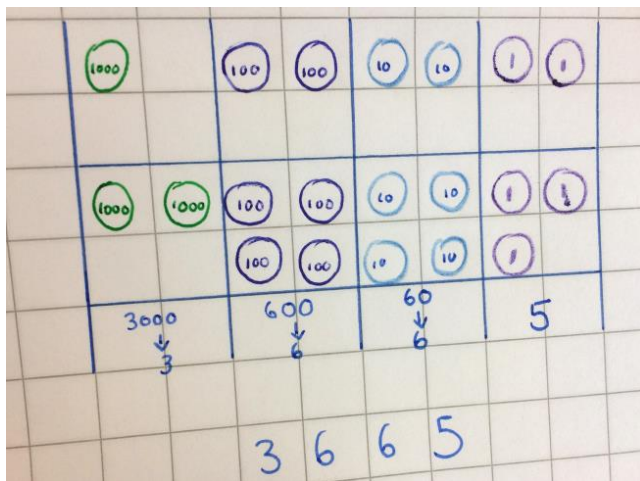
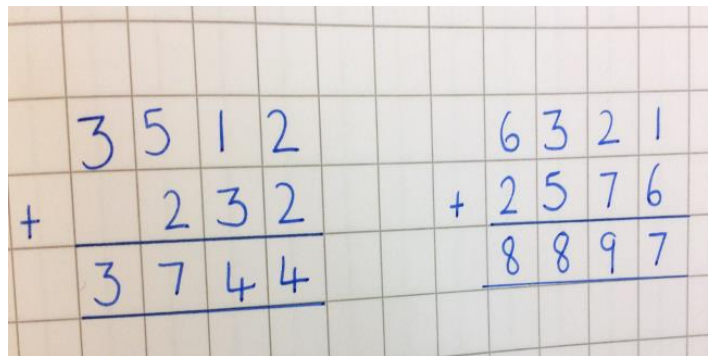
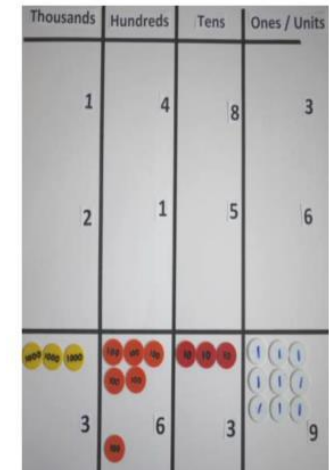
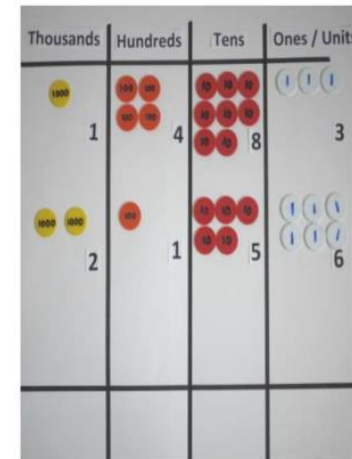
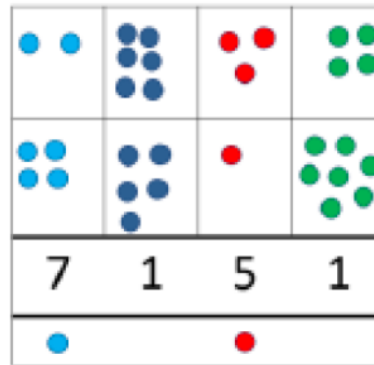


# Year Four Addition

Year Four	Pupils should be able to:	
	Pupils should be taught to:	
	<ul style="list-style-type: none"><li>add numbers with up to 4 digits using the formal written methods of columnar addition</li></ul>	
Compact Columnar Addition with no regrouping		
Children can draw a pictorial representation of the columns and place value counters	Formal column method involving no regrouping	
1222+2443 =3665	<div></div>	
	<div></div>	
Compact Columnar Addition with regrouping		

Children can use or draw a pictorial representation of the columns and place value counters

$$2634 + 4517 = 7151$$

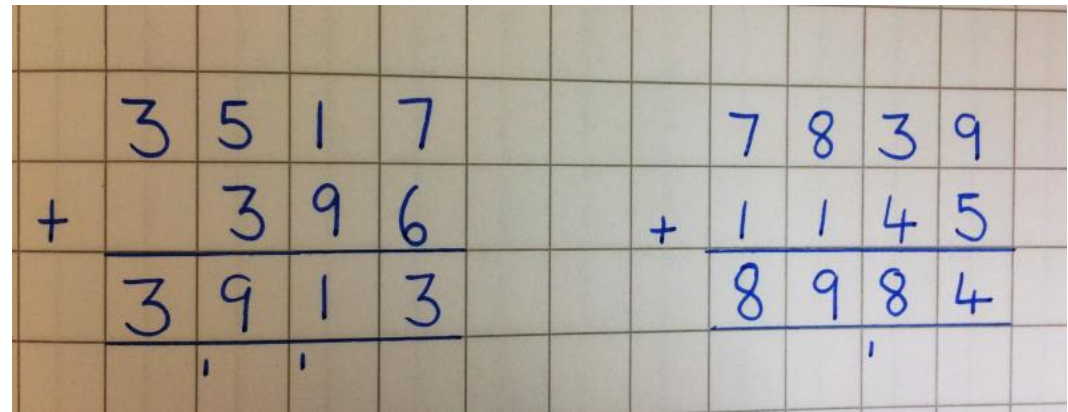


Formal column method involving regrouping

$$3517 + 396 = 3913$$

$$7839 + 1145 = 8984$$

Use the language of place value to ensure understanding

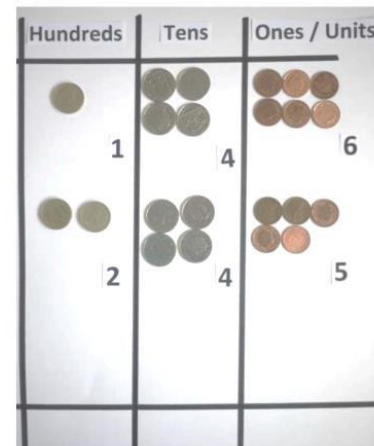


Addition with Decimals

Children use coins to add two decimal amounts together

Example exemplifies regrouping

$$£1.46 + £2.45 = £3.91$$



Hundreds	Tens	Ones / Units
1	4	6
2	4	5
3	9	1

Formal column method with decimals in different contexts including money

$$£ 7.36 + £ 2.41 = £9.77$$

The decimal point needs to be lined up like all the other place value columns

It is important that children recognise that they are adding tenths and hundredths and that they understand they are adding part of a number not a whole number


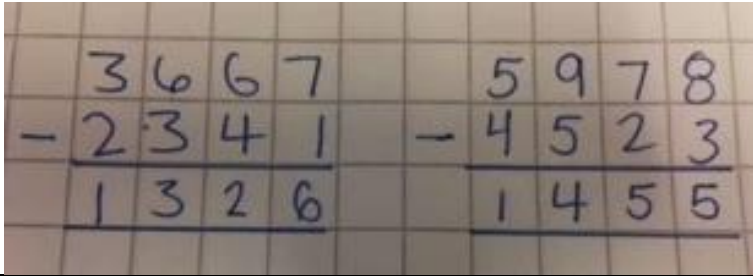
	£	7	.	36
+	£	2	.	41
	£	9	.	77

Formal column method with decimals in different contexts including money

$$£8.79 + £ 6.72 = £15.51$$

	£	8	.	79
	£	6	.	72
	£	1	.	51

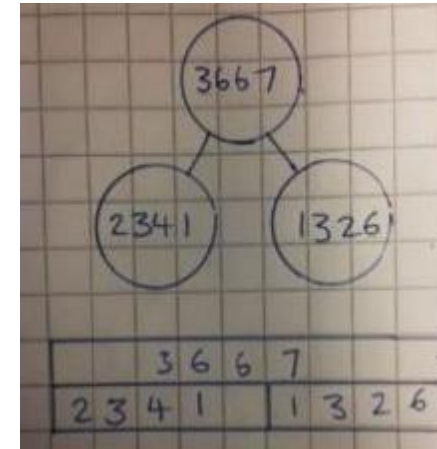
# Subtraction

Year Four	<p>Pupils should be able to:</p> <p>Pupils should be able to:</p> <ul style="list-style-type: none"> <li>Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction</li> </ul>
Compact Columnar Subtraction	
<p>Children can use concrete or draw a pictorial representation of the columns and place value counters. Can physically cross out in books to solve.</p> <p><math>3667 - 2341 = 1326</math></p> 	<p>Formal column method involving no regrouping.</p> <p><math>3667 - 2341 =</math>  <math>5978 - 4523 =</math></p>  <p>Children should be able to represent their understanding of addition and subtraction within a bar model and a part-part whole model.</p>

Children should be able to explain that they are finding a part when they subtract and they are finding a whole or a total when adding.

Th	H	T	O
1000 1000	100 100 100	10 10 10	1 1 1 1
1000	100 100 100	10 10 10	1 1 1

Th	H	T	O
1000 1000	100 100 100	10 10 10	1 1 1 1
1000	100 100 100	10 10 10	1 1 1



Children can use or draw a pictorial representation of the columns and place value counters

$$6421 - 3278 = 3143$$

Th	H	T	O
1000 1000	100	10 10	1 1 1
1000		10 10	

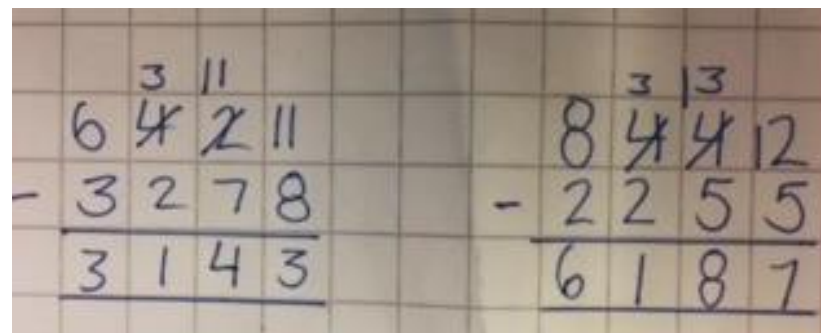


Formal column method involving regrouping above

$$6421 - 3278 =$$

$$8442 - 2255 =$$

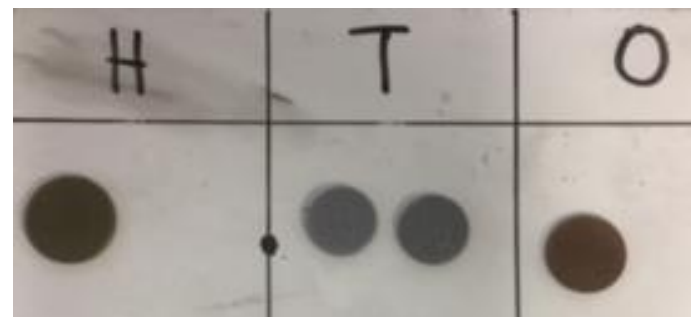
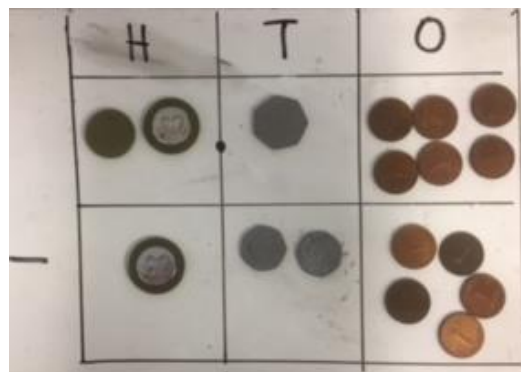
Reminding children of place value when regrouping – is this a ten or a one I'm regrouping?



### Subtraction with decimals

Children use coins to subtract two decimal amounts to find change

$$£3.56 - £2.45 = £1.11$$

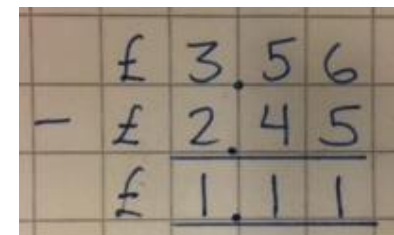


Formal column method with decimals in different contexts including money

$$£ 3.56 - £ 2.45 = £ 1.11$$

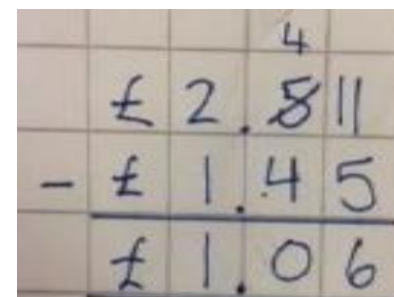
The decimal point needs to be lined up like all the other place value columns

It is important that children recognise that they are subtracting tenths and hundredths and that they understand they are subtracting part of a number not a whole number



	£	3	.	5	6
-	£	2	.	4	5
	£	1	.	1	1

$$£2.51 - £ 1.45 = 1.06$$



				4	
	£	2	.	5	1
-	£	1	.	4	5
	£	1	.	0	6



# Multiplication

Year Four	Pupils should be able to: <ul style="list-style-type: none"><li>Count in multiples and solve problems within 0,1, 6, 7, 9, 11 and 12 times tables</li><li>multiply two-digit and three-digit numbers by a one-digit number using formal written layout</li></ul>	
Grid Method 2 digit by 1 digit		
Grid method-pictorial	Grid method	
The two digit number is partitioned horizontally with the tens digit coming first. The number is represented by the children's drawings of place value counters.	14 x 6 = <ul style="list-style-type: none"><li>Partition the number into tens and ones</li><li>Multiply the pairs of numbers</li><li>Record the answer in the grid</li><li>Add the two answers together</li></ul>	



$14 \times 6 =$

$$14 \times 6 = 84$$


$\times$	10	4
6		
	60	24
	$60 + 24 = 84$	




Answer: 84

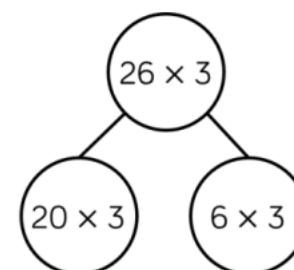
$$14 \times 6 = 84$$

$\times$	10	4
6	60	24
	$60 + 24 = 84$	

Answer: 84

 Rosie uses Base 10 and a part-whole model to calculate  $26 \times 3$ . Complete Rosie's calculations.

Tens	Ones
	
	
	



Use Rosie's method to work out:

$$36 \times 3$$

$$24 \times 6$$

$$45 \times 4$$

Expanded short 2 digit by 1 digit

Short 2 digit by 1 digit

The children will use the expanded short method to multiply a two digit number by a one digit number

$$24 \times 6 =$$

Answer: 144

Once the children are secure with the expanded short method they can use the short method to multiply a two digit number by a one digit number

$$24 \times 6 =$$

Answer: 144

### Three Digit by One Digit

Grid method-place value counters

The two digit number is partitioned horizontally with the tens digit coming first. The number is represented by the children's drawings of place value counters.

$$415 \times 4 =$$



A school has 4 house teams.

There are 245 children in each house team.

How many children are there altogether?

Hundreds	Tens	Ones
100 100	10 10 10 10	1 1 1 1 1
100 100	10 10 10 10	1 1 1 1 1
100 100	10 10 10 10	1 1 1 1 1
100 100	10 10 10 10	1 1 1 1 1

	H	T	O
	2	4	5
x			4

Grid method

- Partition the number into tens and ones
- Multiply the pairs of numbers
- Record the answer in the grid
- Add the two answers together

$$415 \times 4 =$$

Answer: 1660

Handwritten work on grid paper showing the calculation of 415 multiplied by 4. The top line shows the equation  $415 \times 4 = 1660$ . Below this, a column-wise multiplication is shown: 4 multiplied by 5 gives 20, 4 multiplied by 10 gives 40, and 4 multiplied by 400 gives 1600. These are then added together:  $1600 + 40 + 20 = 1660$ .

Answer: 1660

# Division

Year Four

Pupils should be able to:

- Recall multiplication and division facts for multiplication tables up to  $12 \times 12$
- Use place value, known and derived facts to divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers
- Recognise and use factor pairs and commutativity in mental calculations
- Multiply two-digit and three-digit numbers by a one-digit number using formal written layout

## Division with the Part Whole Model

Children can use place value counters to consolidate chunking

$$88 \div 4 = 22$$

$\begin{array}{r} 88 \\ - 40 \quad (10 \times 4) \\ \hline 48 \\ - 40 \quad (10 \times 4) \\ \hline 8 \\ 8 \quad (2 \times 4) \\ \hline 0 \end{array}$	$\begin{array}{l} 1 \times 4 = 4 \\ 2 \times 4 = 8 \\ 3 \times 4 = 12 \\ 4 \times 4 = 16 \\ 5 \times 4 = 20 \\ 6 \times 4 = 24 \\ 7 \times 4 = 28 \\ 8 \times 4 = 32 \\ 9 \times 4 = 36 \\ 10 \times 4 = 40 \end{array}$
--	--

HTO  $\div$  O
















$$192 \div 6 = 32$$

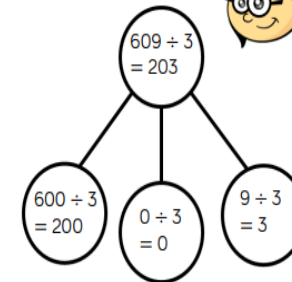
$\begin{array}{r} 192 \\ - 60 \quad (10 \times 6) \\ \hline 132 \\ - 60 \quad (10 \times 6) \\ \hline 72 \\ - 60 \quad (10 \times 6) \\ \hline 12 \\ 12 \quad (2 \times 6) \\ \hline 0 \end{array}$	$\begin{array}{l} 1 \times 6 = 6 \\ 2 \times 6 = 12 \\ 3 \times 6 = 18 \\ 4 \times 6 = 24 \\ 5 \times 6 = 30 \\ 6 \times 6 = 36 \\ 7 \times 6 = 42 \\ 8 \times 6 = 48 \\ 9 \times 6 = 54 \\ 10 \times 6 = 60 \end{array}$
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Annie is dividing 609 by 3 using place value counters.



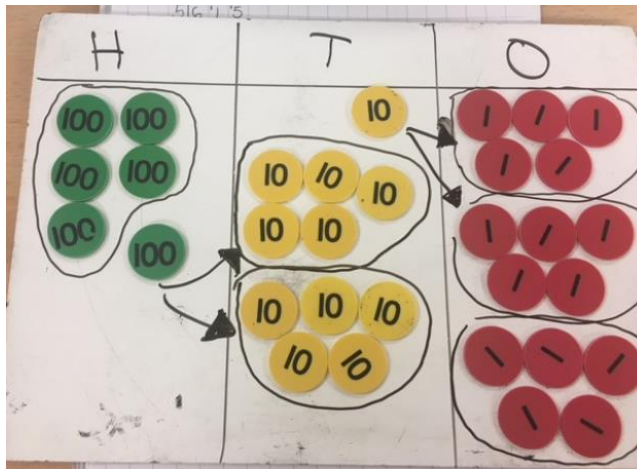
Hundreds	Tens	Ones
 		  
 		  
 		  



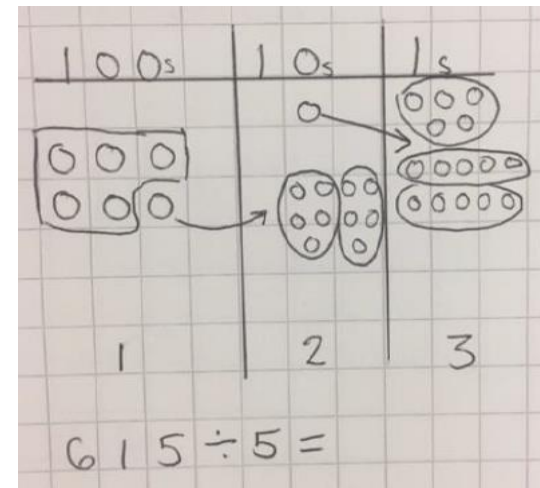
### Formal Short

Children should understand short division as grouping. Start by using concrete resources such as place value counters

$$615 \div 5 = 213$$



Children should consolidate chunking before moving on to the more formal short division



Once children have solved both concretely and pictorially they can use the formal short division as exemplified.

Year 4 pupils can do this with both HT x O and HTO X O as well as working out with remainders

The image shows a handwritten short division problem on a grid background. The top row contains the equation  $615 \div 5 =$ . Below this, the numbers 1, 2, and 3 are written above a horizontal line. Under the line, the numbers 5, 6, 1, and 5 are written, with a vertical line to the left of the 6. This represents the calculation  $615 \div 5 = 123$ .