Calculation Policy

To Be Reviewed: April 2026

Year One

Addition	Subtraction	Multiplication	Division
Combining two parts to make a whole: part whole model	**Taking ones away**	**Doubling**	**Sharing objects into groups**

Addition

Combining two parts to make a whole: part whole model

Use cubes to add two numbers together as a group or in a bar.

Use pictures to add two numbers together as a group or in a bar.

Starting at the bigger number and counting on

Subtraction

Taking ones away

Use physical objects, counters, cubes etc to show how objects can be taken away.

6 − 2 = 4

Cross out drawn objects to show what has been taken away.

15 − 3 = 12

Multiplication

Doubling

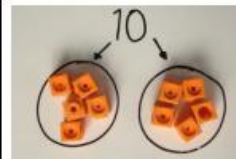Use practical activities to show how to double a number.

double 4 is 8
4 × 2 = 8

Draw pictures to show how to double a number.

Double 4 is 8

16
10 6
x2 x2
20 12

Counting in multiples
Count in multiples supported by concrete objects in equal groups.

Division

Sharing objects into groups

I have 10 cubes, can you share them equally in 2 groups?

10

Children use pictures or shapes to share quantities

8 ÷ 2 = 4

Moving on to the abstract 9 ÷ 3 = 3

Column 1

$12 + 5 = 17$
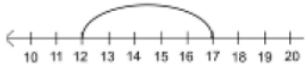
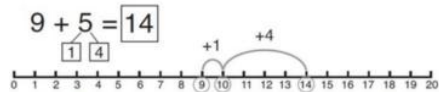Start at the larger number on the number line and count on in ones or in one jump to find the answer.

Regrouping to make 10
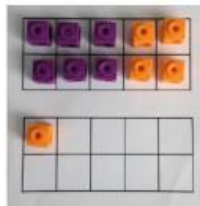
Start with the bigger number and use the smaller number to make 10.

This is an example of a pictorial representation which could be used.

$9 + 5 = \boxed{14}$
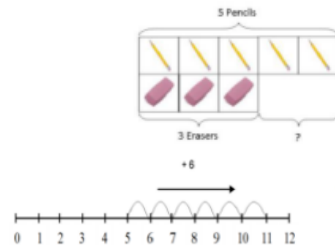

Moving onto the abstract $5 + 12 = 17$

Column 2

Find the difference

Compare amounts and objects to find the difference. Use cubes to build towers or make bars to find the
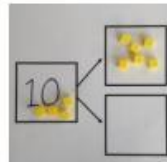

difference
Use basic bar models with items to find the difference.

Count on to find the difference.

Part whole model

Link to addition- use the part whole model to help explain the inverse between addition and subtraction.

Use a pictorial representation of objects to show the part part whole model.

Move to using numbers within the part whole model.
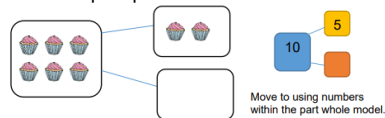
Moving onto abstract $18 - 3 = 15$

Column 3
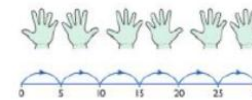
Use a number line or pictures to continue support in counting in multiples.

Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25 , 30

Column 4

Divide quantities into equal groups. Use cubes, counters, objects, or place value counters to aid understanding.
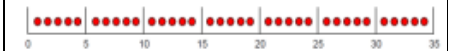
Use a number line to show jumps in groups. The number of jumps equals the number of groups.
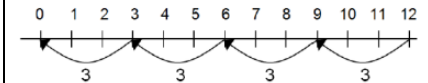
Moving onto the abstract $28 \div 7 = 4$

Year Two

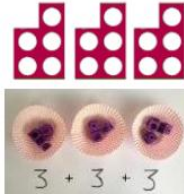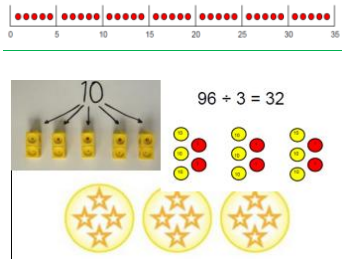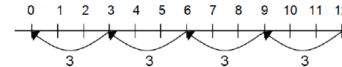|	Addition	Subtraction	Multiplication	Division
Calculation Methods: **Concrete** **Pictorial** **Abstract**	**Add three single digits** 4 + 7 + 6= 17 Put 4 and 6 together to make 10. Add on 7. Following on from making 10, make 10 with 2 of the digits (if possible) then add on the third digit. Add together three groups of objects. Draw a picture to recombine the groups to make 10. $(4) + 7 + (6) = \boxed{10} + \boxed{7}$ $\quad\quad 10$ $\quad\quad = \boxed{17}$ Combine the two numbers that make 10 and then add on the remainder. **Column method- no regrouping** 24 + 15= Add together the ones first then add the tens. Use the Base 10 blocks first before moving onto place value counters. Focus on dienes Limit use of PV	**Revisit concrete, pictorial, and abstract strategies from Year One:** **Taking Away One** **Counting Back** **Find the Difference** **Part Whole Model** **Column method without regrouping** Use Base 10 to make the bigger number then take the smaller number away. Show how you partition numbers to subtract. Again make the larger number first.	**Revisit concrete, pictorial, and abstract strategies from Year One:** **Doubling** **Counting in Multiples** **Repeated addition** Use different objects to add equal groups. 3 + 3 + 3 There are 3 plates. Each plate has 2 star biscuits on. How many biscuits are there? 2 add 2 add 2 equals 6 Write addition sentences to describe objects and pictures. 2 + 2 + 2 + 2 + 2 = 10 **Arrays showing commutative multiplication**	**Division as grouping** Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding. 96 ÷ 3 = 32 Use a number line to show jumps in groups. The number of jumps equals the number of groups. 0 1 2 3 4 5 6 7 8 9 10 11 12 3 3 3 3 **Division within arrays** Link division to multiplication by creating an array and thinking about the number sentences that can be created. Eg 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15

![Walking Tall - Richardson Dees Primary School]

	After practically using the base 10 blocks and place value counters, children can draw the counters to help them to solve additions. T O ●●● ●● ●●● ●●● **Moving onto the abstract** 21 + 42 = 21 + 42	**Moving onto the abstract** 47 − 24 = 23 40 + 7 − 20 + 4 ———— 20 + 3 This will lead to a clear written column subtraction. 32 − 12 ——— 20	**Draw arrays in different rotations to find commutative multiplication sentences.** ●●●● 4 × 2 = 8 ●●●● 2 × 4 = 8 ●● 2 × 4 = 8 ●● ●● ●● 4 × 2 = 8 Use an array to write multiplication sentences and reinforce repeated addition. ●●●●● ●●●●● ●●●●● 5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 x 3 = 15 3 x 5 = 15	●●●●● ●●●●● ●●●●● Draw an array and use lines to split the array into groups to make multiplication and division sentences. Also use multiplication triangles Find the inverse of multiplication and division sentences by creating four linking number sentences. 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7 "Fact Families" **Moving onto the abstract** 28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?
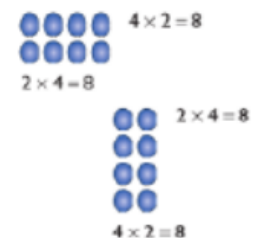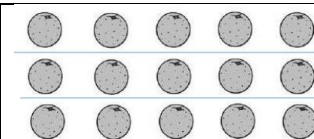
Calculation Methods:
Concrete
Pictorial
Abstract

Column method regrouping

Children can draw a pictorial representation of the columns and place value counters to further support their learning and understanding.

Start by partitioning the numbers before moving on to clearly show the exchange below the addition. This is expanded form:

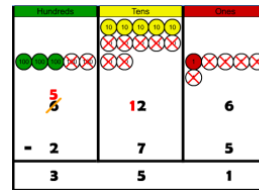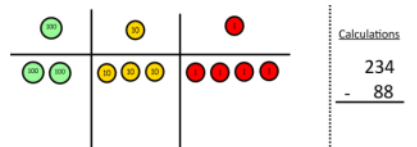**Moving onto the abstract of column addition**

Column method with regrouping

Use Base 10 to start with before moving on to place value counters. Start with one exchange before moving onto subtractions with 2 exchanges.

Make the larger number with the place value counters

Calculations

234
-   88

Draw the counters onto a place value grid and show what you have taken away by crossing the counters out as well as clearly showing the exchanges you make.
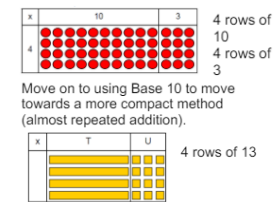
Moving onto the abstract of decomposition

Revisit concrete, pictorial, and abstract strategies from Year Two:
Repeated Addition
**Arrays showing commutative multiplication**

Grid Method
Show the link with arrays to first introduce the grid method with counters

4 rows of 10
4 rows of 3

Move on to using Base 10 to move towards a more compact method (almost repeated addition).
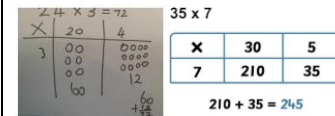

4 rows of 13

Use base 10 – then, once secure, move on to place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows.

Fill each row with 126.

Calculations
4 x 126
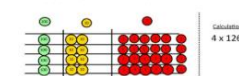
Children can represent the work they have done with place value counters in a way that they understand.

35 x 7

×	30	5
7	210	35

210 + 35 = 245

Moving forward, multiply by a 2 digit number showing the different rows within the grid method.
18 x 13

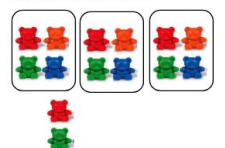| ×	10	8
10	100	80
3	30	24

Moving onto the abstract of short multiplication

Revisit concrete, pictorial, and abstract strategies from Year Two:
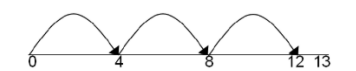**Division with arrays**

Division with a remainder
$14 ÷ 3 =$
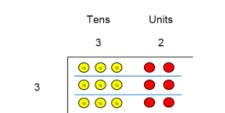Divide objects between groups and see how much is left over

Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder.

Draw dots and group them to divide an amount and clearly show a remainder.
14 4

remainder 2

$96 ÷ 3$

Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.

Only for SEN children. Not practical for higher numbers. As soon as understood, move onto abstract.
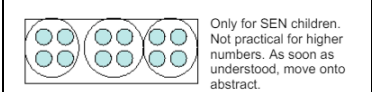
Moving onto the abstract of short division
Begin with divisions that divide equally with no remainder.

Year Four

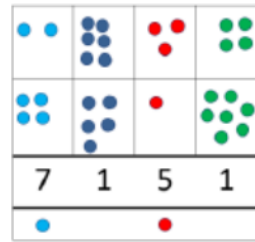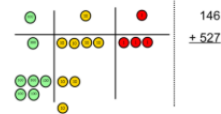## Calculation Methods:
Concrete
Pictorial
Abstract

Column method regrouping
Make both numbers on a place value grid.

146
+ 527
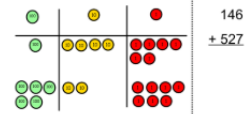
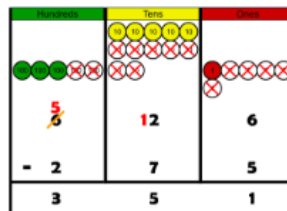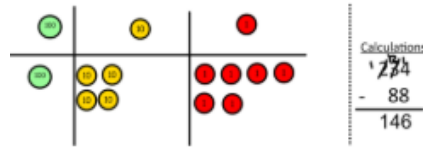Add up the units and exchange 10 ones for one 10.

146
+ 527

7	1	5	1

Start by partitioning the numbers before moving on to clearly show the exchange below the addition.
This is expanded form:

20	+	5
40	+	8
60	+	13	= 73

Moving onto the abstract of column addition with exchanges

Column method regrouping

Calculations
734
- 88
 146

Hundreds	Tens	Ones
5/6	12	6
- 2	7	5
3	5	1

Draw the counters onto a place value grid and show what you have taken away by crossing the counters out as well as clearly showing the exchanges you make.

Moving onto the abstract of column subtraction with exchanges

728-582=146
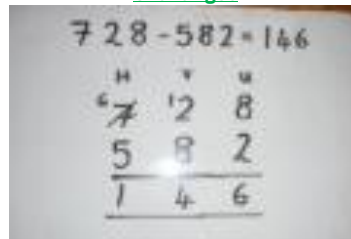
Grid Method
Use base 10 – then, once secure, move on to place value counters to show how we are finding groups of a number.

Calculations
4 x 126

24 x 3 = 72

35 x 7
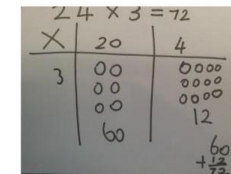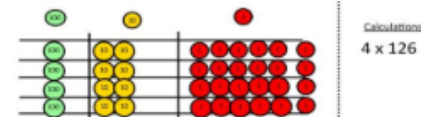
×	30	5
7	210	35

210 + 35 = 245

Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods. (Children need to understand multiplication as repeated addition to use bar modelling for problem solving).

Moving onto the abstract of column multiplication
Year 4 – two- and three-digit x 1 digit

Revisit concrete, pictorial, and abstract strategies from Year Three:
Division with arrays
Division with a remainder

Short division
96 ÷ 3

	Tens	Units
	3	2
3		

Students can continue to use drawn diagrams wit or circles to help them divide numbers into equal

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understood, mov
abstract.

Moving onto the abstract of short division

2 1 8
4 | 8 7 2
      3

8 6 r 2
5 | 4 3 2
      3

Year Five

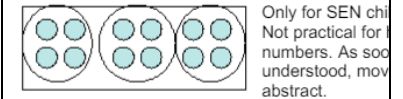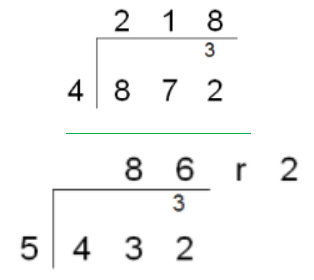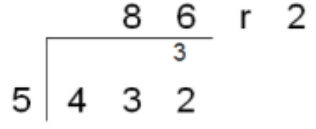|	Addition	Subtraction	Multiplication	Division
Calculation Methods: **Concrete** **Pictorial** **Abstract**	**Column addition including the expanded form to develop reasoning skills** Start by partitioning the numbers before moving on to clearly show the exchange below the addition. This is expanded form: $20 + 5$ $\underline{40 + 8}$ $60 + 13 = 73$ As the children move on, introduce decimals with the same number of decimal places and different.	**Expanded subtraction** **(**below) to be done in Y3. Then use expanded and compact (second picture) method side by side. 836 - 254 = 582 800 130 6 - 200 50 4 500 80 2 728 - 582 = 146 7 '2 8 5 8 2 1 4 6 Moving forward the children use a more compact method. This will lead to an understanding of subtracting any number including decimals. $2\,63.0 - 26.5 = 236.5$	**Column Multiplication** Start with short multiplication **Long Multiplication** If it helps, children can write out what they are solving next to their answer. 32 × 24 8 (4 x 2) 120 (4 x 30) 40 (20 x 2) 600 (20 x 30) 768 98 × 54 392 ← This is 98 x 4 4900 ← This is 98 x 50 5292 ← This is 98 x 54	**Short Division** 8 6 r 2 3 5	4 3 2 Move into decimal places to divide the total accurately 1 4 . 6 16 21 3 5	5 1 1 . 0 **Long Division** Children apply their learning of short division and write the groups underneath to use column subtraction to calculate a remainder. The next digit then meets the remainder rather than carrying the remainder over. For decimal long division, add the decimal point before solving the calculation.

Year 6

	Addition	Subtraction	Multiplication	Division
Calculation Methods: **Concrete** **Pictorial** **Abstract**	**Column addition including the expanded form to develop reasoning skills** Start by partitioning the numbers before moving on to clearly show the exchange below the addition. This is expanded form: $20 + 5$ $40 + 8$ $60 + 13 = 73$ As the children move on, introduce decimals with the same number of decimal places and different.	**Expanded subtraction** **(**below) to be done in Y3. Then use expanded and compact (second picture) method side by side. Moving forward the children use a more compact method. This will lead to an understanding of subtracting any number including decimals. 	**Column Multiplication** Start with short multiplication **Long Multiplication** If it helps, children can write out what they are solving next to their answer. 32 × 24 8 (4 x 2) 120 (4 x 30) 40 (20 x 2) 600 (20 x 30) 768 	**Short Division** Move into decimal places to divide the total accurately **Long Division** Children apply their learning of short division and write the groups underneath to use column subtraction to calculate a remainder. The next digit then meets the remainder rather than carrying the remainder over. For decimal long division, add the decimal point before solving the calculation.