiplying by ten we write a 0 under the units column. Then carry on as normal. Bottom Tens x Top Unit. Bottom Tens x Top Tens

$$\begin{array}{r} 24 \\ \times 34 \\ \hline 96 \\ 720 \end{array}$$

Then, underline the last piece of working you did.

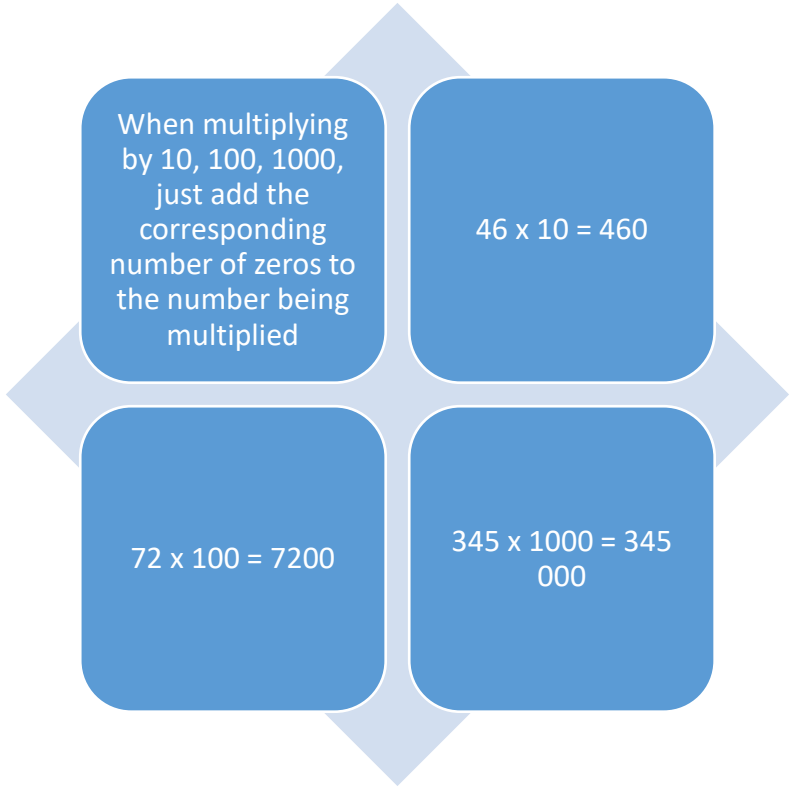
Then finally perform a simple addition of the two numbers between the lines.

$$\begin{array}{r} 24 \\ \times 34 \\ \hline 96 \\ 720 \\ \hline 826 \end{array}$$



Multiplying by 10, 100, 1000

Whole Numbers



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Multiplying by 10, 100, 1000

Decimal Numbers

When multiplying decimals by 10, 100, 1000, **the decimal point stays** and the digits move the corresponding number of places to the left.

Multiply by 10 – move 1 place to the left

6.25 x 10 = 62.5

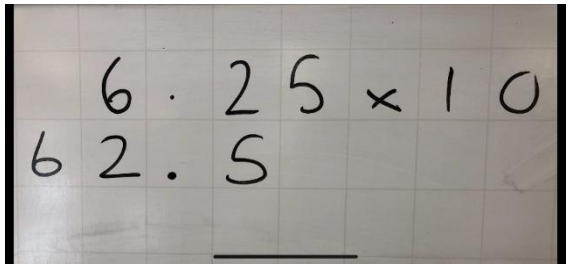
Multiply by 100 – move 2 place to the left

7.253 x 100 = 725.3

Multiply by 1000 – move 3 place to the left

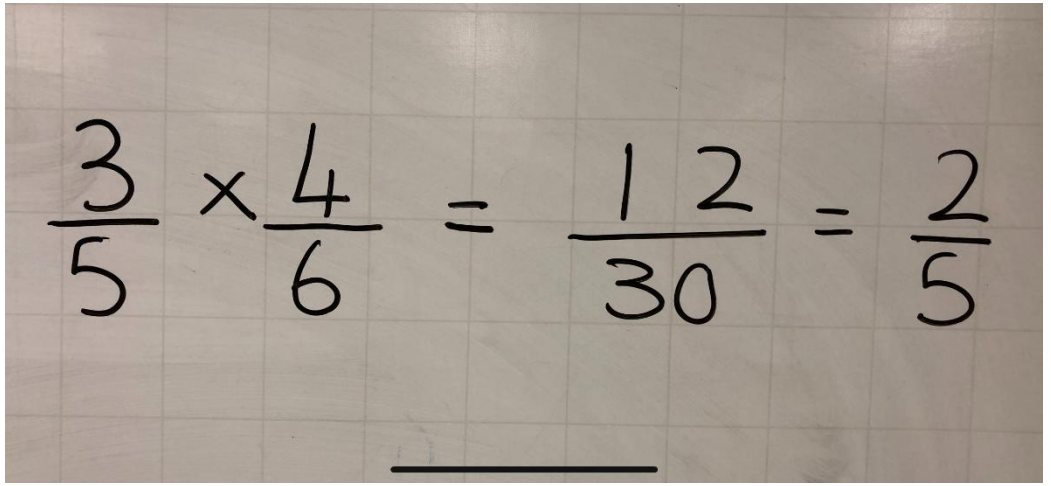
1.4556 x 1000 = 1455.6

Consider this layout for teaching

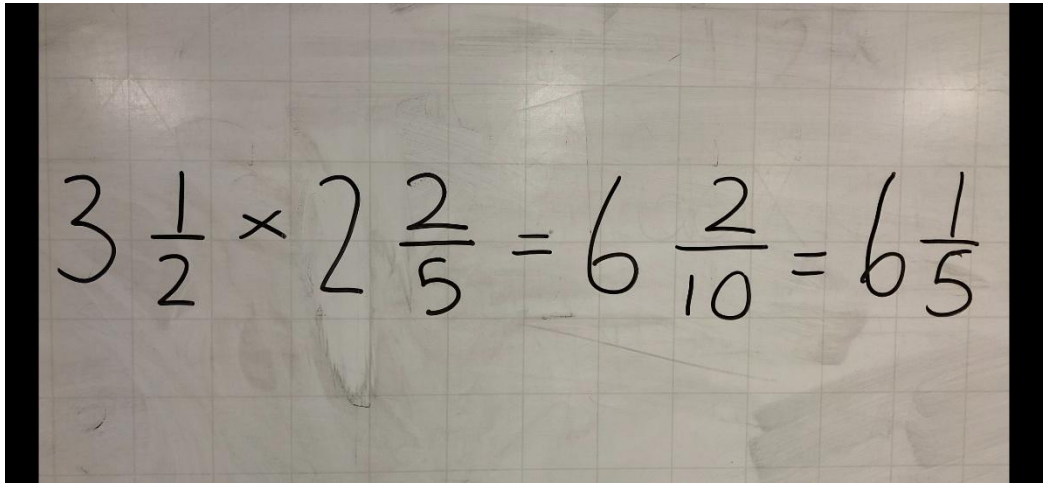


Multiplying Fractions

- When multiplying fractions, multiply the two top numbers (numerators) and multiply the two bottom numbers (denominators)
- Remember to simplify your answer where possible



- When multiplying a mixed fraction (whole number and fraction) multiply the whole numbers first and then repeat the steps above



Multiplying Negative Numbers



- When you multiply a negative number with a positive number you make a negative number

Example

$10 \times (-3) = -30$

Example

$-4 \times 6 = -24$

- When you multiply a negative number with a negative number you make a positive number

Example

$-6 \times (-5) = 30$

- Remember if you square a negative number you make a positive number

Example

$-7^2 = 49$