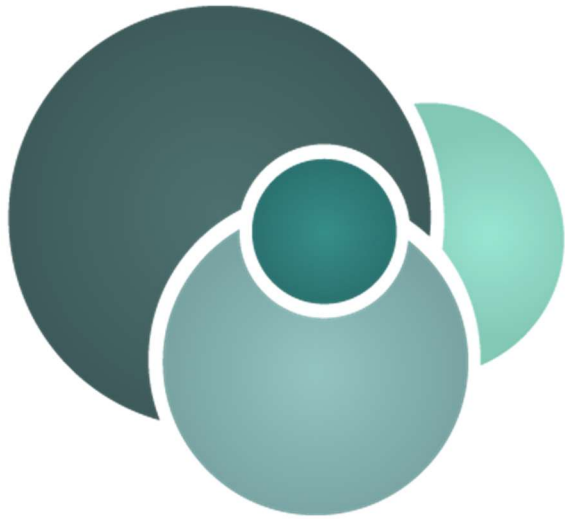


# Butterwick Pinchbeck CofE Primary School

## Mathematics Long Term Plan



White Rose Maths and NCETM Mastering Number is used in Reception, Key Stage One and Key Stage Two to inform planning and ensure detailed coverage of the National Curriculum. The scheme of learning ensures that children become fluent in the fundamentals of mathematics, reason mathematically, and can solve problems by applying their mathematics. There is flexibility within each year group to adjust the time spent on each unit, ensuring that all pupils' needs are met.

# Reception (White Rose)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Getting to know you		<b>Match, sort and compare</b> FREE TRIAL <small>Free trial</small> VIEW	<b>Talk about measure and patterns</b> VIEW	<b>It's me 1, 2, 3</b> VIEW			<b>Circles and triangles</b> VIEW	<b>1, 2, 3, 4, 5</b> VIEW		<b>Shapes with 4 sides</b> VIEW	
Spring	<b>Alive in 5</b> VIEW	<b>Mass and capacity</b> VIEW	<b>Growing 6, 7, 8</b> VIEW	<b>Length, height and time</b> VIEW	<b>Building 9 and 10</b> VIEW	<b>Explore 3-D shapes</b> VIEW						
Summer	<b>To 20 and beyond</b> VIEW	<b>How many now?</b> VIEW	<b>Manipulate, compose and decompose</b> VIEW	<b>Sharing and grouping</b> VIEW	<b>Visualise, build and map</b> VIEW	<b>Make connections</b> VIEW	<b>Consolidation</b>					

# Reception (Mastering Number)

Term 1	Term 2	Term 3
<p>Pupils will build on previous experiences of number from their home and nursery environments, and further develop their subitising and counting skills. They will explore the composition of numbers within 5. They will begin to compare sets of objects and use the language of comparison.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• identify when a set can be subitised and when counting is needed</li> <li>• subitise different arrangements, both unstructured and structured, including using the Hungarian number frame</li> <li>• make different arrangements of numbers within 5 and talk about what they can see, to develop their conceptual subitising skills</li> <li>• spot smaller numbers 'hiding' inside larger numbers</li> </ul>	<p>Pupils will continue to develop their subitising and counting skills and explore the composition of numbers within and beyond 5. They will begin to identify when two sets are equal or unequal and connect two equal groups to doubles. They will begin to connect quantities to numerals.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals</li> <li>• begin to identify missing parts for numbers within 5</li> <li>• explore the structure of the numbers 6 and 7 as '5 and a bit' and connect this to finger patterns and the Hungarian number frame</li> <li>• focus on equal and unequal groups when comparing numbers</li> </ul>	<p>Pupils will consolidate their counting skills, counting to larger numbers and developing a wider range of counting strategies. They will secure knowledge of number facts through varied practice.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• continue to develop their counting skills, counting larger sets as well as counting actions and sounds</li> <li>• explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame</li> <li>• compare quantities and numbers, including sets of objects which have different attributes</li> <li>• continue to develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2</li> </ul>
<ul style="list-style-type: none"> <li>• connect quantities and numbers to finger patterns and explore different ways of representing numbers on their fingers</li> <li>• hear and join in with the counting sequence, and connect this to the 'staircase' pattern of the counting numbers, seeing that each number is made of one more than the previous number</li> <li>• develop counting skills and knowledge, including: that the last number in the count tells us 'how many' (cardinality); to be accurate in counting, each thing must be counted once and once only and in any order; the need for 1:1 correspondence; understanding that anything can be counted, including actions and sounds</li> <li>• compare sets of objects by matching</li> <li>• begin to develop the language of 'whole' when talking about objects which have parts</li> </ul>	<ul style="list-style-type: none"> <li>• understand that two equal groups can be called a 'double' and connect this to finger patterns</li> <li>• sort odd and even numbers according to their 'shape'</li> <li>• continue to develop their understanding of the counting sequence and link cardinality and ordinality through the 'staircase' pattern</li> <li>• order numbers and play track games</li> <li>• join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers</li> </ul>	<ul style="list-style-type: none"> <li>• begin to generalise about 'one more than' and 'one less than' numbers within 10</li> <li>• continue to identify when sets can be subitised and when counting is necessary</li> <li>• develop conceptual subitising skills including when using a rekenrek</li> </ul>

# Year 1 (White Rose)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	<p>Number</p> <p><b>Place value</b> (within 10) FREE TRIAL</p> <p>VIEW</p>					<p>Number</p> <p><b>Addition and subtraction</b> (within 10)</p> <p>VIEW</p>					<p>Geometry Shape</p> <p>VIEW</p>	<p>Consolidation</p>
Spring	<p>Number</p> <p><b>Place value</b> (within 20)</p> <p>VIEW</p>	<p>Number</p> <p><b>Addition and subtraction</b> (within 20)</p> <p>VIEW</p>			<p>Number</p> <p><b>Place value</b> (within 50)</p> <p>VIEW</p>	<p>Measurement</p> <p><b>Length and height</b></p> <p>VIEW</p>	<p>Measurement</p> <p><b>Mass and volume</b></p> <p>VIEW</p>					
Summer	<p>Number</p> <p><b>Multiplication and division</b></p> <p>VIEW</p>		<p>Number</p> <p><b>Fractions</b></p> <p>VIEW</p>		<p>Geometry Position and direction</p> <p>VIEW</p>	<p>Number</p> <p><b>Place value</b> (within 100)</p> <p>VIEW</p>	<p>Measurement Money</p> <p>VIEW</p>	<p>Measurement</p> <p><b>Time</b></p> <p>VIEW</p>		<p>Consolidation</p>		

# Year 1 (Mastering Number)

Term 1	Term 2	Term 3
<p>Pupils will have an opportunity to consolidate the Early Learning Goals and continue to explore the composition of numbers within 10, and the position of these numbers in the linear number system.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• subitise within 5, including when using a rekenrek, and re-cap the composition of 5</li> <li>• develop their understanding of the numbers 6 to 9 using the '5 and a bit' structure</li> <li>• compare numbers within 10 and use precise mathematical language when doing so</li> <li>• re-cap the order of numbers within 10 and connect this to '1 more' and '1 less' than a given number</li> <li>• explore the structure of even numbers (including that even numbers can be composed by doubling any number, and can be composed of 2s)</li> <li>• explore the structure of the odd numbers as being composed of 2s and 1 more</li> <li>• explore the composition of each of the numbers 6, 8, and 10</li> <li>• explore number tracks and number lines and identify the differences between them</li> </ul>	<p>Pupils will continue to explore the composition of numbers within 10 and explore addition and subtraction structures and the related language (without the use of symbols).</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• explore the composition of each of the numbers 7 and 9</li> <li>• explore the composition of odd and even numbers, seeing that even numbers can be made of two odd or two even parts, and that odd numbers can be composed of one odd part and one even part</li> <li>• identify the number that is two more or two less than a given odd or even number, identifying that two more/ less than an odd number is the next/ previous odd number, and two more/ less than an even number is the next/ previous even number</li> <li>• explore the aggregation and partitioning structures of addition and subtraction through systematically partitioning and re-combining numbers within 10 and connecting this to the part-part-whole diagram, including using the language of parts and wholes</li> <li>• explore the augmentation and reduction structures of addition and reduction using number stories, including introducing the 'first, then, now' language structure</li> </ul>	<p>Pupils will explore the composition of numbers within 20 and their position in the linear number system. They will connect addition and subtraction expressions and equations to 'number stories'.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• explore the composition of the numbers 11 to 19 as '10 and a bit' and compare numbers within 20</li> <li>• connect the composition of the numbers 11 to 19 to their position in the linear number system, including identifying the midpoints of 5, 10 and 15</li> <li>• compare numbers within 20</li> <li>• understand how addition and subtraction equations can represent previously explored structures of addition and subtraction (aggregation/ partitioning/ augmentation/ reduction)</li> <li>• practise retrieving previously taught facts and reason about these</li> </ul>
<p>This term will build and consolidate the Early Learning Goals and support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>• 1AS-1</li> <li>• 1NF-1</li> <li>• 1NPV-2</li> </ul>	<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>• 1AS-1</li> <li>• 1NF-1</li> </ul>	<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>1AS-2</li> <li>1NF-1</li> <li>1NPV-2</li> </ul>

# Year 2 (White Rose)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	<p>Number</p> <h2>Place value</h2> <p>FREE TRIAL</p> <p>VIEW</p>				<p>Number</p> <h2>Addition and subtraction</h2> <p>VIEW</p>				<p>Geometry</p> <h2>Shape</h2> <p>VIEW</p>			
Spring	<p>Measurement</p> <h2>Money</h2> <p>VIEW</p>	<p>Number</p> <h2>Multiplication and division</h2> <p>VIEW</p>				<p>Measurement</p> <h2>Length and height</h2> <p>VIEW</p>	<p>Measurement</p> <h2>Mass, capacity and temperature</h2> <p>VIEW</p>					
Summer	<p>Number</p> <h2>Fractions</h2> <p>VIEW</p>			<p>Measurement</p> <h2>Time</h2> <p>VIEW</p>	<h2>Statistics</h2> <p>VIEW</p>		<p>Geometry</p> <h2>Position and direction</h2> <p>VIEW</p>	<p>Consolidation</p>				

## Year 2 (Mastering Number)

Term 1	Term 2	Term 3
<p>Pupils will have an opportunity to consolidate their understanding and recall of number bonds within 10; they will re-cap the composition of the numbers 11 to 20 and reason about their position within the linear number system.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>review the composition of the numbers 6 to 9 as '5 and a bit'</li> <li>compare numbers using the language of comparison and use the symbols <math>&lt;</math> <math>&gt;</math> <math>=</math></li> <li>review the structure of even numbers (including exploring how even numbers can be composed of two odd parts or two even parts) and the composition of each of 6, 8 and 10</li> <li>review the structure of odd numbers (including exploring how odd numbers can be composed of one odd part and one even part) and the composition of each of 7 and 9</li> </ul> <ul style="list-style-type: none"> <li>consolidate their understanding of the numbers 10 and 20 as '10 and a bit'</li> <li>consolidate their understanding of the linear number system to 20 and reason about midpoints</li> </ul>	<p>Pupils will have an opportunity to use their knowledge of the composition of numbers within 10 to calculate within 20; they will explore the links between the numbers in the linear number system within 10 to numbers within 100, focusing on multiples of 10 and the midpoint of 50.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>explore how the numbers 6 to 9 can be doubled using the '5 and a bit' and '10 and a bit' structure</li> <li>use doubles to calculate near doubles</li> <li>use bonds of 10 to reason about bonds of 20, in which the given addend is greater than 10</li> <li>use known number bonds within 10 to calculate within 20, working within the 10-boundary</li> </ul> <ul style="list-style-type: none"> <li>use their knowledge of bonds of 10 to find three addends that sum to 10</li> <li>use their knowledge of the composition of numbers within 20 to add and subtract across the 10-boundary</li> <li>use their understanding of the linear number system to 10 to position multiples of 10 on a 0—100 number line and reason about midpoints</li> </ul>	<p>Pupils will have further opportunities to use their knowledge of the composition of numbers within 10 to calculate within 20 and to reason about equations and inequalities.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>continue to explore a range of strategies to subtract across the 10-boundary</li> <li>review bonds of 20 in which the given addend is greater than 10, and reason about bonds of 20, in which the given addend is less than 10</li> <li>practise previously explored strategies to support their reasoning about inequalities and equations</li> <li>review doubles and near doubles and transform additions in which two addends are adjacent odd/ even numbers into doubles</li> </ul> <ul style="list-style-type: none"> <li>consolidate previously taught facts and strategies through continued, varied practice</li> </ul>
<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>1NPV-2</li> <li>2NF-1</li> </ul>	<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>2NPV-2</li> <li>2NF-1</li> <li>2AS-1</li> </ul>	<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>2NF-1</li> <li>2AS-1</li> <li>2AS-2</li> </ul>

# Year 3 (White Rose)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	<p>Number</p> <h2>Place value</h2> <p>FREE TRIAL</p> <p><a href="#">VIEW</a></p>			<p>Number</p> <h2>Addition and subtraction</h2> <p><a href="#">VIEW</a></p>				<p>Number</p> <h2>Multiplication and division A</h2> <p><a href="#">VIEW</a></p>				
Spring	<p>Number</p> <h2>Multiplication and division B</h2> <p><a href="#">VIEW</a></p>			<p>Measurement</p> <h2>Length and perimeter</h2> <p><a href="#">VIEW</a></p>		<p>Number</p> <h2>Fractions A</h2> <p><a href="#">VIEW</a></p>		<p>Measurement</p> <h2>Mass and capacity</h2> <p><a href="#">VIEW</a></p>				
Summer	<p>Number</p> <h2>Fractions B</h2> <p><a href="#">VIEW</a></p>		<p>Measurement</p> <h2>Money</h2> <p><a href="#">VIEW</a></p>		<p>Measurement</p> <h2>Time</h2> <p><a href="#">VIEW</a></p>			<p>Geometry</p> <h2>Shape</h2> <p><a href="#">VIEW</a></p>		<h2>Statistics</h2> <p><a href="#">VIEW</a></p>		<p>Consolidation</p>

## Year 3 (Mastering Number)

### Resources provided

Eight blocks of materials are provided. Those shown in bold relate to the relevant ready-to-progress (RtP) criteria and should be used with the whole class.

Block	Content	No. of sessions*	Ready to Progress Criteria
1	<b>Securing understanding of the additive relationship</b>	12	<b>3AS–3</b> Manipulate the additive relationship
2	Composition within 5 and related facts	12	<b>2NF–1</b> Secure fluency in addition and subtraction facts within 10, through continued practice.
3	Structures within 10: odd/ even; 5 and a bit, and related facts	10	
4	Composition 6 to 10 and related facts	23	
5	Alternative strategies for addition and subtraction within 10	10	
6	<b>Addition strategies across 10 (doubles and near doubles)</b>	15	<b>3NF–1</b> Secure fluency in addition and subtraction facts that bridge 10, through continued practice.
7	<b>Addition strategies across 10</b>	12	
8	<b>Subtraction strategies across 10</b>	15	

# Year 4 (White Rose)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number <b>Place value</b> FREE TRIAL  VIEW			Free trial	Number <b>Addition and subtraction</b>  VIEW			Measurement Area  VIEW	Number <b>Multiplication and division A</b>  VIEW			Consolidation
Spring	Number <b>Multiplication and division B</b>  VIEW		Measurement <b>Length and perimeter</b>  VIEW		Number <b>Fractions</b>  VIEW			Number <b>Decimals A</b>  VIEW				
Summer	Number <b>Decimals B</b>  VIEW	Measurement <b>Money</b>  VIEW	Measurement <b>Time</b>  VIEW	Consolidation	Geometry <b>Shape</b>  VIEW		Statistics  VIEW	Geometry <b>Position and direction</b>  VIEW				



# Year 5 (White Rose)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	<p>Number</p> <p><b>Place value</b></p> <p>FREE TRIAL</p> <p><a href="#">VIEW</a></p>		<p>Number</p> <p><b>Addition and subtraction</b></p> <p><a href="#">VIEW</a></p>			<p>Number</p> <p><b>Multiplication and division A</b></p> <p><a href="#">VIEW</a></p>			<p>Number</p> <p><b>Fractions A</b></p> <p><a href="#">VIEW</a></p>			
Spring	<p>Number</p> <p><b>Multiplication and division B</b></p> <p><a href="#">VIEW</a></p>		<p>Number</p> <p><b>Fractions B</b></p> <p><a href="#">VIEW</a></p>			<p>Number</p> <p><b>Decimals and percentages</b></p> <p><a href="#">VIEW</a></p>		<p>Measurement</p> <p><b>Perimeter and area</b></p> <p><a href="#">VIEW</a></p>	<p><b>Statistics</b></p> <p><a href="#">VIEW</a></p>			
Summer	<p>Geometry</p> <p><b>Shape</b></p> <p><a href="#">VIEW</a></p>		<p>Geometry</p> <p><b>Position and direction</b></p> <p><a href="#">VIEW</a></p>			<p>Number</p> <p><b>Decimals</b></p> <p><a href="#">VIEW</a></p>		<p>Number</p> <p><b>Negative numbers</b></p> <p><a href="#">VIEW</a></p>	<p>Measurement</p> <p><b>Converting units</b></p> <p><a href="#">VIEW</a></p>		<p>Measurement</p> <p><b>Volume</b></p> <p><a href="#">VIEW</a></p>	

Autumn term  
Spring term  
Summer term

# Year 5



# Year 5 (Mastering Number)

Apply scaling by 10, 100,  $\frac{1}{10}$  or  $\frac{1}{100}$  to known facts.

$$9 \times 12 = 108$$

$$90 \times 12 = 1080$$

$$1080 \div 12 = 90$$

$$1080 \div 90 = 12$$

Multiples of 4	NOT multiples of 4
92 ✓	91 ✗
82 ✓	80 ✗
100 ✓	104 ✓
402 ✓	799 ✗
43 ✗	74 ✓
967,300 ✓	859,403 ✓

$$38 \div 3 = 12 \text{ r } 2$$

$$38 \div 3 = 12 \frac{2}{3}$$

Understand and use divisibility rules to include sorting and classifying improper fractions into those that give a whole number quotient and those that do not.

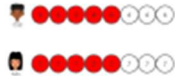
Understand how the product changes when one of the factors increases or decreases by 1.

Explore contexts where you can use either a multiplication and addition equation or a division equation with a remainder.

$$38 = 3 \times 12 + 2$$

$$38 \div 3 = 12 \text{ r } 2$$

$$38 \div 12 = 3 \text{ r } 2$$



Explore multiplicative composition.

A  $14 \times 3 = 2 \times (7 \times 3) = \square$

B  $14 \times 3 = (2 \times 3) \times 7 = \square$

Explore a constant (functional) relationship using a ratio table.

The number of legs is ALWAYS 8 times the number of spiders.

Number of spiders	Number of legs
1	8

Find a unit fraction of a number and connect this to partitive and quotitive division.

120cm  $\times \frac{1}{2} = \square$

120cm  $\div 2 = \square$

$$5 \times \frac{1}{5} = \frac{5}{5} = 1$$

$$10 \times \frac{1}{5} = \frac{10}{5} = 2$$


Connecting multiplying by  $\frac{1}{10}$  to dividing by 10 and multiplying by  $\frac{1}{100}$  to dividing by 100.

When a number is multiplied by 1 it stays the same.

$$5 \times 5 = 25$$

Number of rows	Number of boxes
1	10
5	50

80kg is 10 times 8kg.

Practise facts: where the factors are the same, resulting in a product that is a square number; where 1 is a factor; where 10 is a factor.

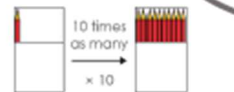
Explore a scalar relationship using a ratio table and when multiplying by 10 or 100.

Make connections between multiplication and division contexts and equations.

Recap when 2 is a factor.



The value of the product in a multiplication equation becomes the value of the dividend in the corresponding division equation.



To multiply a whole number by 10, place a zero after the final digit of that number.

$$2 \times 9 = 18$$

$$18 \div 2 = 9$$

$$18 \div 9 = 2$$

# Year 6 (White Rose)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	<p>Number</p> <p><b>Place value</b></p> <p>FREE TRIAL</p> <p><a href="#">VIEW</a></p>	<p>Free trial</p>	<p>Number</p> <p><b>Addition, subtraction, multiplication and division</b></p> <p><a href="#">VIEW</a></p>				<p>Number</p> <p><b>Fractions A</b></p> <p><a href="#">VIEW</a></p>		<p>Number</p> <p><b>Fractions B</b></p> <p><a href="#">VIEW</a></p>		<p>Measurement</p> <p><b>Converting units</b></p> <p><a href="#">VIEW</a></p>	
Spring	<p>Number</p> <p><b>Ratio</b></p> <p><a href="#">VIEW</a></p>	<p>Number</p> <p><b>Algebra</b></p> <p><a href="#">VIEW</a></p>	<p>Number</p> <p><b>Decimals</b></p> <p><a href="#">VIEW</a></p>	<p>Number</p> <p><b>Fractions, decimals and percentages</b></p> <p><a href="#">VIEW</a></p>	<p>Measurement</p> <p><b>Area, perimeter and volume</b></p> <p><a href="#">VIEW</a></p>	<p><b>Statistics</b></p> <p><a href="#">VIEW</a></p>						
Summer	<p>Geometry</p> <p><b>Shape</b></p> <p><a href="#">VIEW</a></p>	<p>Geometry</p> <p><b>Position and direction</b></p> <p><a href="#">VIEW</a></p>	<p><b>Themed projects, consolidation and problem solving</b></p> <p><a href="#">VIEW</a></p>									