



# Maths Written Calculation Strategies

## Key Stage Two





# Addition



In Year 3 and Year 4 the column method is used to add the smallest part of the number first and the largest part of the number last.

$$\begin{array}{r} 625 \\ +48 \\ \hline 13 \end{array}$$

add the ones (or units) first

$$\begin{array}{r} 625 \\ +48 \\ \hline 13 \\ 60 \end{array}$$

add the tens by saying twenty add forty is sixty

$$\begin{array}{r} 625 \\ +48 \\ \hline 13 \\ 60 \\ 600 \end{array}$$

add the hundreds, six hundreds

$$\begin{array}{r} 625 \\ +48 \\ \hline 13 \\ 60 \\ \hline 600 \\ \hline 673 \end{array}$$

total the numbers - add mentally  $600 + 60 + 13$

By the end of Year 3 this method can then lead to a more compact method:

$$\begin{array}{r} 625 \\ +48 \\ \hline 1 \\ \hline 3 \end{array}$$

add the ones (or units), five add eight is thirteen one ten under the tens column and three in the ones column.

$$\begin{array}{r} 625 \\ +48 \\ \hline 1 \\ \hline 73 \end{array}$$

add the tens, twenty add forty is sixty plus ten underneath, seventy. Put the seventy in the tens column.

$$\begin{array}{r} 625 \\ +48 \\ \hline 1 \\ \hline 673 \end{array}$$

add the hundreds, six hundreds. Put the six hundreds in the hundreds column.

# Subtraction

In Year 3 onwards the method for subtraction becomes a more compact method using columns and place value.

$$874 - 523 =$$

	H	T	U
	8	7	4
-	5	2	3
	3	5	1

Start to subtract with the Units column moving along to the tens then the hundreds.

This method develops and uses 'exchanging' when necessary.

$$932 - 457 =$$

	H	T	U
	8	<del>9</del> 12	<del>3</del> 12
-	4	5	7
	4	7	5

Start to subtract with the Units column. Two cannot be subtracted from 7 so exchange from the next column. Cross out the tens column and reduce it by one. Carry your one into the units and complete the subtraction for the column. Move onto the tens column and borrow from the hundreds if necessary.





# Multiplication



In Year 3 and 4, setting out multiplication is as a vertical calculation which is an extension method for preparation for Key Stage Two.

$23 \times 7$

$$\begin{array}{r} 23 \\ \times 7 \\ \hline 21 \\ 140 \\ \hline \end{array}$$

multiply the ones

$20 \times 7$

multiply the tens saying twenty times 7

$3 \times 7$

$161$

total the columns





# Multiplication



From Year 4 onwards, children are asked to use a more compact method for multiplication:

$$23 \times 7$$

$$\begin{array}{r} 23 \\ \times 7 \\ \hline 1 \end{array}$$

seven times 3 is twenty one  
put the two tens in the tens column  
and the one in the ones column

$$\begin{array}{r} 23 \\ \times 7 \\ \hline 161 \end{array}$$

seven times twenty is one hundred and forty plus the two tens makes one hundred and sixty. Put the sixty in the tens column and the one hundred in the hundreds column.





$72 \times 38$

$$\begin{array}{r}
 72 \\
 \times 38 \\
 \hline
 576 \\
 2160 \\
 \hline
 2736
 \end{array}$$

$$\begin{array}{r}
 72 \\
 \times 38 \\
 \hline
 756 \\
 2160 \\
 \hline
 2736
 \end{array}$$

# Multiplication



$8 \times 2 = 16 \text{ and } 8 \times 70 = 560$



Put down a 0 in the ones column because we are now multiplying by ten.

$3 \times 2 = 6 \text{ and } 3 \times 7 = 21$

Then total the columns



# Division



From Year 3 onwards a method known as the bridge is used to divide by single digits.

$$\begin{array}{r} 72 \div 3 \\ \underline{24} \\ 3 \ ) \ 7 \ 12 \end{array}$$

$$72 \div 3 = 24$$

How many groups of 3 are in 7?

$$2 \times 3 = 6 \text{ remainder } 1$$

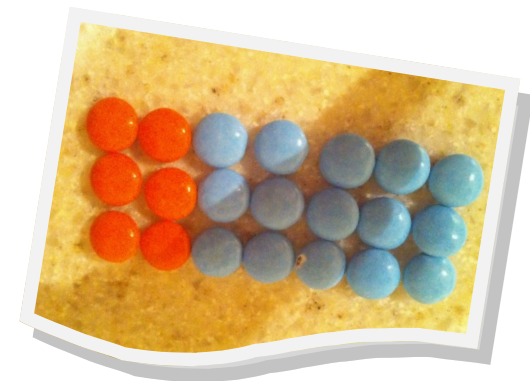
Move the remainder 1 across to make 12

How many groups of 3 in 12?

$$4 \times 3 = 12$$

Add the 4

The answer is 24





# Division



In Year 5 and 6, when dividing with decimals put the point in first and then follow the method.

$$12.6 \div 3$$

$$\begin{array}{r} 4.2 \\ \underline{3 \ ) 12.6} \end{array}$$

Put the decimal point in first

How many groups of 3 are in 12?

$$4 \times 3 = 12$$

Put the 4 above the 12

$$12.6 \div 3 = 4.2$$

How many groups of 3 in 6?

$$2 \times 3 = 6$$

Put the 2 above the 6.

The answer is 4.2

