

Year 5

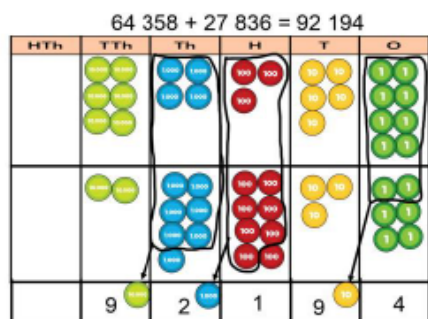
Addition

Working towards adding numbers with more than 4 digits.

Column method

Children continue to develop their knowledge of the column method, adding numbers with more than 4 digits.

Children start by recapping their understanding using the place value counters.



Once knowledge is secure, children move to using a formal written method.

$$64\ 358 + 27\ 836 = 91\ 194$$

	TTh	Th	H	T	O
	6	4	3	5	8
+	2	7	8	3	6
	9	2	1	9	4
	±	±		±	

Adding decimal numbers

Children begin to apply their knowledge of column addition to decimal numbers.

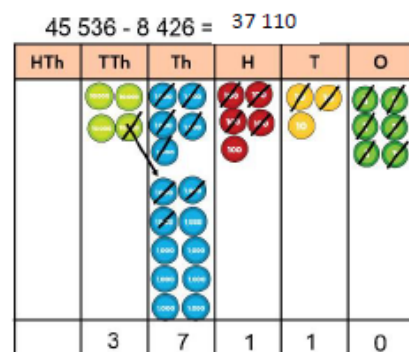
Subtraction

Working towards subtracting numbers with more than 4 digits.

Column method

Children continue to develop their knowledge of the column method, subtracting numbers with more than 4 digits.

Children start by recapping their understanding using the place value counters.



Once knowledge is secure, children move to using a formal written method.

$$45\ 536 - 8\ 426 = 37\ 110$$

	TTh	Th	H	T	O
	4	5	5	3	6
-	8	4	2	6	
	3	7	1	1	0

Subtracting decimal numbers

Children begin to apply their knowledge of column subtraction to decimal numbers.

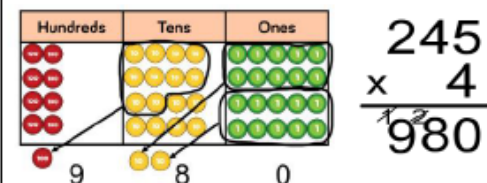
Multiplication

Working towards multiplying 4 digit numbers by one or two digits.

Column method

Children start by recapping their knowledge of multiplying 3 digits by ones.

$$245 \times 4 = 980$$

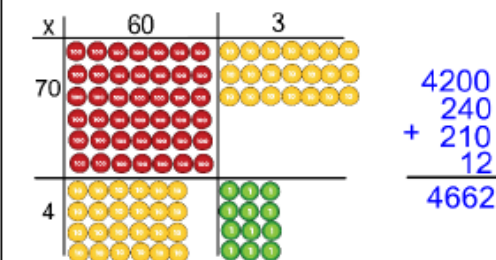


Once knowledge is secure, children start to explore multiplying by 2 digit numbers.

Starting practically using Place Value counters.

$$74 \times 63 = 4662$$

Starting with the tens, each digit is multiplied together. Place value counters are used to help children to visualise the answers.



Once each box is completed, all answers are added together to give the total.

Once this method is secure, children move on to an expanded written method.

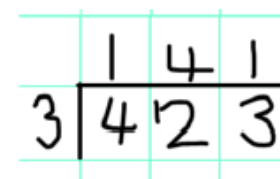
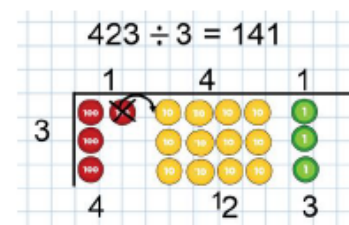
Children multiply each column starting with the ones. As with practical method above, answers are added together to give the total.

Division

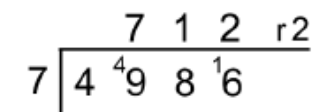
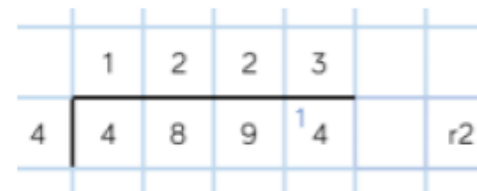
Working towards dividing 4 digit numbers by ones.

Short division

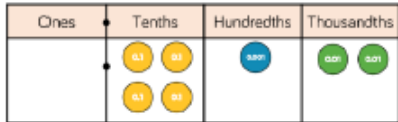
Before moving on to dividing 4 digit numbers, children firstly revise dividing 3 digits by 1 digit as in year 4.



Once this knowledge is secure, children move on to dividing larger numbers, using short division.

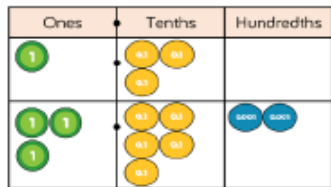
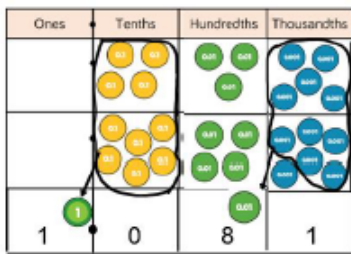


Children work practically with Place Value counters to explore:



- What number is one hundredth more?
- Add 0.3, what number do you have now?
- How many more thousandths can I add before the hundredths digit changes?

Once knowledge of decimal place value is secure, children then move on to adding decimal numbers together. First using Place Value counters and then a formal written method.



$$\begin{array}{r} + 0.453 \\ + 0.664 \\ \hline 1.117 \end{array} \quad \begin{array}{r} 1.3 \\ + 3.52 \\ \hline \end{array}$$

$$\begin{array}{r} 23.361 \\ 9.080 \\ 59.770 \\ + 1.300 \\ \hline 93.511 \\ 212 \end{array}$$

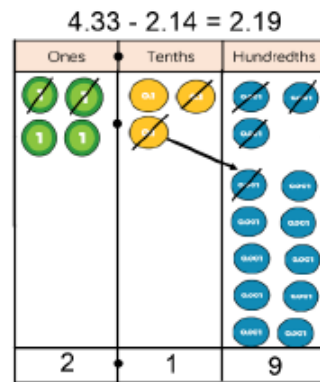
Children to include place holders when adding numbers with different decimal places.

Children work practically with Place Value counters to explore:



- What is three tenths less than the number?
- Take away 0.02, what is your number now?
- Subtract 5 thousandths. What is the final number?

Once knowledge of decimal place value is secure, children then move on to subtracting decimal numbers. First using Place Value counters and then a formal written method.



$$\begin{array}{r} 4.33 \\ - 2.14 \\ \hline 2.19 \end{array}$$

$$\begin{array}{r} 23.012 \\ - 7.230 \\ \hline 15.782 \end{array}$$

Children to include place holders when subtracting numbers with different decimal places.

$$\begin{array}{r} 74 \\ \times 63 \\ \hline 222 \\ 440 \\ \hline 4662 \end{array} \quad \begin{array}{l} (4 \times 3) \\ (70 \times 3) \\ (4 \times 60) \\ (70 \times 60) \end{array}$$

Compact written method

Some children may start to use a more compact written method.

$$\begin{array}{r} 74 \\ \times 63 \\ \hline 222 \\ + 440 \\ \hline 4662 \end{array} \quad \begin{array}{l} (74 \times 3) \\ (74 \times 60) \end{array}$$

First, 4 is multiplied by 3 to give 12. The 2 is placed in the ones column and the 10 is exchanged for 1 ten in the tens column.

Next, 7 tens are multiplied by 3 to give 21 tens, the extra 10 is added to give 22 tens. We place a 2 in the tens column and a 2 in the hundreds column.

Then we move on to multiplying by 60. To help us with this, we put a place holder (zero) in the ones column to show that we are multiplying by 10.

We then repeat the steps as above. 4 is multiplied by 6 tens to give 24 tens. We place the 4 in the tens column and exchange the 2 for hundreds.

Then we multiply 7 tens by 6 tens to give us 42 hundreds. We add the extra 2 hundreds to give 44 hundreds. We place 4 in the hundreds column and 4 in the thousands column.

Finally, we add our answers together to give the total.

Children extend their knowledge by using their skills to solve division problems.

I am thinking of a 3-digit number.

When it is divided by 9, the remainder is 3

When it is divided by 2, the remainder is 1

When it is divided by 5, the remainder is 4

What is my number?

Always, Sometimes, Never?

A three-digit number made of consecutive descending digits divided by the next descending digit always has a remainder of 1

$$765 \div 4 = 191 \text{ remainder } 1$$

How many possible examples can you find?