



**Richard de Clare  
Community Academy**

# Calculation Policy

Reviewed:	Summer 2020
Next review date:	Summer 2023

## Calculation Policy

### Aims/ Intent

This policy outlines the use of calculation as part of Mathematics at Richard de Clare. It has been developed to meet the requirements of the EYFS curriculum and the National Curriculum and to ensure a consistency of approach across the school. Within this document you will find an outline of the key methods used by pupils in line with expectations for each year group.

Pupils are taught strategies to support the development of key mathematical skills. To develop mastery, we encourage the use of concrete, pictorial and abstract methods. Concrete and pictorial methods act as building blocks for more abstract written methods.

### Key Vocabulary

A key element of developing calculations within Mathematics is the use of correct mathematical language and vocabulary. It is therefore essential that this is modelled and developed by all adults within the classroom environment. Within this policy you will find a list of key vocabulary linked to each of the four operations for each year group. These lists are not exhaustive but outline the key vocabulary associated with each mathematical operation, highlighting the progression of vocabulary as children move through the school.

Correct: ones, is equal to, zero

Incorrect: units, equals, oh (like the letter)

### Age related expectations

This policy outlines the expectations for each year group. However, it is important that pupils are taught at the level they are working at and are only moved onto the next level when they are secure. Differentiation will be used accordingly thus providing children with equal opportunities to develop their mathematical skills at the level they are working at.

### Monitoring

This policy will be monitored alongside the Mathematics Policy. Class teachers will assess the knowledge and skills gained by children and adapt their teaching accordingly to meet the needs of the children within their class. Children should consolidate existing skills before moving onto the next stage, concept or method. Teachers will move children on when they are ready.

### Link with other policies

This policy will be used in conjunction with the Mathematics Policy.

This policy will be reviewed in the Summer Term 2023.

## EYFS

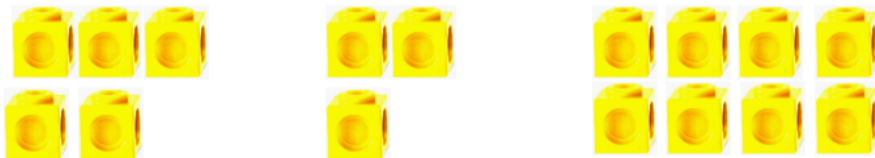
### Early Learning Goals:

- Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects. They add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.
- Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

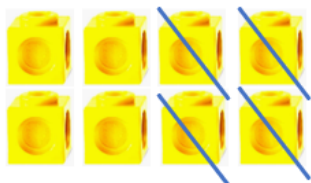
**Key Vocabulary:** number, object, count, add, altogether, take away, left, equal, groups, double, share, more, less, same

Children should use a range of concrete materials and pictorial representation to support their developing knowledge of number. They should count out sets of objects, building their counting skills so they can count from a given number reliably and develop their one to one correspondence.

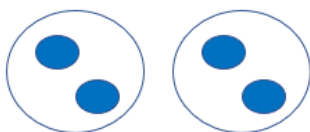
The count out groups of objects and add amounts together to get a total.



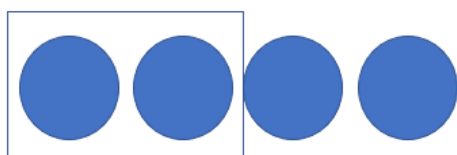
Children should count out a group of objects, take some away and then check how many they have left.



Children should recognise equal groups of objects and have opportunities to solve problems including those that involve doubling.



Children should be involved in practical opportunities linked to sharing. They use a range of concrete materials to show and support this and move onto using pictorial representations as required.



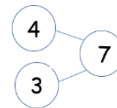
### Year 1 Addition

**National Curriculum Requirements:**

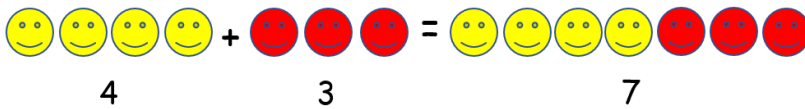
- Read, write and interpret mathematical statements involving addition (+) and equals (=) signs
- Represent and use number bonds within 20
- Add one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve addition using concrete objects and pictorial representations, and missing number problems

**Key Vocabulary:** more, plus, make, add, altogether, total, equal to, equals, double, most, count on, number line

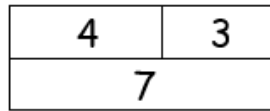
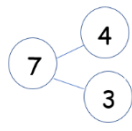
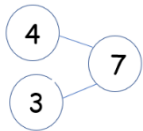
Use concrete materials to count on and add e.g. Multilink, Numicon, Counting Bears, Base Ten, Bead strings.



Use pictorial representations to count on and add.

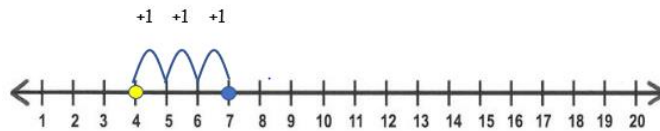


Use the part-whole model or bar model to support addition.



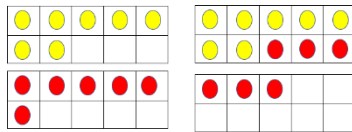
Use numbered number lines to add, encouraging children to start with the larger number and count on.

$$4 + 3 = 7$$



Regroup to make 10 using a tens frame.

$$7 + 6 =$$



Solve addition number sentences and missing number calculations linked to addition using concrete objects, pictorial representations and other resources such as number lines.

$$6 + 4 = \square$$

$$8 + \square = 10$$

$$\square + \square = 8$$

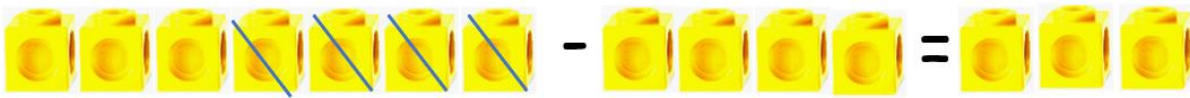
### Year 1 Subtraction

#### National Curriculum Requirements:

- Read, write and interpret mathematical statements involving subtraction (−) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Subtract one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as  $7 = \_ - 9$ .

**Key Vocabulary:** take, take away, less, minus, leaves, equal to, between, subtract, how many less, how many fewer, most, least, count back, how many left?, how much less is\_?

Use concrete materials to count back and subtract e.g. Multilink, Numicon, Counting Bears, Base Ten, Bead strings.

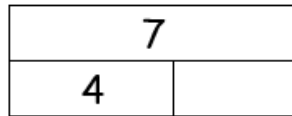
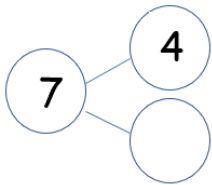


Use pictorial representations to count back and subtract.

$$7 - 4 = 3$$

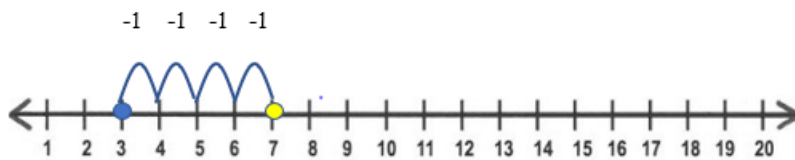


Use the part whole model or bar model to support subtraction.



Count back on a number line to subtract. Hundred squares can also be used to support subtraction.

$$7 - 4 = 3$$



Solve addition number sentences and missing number calculations linked to addition using concrete objects, pictorial representations and other resources such as number lines.

$$10 - 6 = \square$$

$$14 - \square = 11$$

$$\square - \square = 2$$

### Year 1 Multiplication

#### National Curriculum Requirements:

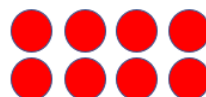
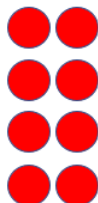
- Count in multiples of twos, fives and tens
- Solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

**Key Vocabulary:** count, times groups of, lots of, equal, repeated addition, array. multiply, altogether, how many ...?

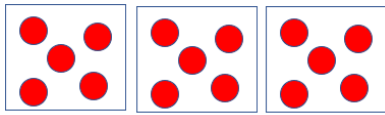
Multiply with concrete objects, pictorial representations and begin to use arrays.



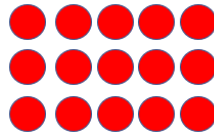
$$2 + 2 + 2 + 2 = 8$$



Solving one step problems involving multiplication e.g. There are 5 sweets in each bag. How many sweets are there in 3 bags?



$$5 + 5 + 5 = 15$$



**Year 1**  
**Division**

**National Curriculum Requirements:**

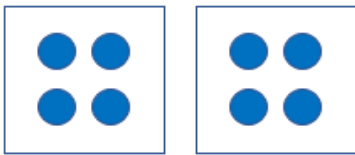
- Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

**Key vocabulary:** share, shared, sharing, group, grouping, groups of, lots of, equal, equally, amount, between, divide

Grouping: How many groups of 2 can be made from 10 counters?



Sharing: 8 shared between 2 is 4



Children need to be taught to understand the difference between 'grouping' (how many groups of 2 can you make?) and 'sharing' (share the sweets between 2 people)

Solve one step division problems e.g. There are 10 sweets and two people. How many sweets do they each get?

**Year 2**  
**Addition**

**National Curriculum Requirements:**

- Solve problems with addition using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Apply their increasing knowledge of mental and written methods
- Recall and use addition facts to 20 fluently, and derive and use related facts up to 100
- Add numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers and adding three one-digit numbers
- Show that addition of two numbers can be done in any order (commutative)
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

**Key Vocabulary:** more, plus, make, add, altogether, total, equal to, equals, double, most, count on, addition, tens, ones, digit, partition, column, number line

Pupils should continue to use a range of resources to support them when solving problems linked to addition allowing them to apply their increasing knowledge of different methods. Methods include the use of concrete resources, pictorial representations and part whole models or bar models as outlined previously.

Use known number facts and bonds to add numbers.

$$5 + 5 = 10$$

$$3 + 7 = 10$$

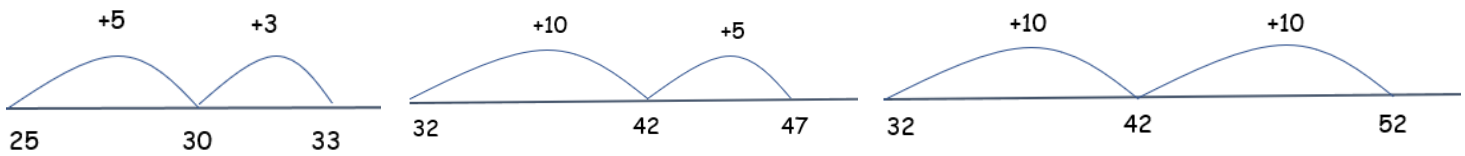
$$15 + 5 = 20$$

$$13 + 7 = 20$$

$$50 + 50 = 100$$

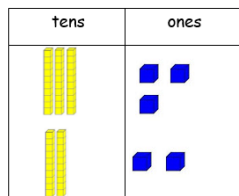
$$30 + 70 = 100$$

Use number lines to support addition including moving to blank number lines.



Use Base Ten to support partitioning and prepare for column methods.

$$33 + 22 =$$



	T	O
	3	3
+	2	2
	5	5

## Year 2 Subtraction

### National Curriculum Requirements:

- Solve problems with subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Apply their increasing knowledge of mental and written methods
- Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100
- Subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens and two two-digit numbers
- Show that subtraction of one number from another cannot be done in any order
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

**Key Vocabulary:** take, take away, less, minus, leaves, equal to, between, subtract, how many less, how many fewer, least, count back, how many left, how much less is\_?, difference between, tens, ones, partition, column, inverse

Pupils should continue to use a range of resources to support them when solving problems linked to subtraction allowing them to apply their increasing knowledge of different methods. Methods include the use of concrete resources, pictorial representations and part whole models or bar models as outlined previously.

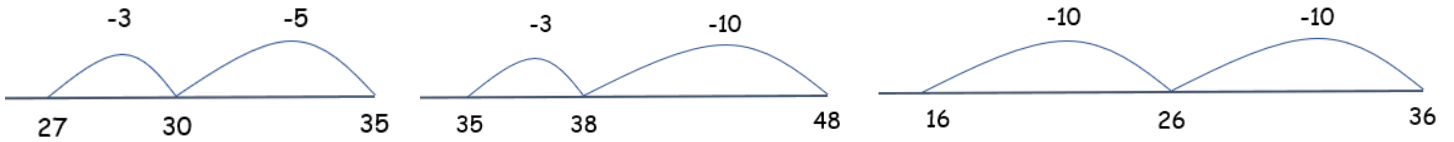
Use known number facts and knowledge to subtract numbers.

$$10 - 6 = 4$$

$$20 - 6 = 14$$

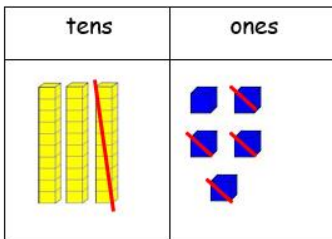
$$100 - 60 = 40$$

Use of number lines to support subtraction, including moving to blank number lines.



Use Base Ten to support partitioning and prepare for column methods

$$35 - 14 =$$



	T	O
	3	5
-	1	4
	2	1

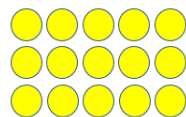
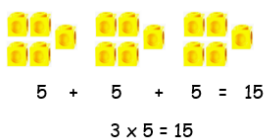
### Year 2 Multiplication

#### National Curriculum Requirements:

- Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- Calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication ( $\times$ ) and equals ( $=$ ) signs
- Show that multiplication of two numbers can be done in any order (commutative)
- Solve problems involving multiplication using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

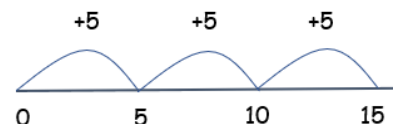
**Key Vocabulary:** count, times, groups of, lots of, equal, repeated addition, array. multiply, altogether, how many ...? column, row, commutative, inverse

Consolidate the use of repeated addition and link this to multiplication



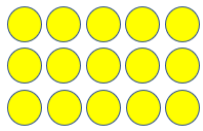
$$5 + 5 + 5 = 15$$

$$3 \times 5 = 15$$



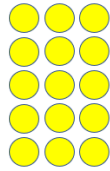


Use arrays to support multiplication including teaching the commutativity rule.



$$3 \times 5 = 15$$

$$5 \times 3 = 15$$



Children will associate the commutativity rule with multiplication and use arrays as well as other resources to show this

Children should be exposed to more abstract problems involving multiplication including word problems.

$$6 \times \square = 12$$

$$\square \times 10 = 30$$

$$\square \times \square = 12$$

$$3 \times 2 \square \quad 2 \times 3$$

### Year 2 Division

**National Curriculum Requirements:**

- Recall and use division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- Calculate mathematical statements for division within the multiplication tables and write them using the division ( $\div$ ) and equals (=) signs
- Show that division of one number by another cannot be done in any order
- Solve problems involving division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

**Key Vocabulary:** share, shared, sharing, group, grouping, groups of, lots of, equal, equally, amount, between divide, divided by, division, divided into, array, row, column

Children should build on the skills learn in Year 1 and continue to use a range of resources to support grouping equally.

Understand sharing and grouping

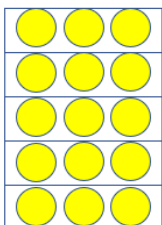
#### Sharing

Share 12 sweets between 2 people.  
How many do they each get?

#### Grouping

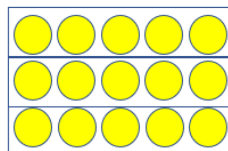
There are 12 sweets. How many people can have 2 sweets each?

Use arrays to support division.



This represents  $15 \div 5$

How many groups of 5 are there in 15?



The same array can show

$$15 \div 3 =$$

Link multiplication and division

$$6 \times 2 = 12 \quad \longrightarrow \quad 12 \div 2 = 6$$

$$2 \times 6 = 12 \quad \longrightarrow \quad 12 \div 6 = 2$$

### Year 3 Addition

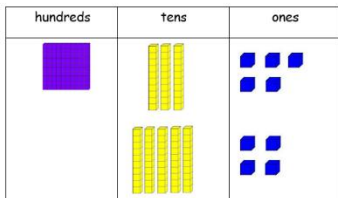
**National Curriculum Requirements:**

- Add numbers mentally, including: a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds
- Add numbers with up to three digits, using formal written methods of columnar addition
- Estimate the answer to a calculation and use inverse operations to check answers
- Solve problems, including missing number problems, using number facts, place value, and more complex addition

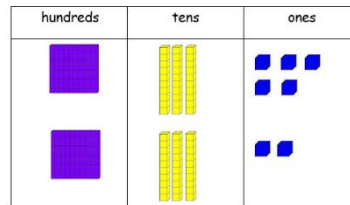
**Key Vocabulary:** more, plus, make, add, altogether, total, equal to, equals, double, most, count on, addition, tens, ones, digit, partition, column, number line, hundreds, column addition, carry

A range of resources should be made available to children to support addition. Children continue to use methods taught in Key Stage One (e.g. pictorials, part whole models or number lines) and move onto learning further methods.

Use concrete materials/ manipulatives such as Base 10 or Place Value counters to support the use of column method for addition.

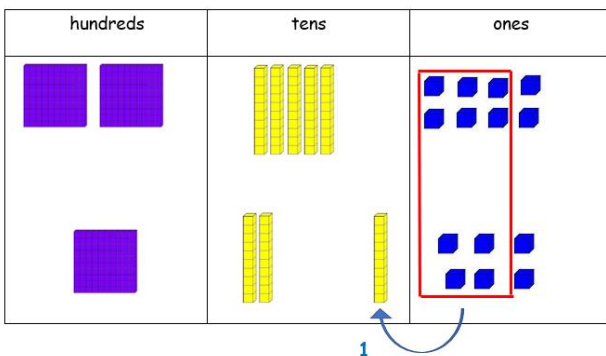


	H	T	O
	1	3	5
+		5	4
	1	8	9



	H	T	O
	1	3	5
+	1	3	2
	2	6	7

Present addition with regrouping using concrete materials alongside before moving onto using the formal written method alone.



	H	T	O
	2	5	8
+	1	2	6
	3	8	4
		1	

### Year 3 Subtraction


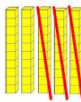

**National Curriculum Requirements:**

- Subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds
- Subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
- Estimate the answer to a calculation and use inverse operations to check answers
- Solve problems, including missing number problems, using number facts, place value, and more complex subtraction

**Key Vocabulary:** take, take away, less, minus, leaves, equal to, between, subtract, how many less, how many fewer, least, count back, how many left?, how much less is\_?, difference between, tens, ones, partition, column, inverse, hundreds, column subtraction, exchange

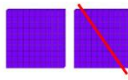
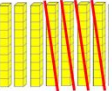
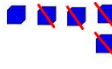
A range of resources should be made available to children to support subtraction. Children continue to use strategies taught in key Stage One (e.g. pictorials, part whole models and number lines) and go onto learning further methods.

Use concrete materials/ manipulatives such as Base 10 or Place Value counters to support the use of column method for subtraction.

hundreds	tens	ones
		

	H	T	O
	1	5	8
-		3	4
	1	2	4


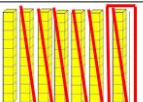
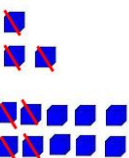
Present subtraction

hundreds	tens	ones
		

	H	T	O
	2	7	5
-	1	4	4
	1	3	1

with regrouping using

concrete materials alongside before moving onto using the formal written method alone.

hundreds	tens	ones
		

	H	T	O
		6	1
-	2	7	3
	1	1	6

10

**Year 3  
Multiplication**

**National Curriculum Requirements:**

- Recall and use multiplication facts for the 3, 4 and 8 multiplication tables
- Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- Solve problems, including missing number problems, involving multiplication, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

**Key Vocabulary:** count, times, groups of, lots of, equal, repeated addition, array. multiply, altogether, how many ...?, column, row, commutative, inverse, product, multiples, short multiplication, digit

A range of resources should be made available to children. Children continue to use strategies taught in Key Stage One (e.g. arrays) and go onto learning further methods.

Use known multiplication knowledge to develop mental methods to work out answers to multiplication tables including multiples of 10.

$$12 \times 4 =$$

$$10 \times 4 = 40$$

$$2 \times 4 = 8$$

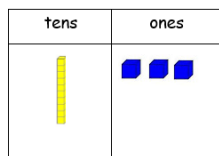
$$40 + 8 = 48$$

$$6 \times 8 = 48$$

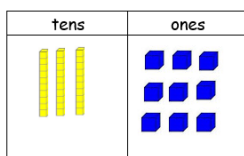
$$6 \times 80 = 480$$

Consolidate the use of repeated addition as a method before moving onto multiplication of two-digit numbers. Use concrete materials/ manipulatives to show the multiplication of the ones and then the tens.

$$13 \times 3 =$$

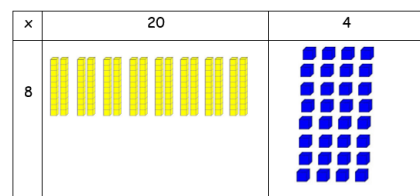


$$13 \times 3 = 39$$



Introduce written methods for multiplication using concrete materials and manipulatives alongside.

$$24 \times 8 =$$



$$24 \times 8 =$$

x	20	4
8	160	32

$$160 + 32 = 192$$

$$24 \times 8 =$$

	H	T	O
		2	4
x			8
	1	9	2
	1	3	

### Year 3 Division

#### National Curriculum Requirements:

- Recall and use division facts for the 3, 4 and 8 multiplication tables
- Write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- Solve problems, including missing number problems, involving division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

**Key Vocabulary:** share, shared, sharing, group, grouping, groups of, lots of, equal, equally, amount, between divide, divided by, division, divided into, array, row, column, product, short division

A range of resources should be made available to children. Children continue to use strategies taught in Key Stage One (e.g. grouping, arrays) and go onto learning further methods.

Use known division knowledge to develop mental methods to work out answers to division questions.

$48 \div 4 =$

$48 \div 8 = 6$

$40 \div 4 = 10$

$480 \div 8 = 60$

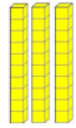

$8 \div 4 = ?$




$10 \div 2 = 5$

Introduce written methods for division using concrete materials and manipulatives alongside as appropriate.

$33 \div 3 = 11$

$33 \div 3 = 11$

tens	ones
	

	1	1
3	3	3

	2	2
4	8	8

#### Year 4 Addition

##### National Curriculum Requirements:

- Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate
- Estimate and use inverse operations to check answers to a calculation
- Solve addition two-step problems in contexts, deciding which operations and methods to use and why

**Key Vocabulary:** more, plus, make, add, altogether, total, equal to, equals, double, most, count on, addition, tens, ones, digit, partition, column, number line, hundreds, column addition, carry, thousands, inverse, operation calculation

Concrete materials/ manipulatives should be made available for children to use alongside written methods.

Use formal written methods for addition

	Th	H	T	O
		8	7	4
+		4	2	3
	1	2	9	7
	1			

	Th	H	T	O
	3	7	1	9
+	2	3	6	5
	6	0	8	4
	1		1	

#### Year 4 Subtraction

##### National Curriculum Requirements:

- Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate
- Estimate and use inverse operations to check answers to a calculation
- Solve subtraction two-step problems in contexts, deciding which operations and methods to use and why

**Key Vocabulary:** take, take away, less, minus, leaves, equal to, between, subtract, how many less, how many fewer, least, count back, how many left?, how much less is\_?, difference between, tens, ones, partition, column, inverse, hundreds, column subtraction, exchange, thousands, inverse, operation, calculation

Use formal written methods for subtraction

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

	Th	H	T	O
	6	1	3	1
	<del>7</del>	3	<del>4</del>	2
-	5	6	3	7
	1	7	0	5

### Year 4 Multiplication

#### National Curriculum Requirements:

- Recall multiplication facts for multiplication tables up to  $12 \times 12$
- Use place value, known and derived facts to multiply mentally, including multiplying by 0 and 1 and multiplying together three 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
- Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as  $n$  objects are connected to  $m$  objects

**Key Vocabulary:** count, times, groups of, lots of, equal, repeated addition, array, multiply, altogether, how many ...?, column, row, commutative, inverse, product, multiples, short multiplication, digit, two-digit, three-digit

Children use written methods for multiplication. Children should secure the skill of multiplying a two-digit number by a single digit number before moving on.

	H	T	O
		3	2
x			9
	2	8	8
	2	1	

	Th	H	T	O
		1	2	8
x				8
	1	0	2	4
	1	2	6	

### Year 4 Division

#### National Curriculum Requirements:

- Recall division facts for multiplication tables up to  $12 \times 12$
- Use place value, known and derived facts to divide mentally, including dividing by 1
- Recognise and use factor pairs and commutativity in mental calculations
- Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as  $n$  objects are connected to  $m$  objects

**Key Vocabulary:** share, shared, sharing, group, grouping, groups of, lots of, equal, equally, amount, between divide, divided by, division, divided into, array, row, column, product, short division, digit, two digit, factor

Children should continue to develop written methods to support division ensuring that they are secure in dividing two-digit numbers before moving onto three digits.

	1	8
		2
3	5	4

	1	4
		2
7	9	8

	1	6
		4
8	1	2
		8

## Year 5 Addition

### National Curriculum Requirements:

- Add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
- Add numbers mentally with increasingly large numbers
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Solve addition multi-step problems in contexts, deciding which operations and methods to use and why

**Key Vocabulary:** more, plus, make, add, altogether, total, equal to, equals, double, most, count on, addition, tens, ones, digit, partition, column, number line, hundreds, column addition, carry, thousands, inverse, operation calculation, ten thousand, round, rounding

Children continue to use a range of methods that have been taught. They use these with growing confidence and accuracy in relation to the year group requirements.

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

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

	Th	H	T	O	.	t	th
	2	5	6	2	.	4	3
+	4	6	2	7	.	3	6
	7	1	8	9	.	7	9
	1						

Children use the same methods when adding decimals ensuring that the decimal point is clear, and the digits are lined up correctly either side.

## Year 5 Subtraction

### National Curriculum Requirements:

- Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction)
- Subtract numbers mentally with increasingly large numbers
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why

**Key Vocabulary:** take, take away, less, minus, leaves, equal to, between, subtract, how many less, how many fewer, least, count back, how many left?, how much less is\_?, difference between, tens, ones, partition, column, inverse, hundreds, column subtraction, exchange, thousands, inverse, operation, calculation, ten thousand, round, rounding

Children continue to use a range of methods that have been taught. They use these with growing confidence and accuracy in relation to the year group requirements.

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

	TTh	Th	H	T	O
	1	1	3	1	
	2	6	4	8	9
-	1	8	3	9	6
	0	8	0	9	3

	Th	H	T	O	.	t	th
			1	1	.		
	6	8	2	4	.	5	6
-	4	6	1	8	.	2	3
	2	2	0	6	.	3	3

Children use the same methods when adding decimals ensuring that the decimal point is clear, and the digits are lined up correctly either side.

## Year 5 Multiplication

### National Curriculum Requirements:

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers
- Establish whether a number up to 100 is prime and recall prime numbers up to 19
- Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers

- Multiply numbers mentally drawing upon known facts
- Multiply whole numbers and those involving decimals by 10, 100 and 1000

**Key Vocabulary:** count, times, groups of, lots of, equal, repeated addition, array, multiply, altogether, how many ...?, column, row, commutative, inverse, product, multiples, short multiplication, digit, two-digit, three-digit, four-digit, prime numbers, composite numbers, long multiplication, whole number, decimals

Children continue to use a range of methods that have been taught in previous year groups. They use these with growing confidence and accuracy in relation to the year group requirements.

Children use long multiplication to support multiplication of larger numbers.

	H	T	O
	1		
		3	2
x		2	4
	1	2	8
+	6	4	0
	7	6	8

	H	T	O
	1	1	
		1	2
x		2	3
		3	7
+	2	5	2
	2	8	9
			8

### Year 5 Division

#### National Curriculum Requirements:

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers
- Establish whether a number up to 100 is prime and recall prime numbers up to 19
- Divide numbers mentally drawing upon known facts
- Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- Divide whole numbers and those involving decimals by 10, 100 and 1000

**Key Vocabulary:** share, shared, sharing, group, grouping, groups of, lots of, equal, equally, amount, between divide, divided by, division, divided into, array, row, column, product, short division, digit, two digit, factor, factor pairs, prime factors, composite numbers, long division, whole number, decimals

Children continue to use a range of methods that have been taught in previous year groups. They use these with growing confidence and accuracy in relation to the year group requirements.

Children use long division to support division of larger numbers.

			2	4							
1	6	3	8	4							
		3	2	0	(16 × 20)						
		0	6	4							
			6	4	(16 × 4)						
			0	0							

			2	4							
		3	8	4							
		0	6	4							
			6	4							
			0	0							
						10					
						20					
						30					
						40					
						50					
									6		16
									12		32
									18		48
									24		64
									30		80

### Year 6 Addition

#### National Curriculum Requirements:

- Perform mental calculations, including with mixed operations and large numbers
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Solve addition multi-step problems in contexts, deciding which operations and methods to use and why solve problems involving addition
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

**Key Vocabulary:** more, plus, make, add, altogether, total, equal to, equals, double, most, count on, addition, tens, ones, digit, partition, column, number line, hundreds, column addition, carry, thousands, inverse, operation calculation, ten thousand, round, rounding, estimate, order of operations

Children continue to use a range of methods that have been taught in previous year groups. They use these with growing confidence and accuracy in relation to the year group requirements.



	TTh	Th	H	T	O	.	†	th
	3	4	5	6	7	.	2	4
+	4	7	9	5	8	.	8	3
	8	2	5	2	6	.	0	7
	1	1	1	1	1			

### Year 6 Subtraction

#### National Curriculum Requirements:

- Perform mental calculations, including with mixed operations and large numbers
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Solve problems involving subtraction
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

**Key Vocabulary:** take, take away, less, minus, leaves, equal to, between, subtract, how many less, how many fewer, least, count back, how many left?, how much less is\_?, difference between, tens, ones, partition, column, inverse, hundreds, column subtraction, exchange, thousands, inverse, operation, calculation, ten thousand, round, rounding, estimate, order of operations

Children continue to use a range of methods that have been taught in previous year groups. They use these with growing confidence and accuracy in relation to the year group requirements.

	TTh	Th	H	T	O	.	†	th
	6	1	5	1				
	<del>7</del>	4	<del>6</del>	6	9	.	4	5
-	5	6	5	7	2	.	3	1
	1	8	0	9	7	.	1	4

### Year 6 Multiplication

#### National Curriculum Requirements:

- Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- Perform mental calculations, including with mixed operations and large numbers
- Identify common factors, common multiples and prime numbers
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Solve problems involving multiplication
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

**Key Vocabulary:** count, times, groups of, lots of, equal, repeated addition, array, multiply, altogether, how many ...?, column, row, commutative, inverse, product, multiples, short multiplication, digit, two-digit, three-digit, four-digit, prime numbers, composite numbers, long multiplication, whole number, decimals, multi-digit, common multiples

Children continue to use a range of methods that have been taught in previous year groups. They use these with growing confidence and accuracy in relation to the year group requirements.

Children use long multiplication to multiply larger numbers. They use the same methods when multiplying decimals ensuring that the decimal point is clear, and the digits are lined up correctly either side.

