

	ADDITION YEAR 5							
Objective & Strategy	Concrete	Pictorial Abstract				ct		
Add numbers with at least 4 digits 104,328 + 61,731 By Year 5, most children are encouraged to work in the abstract using the column method to add large numbers. Some children may be able to work mentally	Place value counters on a place value grid	Part, Part Whole Models 104,328 61,731 Part Models Bar Model	1 + 1	0 6 6	4 1 6	3 7 0	3 5	8 1 9
Add with up to 2 decimal places 3.65 + 2.41 At this stage, most children are encouraged to work in the abstract using the column method to add large numbers. Some children may be able to work mentally. Decimals are put into context: eg: money & measure	Place value counters or plain counters on a place value grid	2.41	3.65 + 2.41 6.06					



SUBTRACTION YEAR 5

Objective & Strategy

Subtract numbers with at least 4 digits.

294,382 - 182,501

By Year 5, most children are encouraged to work in the abstract using the column method to subtract to subtract numbers efficiently.

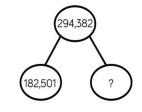
Concrete

HTh	TTh	Th	Н	Т	0
© Ø	000 000 000 000	O Ø	000 000 000 000 000 000	000 000 00	o Ø

Place value counters or plain counters on a place value grid.

This reinforces the idea of exchanging. For example, by changing a hundreds counter for 10 tens counters to give sufficient 'tens' to enable the subtraction.

Pictorial



Part, Part Whole Model

294,382				
182,501	?			
Bar Model				

Abstract

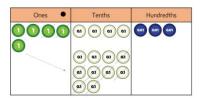
	2	9	3/	13	8	2
-	1	8	2	5	0	1
	1	1	1	8	8	1

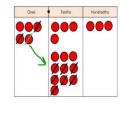
Subtract numbers with up to 2 decimal places

5.43-2.7 = 2.73

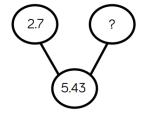
At this stage, most children are encouraged to work in the abstract using the column method to subtract to subtract numbers efficiently.

Children are given opportunities to subtract decimal numbers in the context of money and measure.

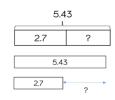




Place value counters or plain counters on a place value grid



Part, Part Whole Model



Bar Models

When writing the columns, children are taught to ensure the decimal points all line up.



MULTIPLICATION YEAR 5

Pictorial

Objective & Strategy
Multiply a 2,3 or 4digit number by a 1digit number.

1826 x 3 = 5,478

For children who continue to benefit from using manipulatives, place value counters provide the best support.

By Year 5, children should have a rapid and accurate recall of the times tables facts, but some children may still need to use a times tables square for support.

Most children are encouraged to use the short multiplication method for accuracy.

Thousands	Hundreds	Tens	Ones
		000	
			000
			000
·	0000	00	000
			000
1000 (1000		(10)	

Concrete

Place Value counters on a Place Value grid



	Th	Н	T	0
	1	8	2	6
×				3
	5	4	7	8
		_	1	

Abstract



Objective a Strategy
Multiply a 2 or 3-digit
number by a 2-digit
number

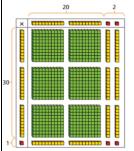
22 x 31 = 682

Some children may benefit from using Dienes blocks and sticks to help them visualise the calculation. This links to finding the area of a rectangle as the Dienes blocks fill the space covered.

However, place value counters and a place value grid are a more efficient concrete method.

Grids are not encouraged in Year 5, but may still be used to help children picture the calculation.

Most children by Year 5 are encouraged to use abstract methods and develop a confident and accurate use of formal long multiplication



Dienes (base 10) blocks.

10 10	0 0
100 100	10 10
100 100	10 10
100 100	10 10
1 00 00	1 1

Concrete

Place Value counters on a Place Value grid.

×	20	2
30	600	60
1	20	2

Pictorial

	Н	Т	0
		2	2
×		3	1
		2	2
	6	6	0
	6	8	2

Abstract



Objective & Strategy	Concrete	Pictorial		A	Nbstr	act	COMBINED SCHOOL
Multiply a 4-digit number			TTL	TL	Н	Т	
by a 2-digit number	Multiplication Square 1 2 3 4 5 6 7 8 9 10 11 12 1 1 2 3 4 5 6 7 8 9 10 11 12		TTh	Th 2	7	3	9
2739 x 28 = 76,692	2 2 4 6 8 10 12 14 16 18 20 22 24 8 3 6 9 12 15 18 21 24 27 30 33 36 4 4 8 12 16 20 24 28 32 36 40 44 48 5 5 10 15 20 25 30 35 40 45 50 55 60		×	_		2	8
When multiplying a 4 digit number	6 6 12 18 24 30 36 42 48 54 60 66 72 7 7 14 21 28 35 42 49 56 63 70 77 84 8 8 16 24 32 40 48 56 64 72 80 88 96 9 9 18 27 36 45 54 63 72 81 90 99 108		2	1 5	9	1 7	2
children should be confident in using a formal method of long	10 10 20 30 40 50 60 70 80 90 100 110 120 111 12 23 34 44 55 66 77 88 99 110 121 32 12 12 24 36 48 60 72 84 96 108 120 132 144		5	4	7	8	0
multiplication. A times tables square may still			7	6	6	9	2
be used if children have not yet secured a sound working knowledge of the tables.					1		
It is important that children are taught to consistently place exchanged digits. This will avoid confusion.							



DIVISION YEAR 5							
Objective & Strategy	Concrete	Pictorial	Abstract				
Divide a 4-digit number by 1-digit number	Th H T O	1517÷7	4 2 6 6				
8532 divided by 2 = 4266		7 1517	2 8 5 13 12				
Place value counters or plain counters can be used on a Place							
Value grid to support children in visualising the calculation.		Pictorial method	Formal short division method using the division				
Children could also draw counters on an empty Place Value grid through a pictorial method.			symbol which resembles a 'bus stop'.				
However, in upper Key Stage 2, children are taught to use a more formal method of short division – especially where multiple exchanges are required.							