Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Autumn Term - Curriculum Focus		Spring Term - Curriculum Focus		Summer Term - Curriculum Focus	
EYFS	WHITE ROSE **Getting to know you (Baseline)** Match, Sort and Compare Step 1 Match objects Step 2 Match pictures and objects Step 3 Identify a set Step 4 Sort objects or a type Step 5 Exploring sorting techniques Step 6 Create sorting rules Step 7 Compare amounts **Simon Sock** **The Button Box** Talk About Measure and Patterns Step 1 Compare size Step 2 Compare mass Step 3 Compare capacity Step 4 Explore simple patterns Step 5 Copy and continue simple patterns Step 6 Create simple patterns **A Squash and a Squeeze** **Where's My Teddy?** **My Mum and Dad Make Me Laugh**	WHITE ROSE It's Me 1,2,3! Step 1 Find 1,2 and 3 Step 2 Subitise 1,2 and 3 Step 3 Represent 1,2 and 3 Step 4 1 more Step 5 1 less Step 6 Composition of 1, 2 and 3 **Anno's Counting Book** Circles and Triangles Step 1 Identify and name circles and triangles Step 2 Compare circles and triangles Step 3 Shapes in the environment Step 4 Describe position **A Perfect Fit** **Mr Happy** **Mr Rush** 1,2,3,4,5 Step 1 Find 4 and 5 Step 2 Subitise 4 and 5 Step 3 Represent 4 and 5 Step 4 1 more Step 5 1 less	WHITE ROSE Alive in 5! Step 1 Introducing 0 Step 2 Find 0 to 5 Step 3 Subitise 0 to 5 Step 4 Represent 0 to 5 Step 5 1 more Step 6 1 less Step 7 Composition Step 8 Conceptual subitising to 5 Mass and Capacity Step 1 Compare mass Step 2 Find a balance Step 3 Explore capacity Step 4 Compare capacity Growing 6,7,8 Step 1 Find 6,7 and 8 Step 2 Represent 6,7 and 8 Step 3 1 more Step 4 1 less Step 5 Composition of 6,7 and 8 Step 6 Make pairs – odd and even Step 7 Double to 8 (find a double) Step 8 Double to 8 (make a double) Step 9 Combine two groups	WHITE ROSE Length, Height and Time Step 5 Talk about time Step 6 Order and sequence time Building 9 and 10 Step 1 Find 9 and 10 Step 2 Compare numbers to 10 Step 3 Represent 9 and 10 Step 4 Conceptual subitising to 10 Step 5 1 more Step 6 1 less Step 7 Composition to 10 Step 8 Bonds to 10 (2 parts) Step 9 Make arrangements of 10 Step 10 Bonds to 10 (3 parts) Step 11 Doubles to 10 (find a double) Step 12 Doubles to 10 (make a double) Step 13 Explore even and odd **Anno's Counting Book** **10 Black Dots** Explore 3D Shapes	WHITE ROSE How Many Now? Step 1 Add More Step 2 How many did I add? Step 3 Take away Step 4 How many did I take away? **Pete the Cat's Missing Cupcakes** Manipulate, Compose and Decompose Step 1 Select shapes for a purpose Step 2 Rotate shapes Step 3 Manipulate shapes Step 4 Explain shape arrangements Step 5 Compose shapes Step 6 Decompose shapes Step 7 Copy 2-D shape pictures Step 8 Find 2-D shapes within 3-D shapes **The Big Box of Shapes** **The Perfect Fit** **Grandfather Tang** Sharing and Grouping Step 1 Explore sharing	WHITE ROSE To 20 and beyond Step 1 Build numbers beyond 10 (10-13) Step 2 Continue patterns beyond 10 (10-13) Step 3 Build numbers beyond 10 (14-20) Step 4 Continue patterns beyond 10 (14-20) Step 5 Verbal counting beyond 20 Step 6 Verbal counting patterns **1 Moose, 20 Mice** Visualise, Build and Map Step 1 Identify units of repeating patterns Step 2 Create own pattern rules Step 3 Explore own pattern rules Step 4 Replicate and build scenes and constructions Step 5 Visualise from different positions Step 6 Describe positions

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Pattern Fish It's Me 1,2,3! Step 1 Find 1,2 and 3 Step 2 Subitise 1,2 and 3 Step 3 Represent 1,2 and 3 Step 4 1 more Step 5 1 less Step 6 Composition of 1, 2 and 3 **Anno's Counting Book**	Step 6 Composition of 4 and 5 Step 7 Composition of 1-5 **Anno's Counting Book** **Pete the Cat and his Four Groovy Buttons** Shapes with 4 Sides Step 1 Identify and name shapes with 4 sides Step 2 Combine shapes with 4 sides Step 3 Shapes in the environment Step 4 My day and night	Step 10 Conceptual subitising **Anno's Counting Book** Length, Height and Time Step 1 Explore length Step 2 Compare length Step 3 Explore height Step 4 Compare height	Step 1 Recognise and name 3D shapes Step 2 Find 2D shapes within 3D shapes Step 3 Use 3D shapes for tasks Step 4 3D shapes in the environment Step 5 Identify more complex patterns Step 6 Copy and continue patterns Step 7 Patterns in the environment	Step 2 Sharing Step 3 Explore grouping Step 4 Grouping Step 5 Even and odd sharing Step 6 Play with and build doubles	Step 7 Give instructions to build Step 8 Explore mapping Step 9 Represent maps with models Step 10 Create own maps from familiar places Step 11 Create own maps and plans from story situations Make Connections Step 1 Deepen understanding Step 2 Patterns and relationships **How Many Legs?** **Mr Gumpy's Outing**
Mathematics Mastering Number NCETM (see educational programmes for details)	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. **Pupils will:** • identify when a set can be subitised and when counting is needed • subitise different arrangements, both unstructured and structured, including using the Hungarian number frame • make different arrangements of numbers within 5 and talk about what they can see, to develop their conceptual subitising skills • spot smaller numbers 'hiding' inside larger numbers connect quantities and numbers to finger patterns and explore different ways of representing numbers on their fingers • 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 • 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;		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. **Pupils will:** • continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals • begin to identify missing parts for numbers within 5 • 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 • focus on equal and unequal groups when comparing numbers • understand that two equal groups can be called a 'double' and connect this to finger patterns • sort odd and even numbers according to their 'shape' • continue to develop their understanding of the counting sequence and link cardinality and ordinality through the 'staircase' pattern • order numbers and play track games • join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers		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. **Pupils will:** • continue to develop their counting skills, counting larger sets as well as counting actions and sounds • explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame • compare quantities and numbers, including sets of objects which have different attributes • 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 • begin to generalise about 'one more than' and 'one less than' numbers within 10 • continue to identify when sets can be subitised and when counting is necessary • develop conceptual subitising skills including when using a rekenrek	

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	understanding that anything can be counted, including actions and sounds • compare sets of objects by matching • begin to develop the language of 'whole' when talking about objects which have parts		
Y1	WHITE ROSE Number: Place Value (within 10) Step 1 Sort objects Step 2 Count objects Step 3 Count objects from a larger group Step 4 Represent objects Step 5 Recognise numbers as words Step 6 Count on from any number Step 7 1 more Step 8 Count backwards within 10 Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Step 9 1 less Step 10 Compare groups by matching Step 11 Fewer, more, same Step 12 Less than, greater than, equal to Step 13 Compare numbers Step 14 Order objects and numbers Step 15 The number line NATIONAL CURRICULUM LINKS: **Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number.** **Compare numbers using and = signs.** **Read and write numbers from 1 to 20 in numerals and words.** Number: Addition and Subtraction (within 10) Step 1 Introduce parts and wholes	WHITE ROSE Number: Place Value (within 20) Step 1 Count within 20 Step 2 Understand 10 Step 3 Understand 11, 12 and 13 Step 4 Understand 14, 15 and 16 Step 5 Understand 17, 18 and 19 Step 6 Understand 20 Step 7 1 more and 1 less Step 8 The number line to 20 Step 9 Use a number line to 20 Step 10 Estimate on a number line to 20 Step 11 Compare numbers to 20 Step 12 Order numbers to 20 NATIONAL CURRICULUM LINKS: **Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number.** **Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.** **Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number.** **Read and write numbers from 1 to 20 in numerals and words.** **Given a number, identify 1 more and 1 less.** Number: Addition and Subtraction (with 20)	WHITE ROSE Number: Multiplication and Division Step 1 Count in 2s Step 2 Count in 10s Step 3 Count in 5s Step 4 Recognise equal groups Step 5 Add equal groups Step 6 Make arrays Step 7 Make doubles Step 8 Make equal groups – grouping Step 9 Make equal groups – sharing NATIONAL CURRICULUM LINKS: **Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s.** **Solve one-step problems involving multiplication and division by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.** Number: Fractions Step 1 Recognise a half of an object or a shape Step 2 Find a half of an object or a shape Step 3 Recognise a half of a quantity Step 4 Find a half of a quantity Step 5 Recognise a quarter of an object or a shape Step 6 Find a quarter of an object or a shape Step 7 Recognise a quarter of a quantity Step 8 Find a quarter of a quantity NATIONAL CURRICULUM LINKS: **Recognise, find and name a half as one of two equal parts of an object, shape or quantity.**

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 2 Part-whole model Step 3 Write number sentences Step 4 Fact families – addition facts Step 5 Number bonds within 10 Step 6 Systematic number bonds within 10 Step 7 Number bonds to 10 Step 8 Addition – add together Step 9 Addition – add more Step 10 Addition problems Step 11 Find a part Step 12 Subtraction – find a part Step 13 Fact families – the eight facts Step 14 Subtraction – take away/cross out (How many left?) Step 15 Take away (How many left?) Step 16 Subtraction on a number line Step 17 Add or subtract 1 or 2 NATIONAL CURRICULUM LINKS: **Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer).** **Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.** **Represent and use number bonds and related subtraction facts within 20.** **Add and subtract 1-digit and 2-digit numbers to 20, including zero.** Geometry: Shape Step 1 Recognise and name 3-D shapes Step 2 Sort 3-D shapes	Step 1 Add by counting on within 20 Step 2 Add ones using number bonds Step 3 Find and make number bonds to 20 Step 4 Doubles Step 5 Near doubles Step 6 Subtract ones using number bonds Step 7 Subtraction – counting back Step 8 Subtraction – finding the difference Step 9 Related facts Step 10 Missing number problems NATIONAL CURRICULUM LINKS: **Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.** **Add and subtract 1-digit and 2-digit numbers to 20, including zero.** **Represent and use number bonds and related subtraction facts within 20.** **Add and subtract 1-digit and 2-digit numbers to 20, including zero.** **Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? – 9.** Number: Place Value (within 50) Step 1: Count from 20 to 50 Step 2: 20, 30, 40 and 50 Step 3: Count by making groups of tens Step 4: Groups of tens and ones Step 5: Partition into tens and ones Step 6: The number line to 50	**Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.** Geometry: Position and Direction Step 1 Describe turns Step 2 Describe position – left and right Step 3 Describe position – forwards and backwards Step 4 Describe position – above and below Step 5 Ordinal numbers NATIONAL CURRICULUM LINKS: **Describe position, direction and movement, including whole, half, quarter and three-quarter turns.** **Use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside (non-statutory guidance).** **Practise counting (1, 2, 3…), ordering (for example, 1st, 2nd, 3rd …) (non-statutory guidance).** Number: Place Value (within 100) Step 1 Count from 50 to 100 Step 2 Tens to 100 Step 3 Partition into tens and Step 4 The number line to 100 Step 5 1 more, 1 less Step 6 Compare numbers with the same number of tens Step 7 Compare any two numbers

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 3 Recognise and name 2-D shapes Step 4 Sort 2-D shapes Step 5 Patterns with 2-D and 3-D shapes NATIONAL CURRICULUM LINKS: Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles]; 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	Step 7: Estimate on a number line to 50 Step 8: 1 more, 1 less NATIONAL CURRICULUM LINKS: Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. Given a number, identify 1 more and 1 less Measurement: Length and Height Step 1 Compare lengths and heights Step 2 Measure length using objects Step 3 Measure length in centimetres NATIONAL CURRICULUM LINKS: Compare, describe and solve practical problems for: lengths and height; mass/weight; capacity and volume; time. Measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time. Measurement: Mass and Volume Step 1 Heavier and lighter Step 2 Measure mass Step 3 Compare mass Step 4 Full and empty Step 5 Compare volume Step 6 Measure capacity	NATIONAL CURRICULUM LINKS: Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Measurement: Money Step 1 Unitising Step 2 Recognise coins Step 3 Recognise notes Step 4 Count in coins NATIONAL CURRICULUM LINKS: Recognise and know the value of different denominations of coins and notes. Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. Measurement: Time Step 1 Before and after Step 2 Days of the week Step 3 Months of the year Step 4 Hours, minutes and seconds Step 5 Tell the time to the hour Step 6 Tell the time to the half hour NATIONAL CURRICULUM LINKS:

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

		Step 7 Compare capacity <u>NATIONAL CURRICULUM LINKS:</u> Compare, describe and solve practical problems for: lengths and heights; mass/weight; capacity and volume; time. Measure and begin to record the following: lengths and heights; mass/weights; capacity and volume; time.	Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening). Recognise and use language relating to dates, including days of the week, weeks, months and years. Compare, describe and solve practical problems for time. Measure and begin to record time (hours, minutes, seconds). Tell the time to the hour and half past the hour and draw the hands on a clockface to show these times.
Mathematics Mastering Number NCETM	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. **Pupils will:** • subitise within 5, including when using a rekenrek, and re-cap the composition of 5 • develop their understanding of the numbers 6 to 9 using the '5 and a bit' structure • compare numbers within 10 and use precise mathematical language when doing so • re-cap the order of numbers within 10 and connect this to '1 more' and '1 less' than a given number explore the structure of even numbers (including that even numbers can be composed by doubling any number, and can be composed of 2s) • explore the structure of the odd numbers as being composed of 2s and 1 more • explore the composition of each of the numbers 6, 8, and 10 • explore number tracks and number lines and identify the differences between them This term will build and consolidate the Early Learning Goals and support the teaching and consolidation of the following RtP criteria: • 1AS-1 • 1NF-1	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). **Pupils will:** • explore the composition of each of the numbers 7 and 9 • 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 • 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 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 • explore the augmentation and reduction structures of addition and reduction using number stories, including introducing the 'first, then, now' language structure This term will particularly support the teaching and consolidation of the following RtP criteria: • 1AS-1 • 1NF-1	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'). **Pupils will:** • explore the composition of the numbers 11 to 19 as '10 and a bit' and compare numbers within 20 • 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 • compare numbers within 20 • understand how addition and subtraction equations can represent previously explored structures of addition and subtraction (aggregation/ partitioning/ augmentation/ reduction) practise retrieving previously taught facts and reason about these This term will particularly support the teaching and consolidation of the following RtP criteria: 1AS-2 1NF-1 1NPV-2

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	• 1NPV-2		
Y2	WHITEROSE Number: Place Value Step 1 Numbers to 20 Step 2 Count objects to 100 by making 10s Step 3 Recognise tens and ones Step 4 Use a place value chart Step 5 Partition numbers to 100 Step 6 Write numbers to 100 in words Step 7 Flexibly partition numbers to 100 Step 8 Write numbers to 100 in expanded form Step 9 10s on the number line to 100 Step 10 10s and 1s on the number line to 100 Step 11 Estimate numbers on a number line Step 12 Compare objects Step 13 Compare numbers Step 14 Order objects and numbers Step 15 Count in 2s, 5s and 10s Step 16 Count in 3s NATIONAL CURRICULUM LINKS: **Read and write numbers from 1 to 20 in numerals and words (Y1).** **Read and write numbers to at least 100 in numerals and in words.** **Identify, represent and estimate numbers using different representations, including the number line.** **Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward.**	WHITEROSE Measurement: Money Step 1 Count money – pence Step 2 Count money – pounds (notes and coins) Step 3 Count money – pounds and pence Step 4 Choose notes and coins Step 5 Make the same amount Step 6 Compare amounts of money Step 7 Calculate with money Step 8 Make a pound Step 9 Find change Step 10 Two-step problems NATIONAL CURRICULUM LINKS: **Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.** **Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change** Number: Multiplication and Division Step 1 Recognise equal groups Step 2 Make equal groups Step 3 Add equal groups Step 4 Introduce the multiplication symbol Step 5 Multiplication sentences Step 6 Use arrays Step 7 Make equal groups – grouping Step 8 Make equal groups – sharing Step 9 The 2 times-table Step 10 Divide by 2 Step 11 Doubling and halving	WHITEROSE Number: Fractions Step 1 Introduction to parts and whole Step 2 Equal and unequal parts Step 3 Recognise a half Step 4 Find a half Step 5 Recognise a quarter Step 6 Find a quarter Step 7 Recognise a third Step 8 Find a third Step 9 Find the whole Step 10 Unit fractions Step 11 Non-unit fractions Step 12 Recognise the equivalence of a half and two-quarters Step 13 Recognise three-quarters Step 14 Find three-quarters Step 15 Count in fractions up to a whole NATIONAL CURRICULUM LINKS: **Recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity.** **Write simple fractions, for example 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1 2.** Measurement: Time Step 1 O'clock and half past Step 2 Quarter past and quarter to Step 3 Tell the time past the hour Step 4 Tell the time to the hour Step 5 Tell the time to 5 minutes Step 6 Minutes in an hour

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Recognise the place value of each digit in a 2-digit number (tens, ones). **Compare and order numbers from 0 up to 100; use <, > and = signs.** Number: Addition and Subtraction Step 1 Bonds to 10 Step 2 Fact families - addition and subtraction bonds within 20 Step 3 Related facts Step 4 Bonds to 100 (tens) Step 5 Add and subtract 1s Step 6 Add by making 10 Step 7 Add three 1-digit numbers Step 8 Add to the next 10 Step 9 Add across a 10 Step 10 Subtract across 10 Step 11 Subtract from a 10 Step 12 Subtract a 1-digit number from a 2-digit number (across a 10) Step 13 10 more, 10 less Step 14 Add and subtract 10s Step 15 Add two 2-digit numbers (not across a 10) Step 16 Add two 2-digit numbers (across a 10) Step 17 Subtract two 2-digit numbers (not across a 10) Step 18 Subtract two 2-digit numbers (across a 10) Step 19 Mixed addition and subtraction Step 20 Compare number sentences Step 21 Missing number problems NATIONAL CURRICULUM LINKS: **Represent and use number bonds and related subtraction facts within 20 (Y1).**	Step 12 Odd and even numbers Step 13 The 10 times-table Step 14 Divide by 10 Step 15 The 5 times-table Step 16 Divide by 5 Step 17 The 5 and 10 times-tables NATIONAL CURRICULUM LINKS: **Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.** **Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.** **Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.** Measurement: Length and Height Step 1 Measure in centimetres Step 2 Measure in metres Step 3 Compare lengths and heights Step 4 Order lengths and heights Step 5 Four operations with lengths and heights NATIONAL CURRICULUM LINKS: **Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity**	Step 7 Hours in a day NATIONAL CURRICULUM LINKS: **Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clockface to show these times.** **Know the number of minutes in an hour and the number of hours in a day.** Statistics Step 1 Make tally charts Step 2 Tables Step 3 Block diagrams Step 4 Draw pictograms (1–1) Step 5 Interpret pictograms (1–1) Step 6 Draw pictograms (2, 5 and 10) Step 7 Interpret pictograms (2, 5 and 10) NATIONAL CURRICULUM LINKS: **Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.** **Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.** **Ask and answer questions about totalling and comparing categorical data.** **Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.** Geometry: Position and Direction Step 1 Language of position Step 2 Describe movement Step 3 Describe turns Step 4 Describe movement and turns

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a 2-digit number and 1s, a 2-digit number and 10s, two 2-digit numbers and adding three 1-digit numbers. Compare and order numbers from 0 up to 100; use <, > and = signs. Geometry: Shape Step 1 Recognise 2-D and 3-D shapes Step 2 Count sides on 2-D shapes Step 3 Count vertices on 2-D shapes Step 4 Draw 2-D shapes Step 5 Lines of symmetry on shapes Step 6 Use lines of symmetry to complete shapes Step 7 Sort 2-D shapes Step 8 Count faces on 3-D shapes Step 9 Count edges on 3-D shapes Step 10 Count vertices on 3-D shapes Step 11 Sort 3-D shapes Step 12 Make patterns with 2-D and 3-D shapes NATIONAL CURRICULUM LINKS: Identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line. Compare and sort common 2-D and 3-D shapes and everyday objects.	(litres/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity and record the results using >, < and =. Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. Measurement: Mass, Capacity and Temperature Step 1 Compare mass Step 2 Measure in grams Step 3 Measure in kilograms Step 4 Four operations with mass Step 5 Compare volume and capacity Step 6 Measure in millilitres Step 7 Measure in litres Step 8 Four operations with volume and capacity Step 9 Temperature NATIONAL CURRICULUM LINKS: Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels Compare and order lengths, mass, volume/capacity and record the results using >, < and =.	Step 5 Shape patterns with turns NATIONAL CURRICULUM LINKS: Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). CONSOLIDATION

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. **Identify 2-D shapes on the surface of 3-D shapes.**	**Spinderella** **If the World Were a Village**	
Mathematics Mastering Number NCETM	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. **Pupils will:** • review the composition of the numbers 6 to 9 as '5 and a bit' • compare numbers using the language of comparison and use the symbols < > = • 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 • 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 consolidate their understanding of the numbers 10 and 20 as '10 and a bit' • consolidate their understanding of the linear number system to 20 and reason about midpoints This term will particularly support the teaching and consolidation of the following RtP criteria: • 1NPV-2 • 2NF-1	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. **Pupils will:** • explore how the numbers 6 to 9 can be doubled using the '5 and a bit' and '10 and a bit' structure • use doubles to calculate near doubles • use bonds of 10 to reason about bonds of 20, in which the given addend is greater than 10 • use known number bonds within 10 to calculate within 20, working within the 10-boundary use their knowledge of bonds of 10 to find three addends that sum to 10 • use their knowledge of the composition of numbers within 20 to add and subtract across the 10-boundary • 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 This term will particularly support the teaching and consolidation of the following RtP criteria: • 2NPV-2 • 2NF-1 • 2AS-1	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. **Pupils will:** • continue to explore a range of strategies to subtract across the 10-boundary • 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 • practise previously explored strategies to support their reasoning about inequalities and equations • review doubles and near doubles and transform additions in which two addends are adjacent odd/ even numbers into doubles consolidate previously taught facts and strategies through continued, varied practice This term will particularly support the teaching and consolidation of the following RtP criteria: • 2NF-1 • 2AS-1 • 2AS-2
Y3	WHITE ROSE Number: Place Value Step 1 Represent numbers to 100 Step 2 Partition numbers to 100 Step 3 Number line to 100 Step 4 Hundreds Step 5 Represent numbers to 1,000 Step 6 Partition numbers to 1,000 Step 7 Flexible partitioning of numbers to 1,000 Step 8 Hundreds, tens and ones Step 9 Find 1, 10 or 100 more or less Step 10 Number line to 1,000	WHITE ROSE Number: Multiplication and Division B Step 1 Multiples of 10 Step 2 Related calculations Step 3 Reasoning about multiplication Step 4 Multiply a 2-digit number by a 1-digit number – no exchange Step 5 Multiply a 2-digit number by a 1-digit number – with exchange Step 6 Link multiplication and division Step 7 Divide a 2-digit number by a 1-digit number – no exchange	WHITE ROSE Number: Fractions B Step 1 Add fractions Step 2 Subtract fractions Step 3 Partition the whole Step 4 Unit fractions of a set of objects Step 5 Non-unit fractions of a set of objects Step 6 Reasoning with fractions of an amount NATIONAL CURRICULUM LINKS: **Add and subtract fractions with the same denominator within one whole.**

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

Step 11 Estimate on a number line to 1,000
Step 12 Compare numbers to 1,000
Step 13 Order numbers to 1,000
Step 14 Count in 50s

NATIONAL CURRICULUM LINKS:

Identify, represent and estimate numbers using different representations.

Recognise the place value of each digit in a 3-digit number (hundreds, tens, ones).

Count from zero in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.

Read and write numbers up to 1,000 in numerals and words.

Compare and order numbers up to 1,000.

Number: Addition and Subtraction

Step 1 Apply number bonds within 10
Step 2 Add and subtract 1s
Step 3 Add and subtract 10s
Step 4 Add and subtract 100s
Step 5 Spot the pattern
Step 6 Add 1s across a 10
Step 7 Add 10s across a 100
Step 8 Subtract 1s across a 10
Step 9 Subtract 10s across a 100
Step 10 Make connections
Step 11 Add two numbers (no exchange)
Step 12 Subtract two numbers (no exchange)
Step 13 Add two numbers (across a 10)
Step 14 Add two numbers (across a 100)
Step 15 Subtract two numbers (across a 10)
Step 16 Subtract two numbers (across a 100)

Step 8 Divide a 2-digit number by a 1-digit number – flexible partitioning
Step 9 Divide a 2-digit number by a 1-digit number – with remainders
Step 10 Scaling
Step 11 How many ways?

NATIONAL CURRICULUM LINKS:

Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2).

Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods.

Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

Measurement: Length and Perimeter

Step 1 Measure in metres and centimetres
Step 2 Measure in millimetres
Step 3 Measure in centimetres and millimetres
Step 4 Metres, centimetres and millimetres
Step 5 Equivalent lengths (metres and centimetres)
Step 6 Equivalent lengths (centimetres and millimetres)
Step 7 Compare lengths
Step 8 Add lengths
Step 9 Subtract lengths
Step 10 What is perimeter?
Step 11 Measure perimeter
Step 12 Calculate perimeter

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.

Measurement: Money

Step 1 Pounds and pence
Step 2 Convert pounds and pence
Step 3 Add money
Step 4 Subtract money
Step 5 Find change

NATIONAL CURRICULUM LINKS:

Add and subtract amounts of money to give change, using both £ and p in practical contexts.

Measurement: Time

Step 1 Roman numerals to 12
Step 2 Tell the time to 5 minutes
Step 3 Tell the time to the minute
Step 4 Read time on a digital clock
Step 5 Use am and pm
Step 6 Years, months and days
Step 7 Days and hours
Step 8 Hours and minutes – use start and end times
Step 9 Hours and minutes - use durations
Step 10 Minutes and seconds
Step 11 Units of time
Step 12 Solve problems with time

NATIONAL CURRICULUM LINKS:

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

Step 17 Add 2-digit and 3-digit numbers
Step 18 Subtract a 2-digit number from a 3-digit number
Step 19 Complements to 100
Step 20 Estimate answers
Step 21 Inverse operations
Step 22 Make decisions

NATIONAL CURRICULUM LINKS:

Add and subtract numbers mentally, including: a 3-digit number and ones, a 3-digit number and tens, a 3-digit number and hundreds.

Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.

Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

Estimate the answer to a calculation and use inverse operations to check answers.

Number: Multiplication and Division A

Step 1 Multiplication – equal groups
Step 2 Use arrays
Step 3 Multiples of 2
Step 4 Multiples of 5 and 10
Step 5 Sharing and grouping
Step 6 Multiply by 3
Step 7 Divide by 3
Step 8 The 3 times-table
Step 9 Multiply by 4
Step 10 Divide by 4
Step 11 The 4 times-table

NATIONAL CURRICULUM LINKS:

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).

Measure the perimeter of simple 2-D shapes.

Number: Fractions A

Step 1 Understand the denominators of unit fractions
Step 2 Compare and order unit fractions
Step 3 Understand the numerators of non-unit fractions
Step 4 Understand the whole
Step 5 Compare and order non-unit fractions
Step 6 Fractions and scales
Step 7 Fractions on a number line
Step 8 Count in fractions on a number line
Step 9 Equivalent fractions on a number line
Step 10 Equivalent fractions as bar models

NATIONAL CURRICULUM LINKS:

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.

Compare and order unit fractions, and fractions with the same denominators.

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).

Recognise and show, using diagrams, equivalent fractions with small denominators.

Measurement: Mass and Capacity

Step 1 Use scales
Step 2 Measure mass in grams
Step 3 Measure mass in kilograms and grams
Step 4 Equivalent masses (kilograms and grams)
Step 5 Compare mass
Step 6 Add and subtract mass

Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.

Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight.

Know the number of seconds in a minute and the number of days in each month, year and leap year.

Compare durations of events.

Geometry: Shape

Step 1 Turns and angles
Step 2 Right angles
Step 3 Compare angles
Step 4 Measure and draw accurately
Step 5 Horizontal and vertical
Step 6 Parallel and perpendicular
Step 7 Recognise and describe 2-D shapes
Step 8 Draw polygons
Step 9 Recognise and describe 3-D shapes
Step 10 Make 3-D shapes

NATIONAL CURRICULUM LINKS:

Recognise angles as a property of shape or a description of a turn.
Identify right angles, recognise that two right angles make a half turn, three make three-quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 12 Multiply by 8 Step 13 Divide by 8 Step 14 The 8 times-table Step 15 The 2, 4 and 8 times-tables NATIONAL CURRICULUM LINKS: **Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods.** **Show that multiplication of two numbers can be done in any order (commutative) and division on one number by another cannot (Y2).** **Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward (Y2).** **Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2).** **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.**	Step 7 Measure capacity and volume in millilitres Step 8 Measure capacity and volume in litres and millilitres Step 9 Equivalent capacities and volumes (litres and millilitres) Step 10 Compare capacity and volume Step 11 Add and subtract capacity and volume NATIONAL CURRICULUM LINKS: **Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).**	**Measure the perimeter of simple 2-D shapes. Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.** Statistics Step 1 Interpret pictograms Step 2 Draw pictograms Step 3 Interpret bar charts Step 4 Draw bar charts Step 5 Collect and represent data Step 6 Two-way tables NATIONAL CURRICULUM LINKS: **Interpret and present data using bar charts, pictograms and tables.** **Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.**
Y4	WHITE ROSE Number: Place Value Step 1 Represent numbers to 1,000 Step 2 Partition numbers to 1,000 Step 3 Number line to 1,000 Step 4 Thousands Step 5 Represent numbers to 10,000 Step 6 Partition numbers to 10,000 Step 7 Flexible partitioning of numbers to 10,000 Step 8 Find 1, 10, 100, 1,000 more or less Step 9 Number line to 10,000	WHITE ROSE Number: Multiplication and Division B Step 1 Factor pairs Step 2 Use factor pairs Step 3 Multiply by 10 Step 4 Multiply by 100 Step 5 Divide by 10 Step 6 Divide by 100 Step 7 Related facts – multiplication and division Step 8 Informal written methods for multiplication Step 9 Multiply a 2-digit number by a 1-digit number	WHITE ROSE Number: Decimals B Step 1 Make a whole with tenths Step 2 Make a whole with hundredths Step 3 Partition decimals Step 4 Flexibly partition decimals Step 5 Compare decimals Step 6 Order decimals Step 7 Round to the nearest whole number Step 8 Halves and quarters as decimals

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 10 Estimate on a number line to 10,000 Step 11 Compare numbers to 10,000 Step 12 Order numbers to 10,000 Step 13 Roman numerals Step 14 Round to the nearest 10 Step 15 Round to the nearest 100 Step 16 Round to the nearest 1,000 Step 17 Round to the nearest 10, 100 or 1,000 NATIONAL CURRICULUM LINKS: **Read and write numbers up to 1,000 in numerals and words (Y3).** **Identify, represent and estimate numbers using different representations.** **Recognise the place value of each digit in a 3-digit number (hundreds, tens, ones) (Y3).** **Count in multiples of 6, 7, 9, 25 and 1,000** **Recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones).** **Find 1,000 more or less than a given number. Order and compare numbers beyond 1,000.** **Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.** **Round any number to the nearest 10, 100 or 1,000.** Number: Addition and Subtraction Step 1 Add and subtract 1s, 10s, 100s and 1,000s	Step 10 Multiply a 3-digit number by a 1-digit number Step 11 Divide a 2-digit number by a 1-digit number (1) Step 12 Divide a 2-digit number by a 1-digit number (2) Step 13 Divide a 3-digit number by a 1-digit number Step 14 Correspondence problems Step 15 Efficient multiplication NATIONAL CURRICULUM LINKS: **Recognise and use factor pairs and commutativity in mental calculations.** **Recall multiplication and division facts for multiplication tables up to 12 × 12.** **Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 (Y5).** **Solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.** **Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout.** **Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers.** Measurement: Length and Perimeter Step 1 Measure in kilometres and metres Step 2 Equivalent lengths (kilometres and metres) Step 3 Perimeter on a grid Step 4 Perimeter of a rectangle Step 5 Perimeter of rectilinear shapes Step 6 Find missing lengths in rectilinear shapes Step 7 Calculate perimeter of rectilinear shapes	NATIONAL CURRICULUM LINKS: **Recognise and write decimal equivalents of any number of tenths or hundredths.** **Solve simple measure and money problems involving fractions and decimals to 2 decimal places.** **Round decimals with 1 decimal place to the nearest whole number.** **Recognise and write decimal equivalents to 1/4, 1/2 and ¾.** Measurement: Money Step 1 Write money using decimals Step 2 Convert between pounds and pence Step 3 Compare amounts of money Step 4 Estimate with money Step 5 Calculate with money Step 6 Solve problems with money NATIONAL CURRICULUM LINKS: **Estimate, compare and calculate different measures, including money in pounds and pence.** Measurement: Time Step 1 Years, months, weeks and days Step 2 Hours, minutes and seconds Step 3 Convert between analogue and digital times Step 4 Convert to the 24-hour clock Step 5 Convert from the 24-hour clock NATIONAL CURRICULUM LINKS:

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

Step 2 Add up to two 4-digit numbers – no exchange Step 3 Add two 4-digit numbers – one exchange Step 4 Add two 4-digit numbers – more than one exchange
Step 5 Subtract two 4-digit numbers – no exchange
Step 6 Subtract two 4-digit numbers – one exchange
Step 7 Subtract two 4-digit numbers – more than one exchange
Step 8 Efficient subtraction
Step 9 Estimate answers
Step 10 Checking strategies

NATIONAL CURRICULUM LINKS:

Add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate.

Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Estimate and use inverse operations to check answers to a calculation.

Measurement: Area

Step 1 What is area?
Step 2 Count squares
Step 3 Make shapes
Step 4 Compare areas

NATIONAL CURRICULUM LINKS:

Find the area of rectilinear shapes by counting squares.

Number: Multiplication and Division A

Step 1 Multiples of 3
Step 8 Perimeter of regular polygons
Step 9 Perimeter of polygons

NATIONAL CURRICULUM LINKS:

Convert between different units of measure [for example, kilometre to metre; hour to minute].
Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.

Number: Fractions

Step 1 Understand the whole
Step 2 Count beyond 1
Step 3 Partition a mixed number
Step 4 Number lines with mixed numbers
Step 5 Compare and order mixed numbers
Step 6 Understand improper fractions
Step 7 Convert mixed numbers to improper fractions
Step 8 Convert improper fractions to mixed numbers
Step 9 Equivalent fractions on a number line
Step 10 Equivalent fraction families
Step 11 Add two or more fractions
Step 12 Add fractions and mixed numbers
Step 13 Subtract two fractions
Step 14 Subtract from whole amounts
Step 15 Subtract from mixed numbers

NATIONAL CURRICULUM LINKS:

Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators (Y3).

Recognise and show, using diagrams, families of common equivalent fractions.

Add and subtract fractions with the same denominator.

Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.
Read, write and convert time between analogue and digital 12- and 24-hour clocks.

Geometry: Shape

Step 1 Understand angles as turns
Step 2 Identify angles
Step 3 Compare and order angles
Step 4 Triangles
Step 5 Quadrilaterals
Step 6 Polygons
Step 7 Lines of symmetry
Step 8 Complete a symmetric figure

NATIONAL CURRICULUM LINKS:

Recognise angles as a property of shape or a description of a turn (Y3).
Identify acute and obtuse angles and compare and order angles up to two right angles by size.
Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
Identify lines of symmetry in 2-D shapes presented in different orientations.
Complete a simple symmetric figure with respect to a specific line of symmetry.

Statistics

Step 1 Interpret charts
Step 2 Comparison, sum and difference
Step 3 Interpret line graphs
Step 4 Draw line graphs

NATIONAL CURRICULUM LINKS:

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 2 Multiply and divide by 6 Step 3 6 times-table and division facts Step 4 Multiply and divide by 9 Step 5 9 times-table and division facts Step 6 The 3, 6 and 9 times-tables Step 7 Multiply and divide by 7 Step 8 7 times-table and division facts Step 9 11 times-table and division facts Step 10 12 times-table and division facts Step 11 Multiply by 1 and 0 Step 12 Divide a number by 1 and itself Step 13 Multiply three numbers NATIONAL CURRICULUM LINKS: Recall multiplication and division facts for multiplication tables up to 12 × 12. Recognise and use factor pairs and commutativity in mental calculations. Count in multiples of 6, 7, 9, 25 and 1,000. Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.	Number: Decimals A Step 1 Tenths as fractions Step 2 Tenths as decimals Step 3 Tenths on a place value chart Step 4 Tenths on a number line Step 5 Divide a 1-digit number by 10 Step 6 Divide a 2-digit number by 10 Step 7 Hundredths as fractions Step 8 Hundredths as decimals Step 9 Hundredths on a place value chart Step 10 Divide a 1- or 2-digit number by 100 NATIONAL CURRICULUM LINKS: Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10 (Y3). Recognise and write decimal equivalents of any number of tenths or hundredths. Compare numbers with the same number of decimal places up to 2 decimal places. Find the effect of dividing a 1- or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10. Recognise and show, using diagrams, families of common equivalent fractions.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. Geometry: Position and Direction Step 1 Describe position using coordinates Step 2 Plot coordinates Step 3 Draw 2-D shapes on a grid Step 4 Translate on a grid Step 5 Describe translation on a grid NATIONAL CURRICULUM LINKS: Describe positions on a 2-D grid as coordinates in the first quadrant. Plot specified points and draw sides to complete a given polygon. Describe movements between positions as translations of a given unit to the left/right and up/down.

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Y5	WHITE ROSE Number: Place Value Step 1 Roman numerals to 1,000 Step 2 Numbers to 10,000 Step 3 Numbers to 100,000 Step 4 Numbers to 1,000,000 Step 5 Read and write numbers to 1,000,000 Step 6 Powers of 10 Step 7 10/100/1,000/10,000/100,000 more or less Step 8 Partition numbers to 1,000,000 Step 9 Number line to 1,000,000 Step 10 Compare and order numbers to 100,000 Step 11 Compare and order numbers to 1,000,000 Step 12 Round to the nearest 10, 100 or 1,000 Step 13 Round within 100,000 Step 14 Round within 1,000,000 NATIONAL CURRICULUM LINKS: Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals. Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit. Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. Solve number problems and practical problems involving the above. Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000. Number: Addition and Subtraction Step 1 Mental strategies	WHITE ROSE Number: Multiplication and Division B Step 1 Multiply up to a 4-digit number by a 1-digit number Step 2 Multiply a 2-digit number by a 2-digit number (area model) Step 3 Multiply a 2-digit number by a 2-digit number Step 4 Multiply a 3-digit number by a 2-digit number Step 5 Multiply a 4-digit number by a 2-digit number Step 6 Solve problems with multiplication Step 7 Short division Step 8 Divide a 4-digit number by a 1-digit number Step 9 Divide with remainders Step 10 Efficient division Step 11 Solve problems with multiplication and division NATIONAL CURRICULUM LINKS: Multiply numbers up to four digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers. Divide up to four digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context. Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes. Number: Fractions B Step 1 Multiply a unit fraction by an integer Step 2 Multiply a non-unit fraction by an integer Step 3 Multiply a mixed number by an integer Step 4 Calculate a fraction of a quantity Step 5 Fraction of an amount Step 6 Find the whole Step 7 Use fractions as operators	WHITE ROSE Geometry: Shape Step 1 Understand and use degrees Step 2 Classify angles Step 3 Estimate angles Step 4 Measure angles up to 180° Step 5 Draw lines and angles accurately Step 6 Calculate angles around a point Step 7 Calculate angles on a straight line Step 8 Lengths and angles in shapes Step 9 Regular and irregular polygons Step 10 3-D shapes NATIONAL CURRICULUM LINKS: Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees (°). Identify angles at a point and 1 whole turn (total 360°). Identify: angles at a point and 1 whole turn (total 360°); angles at a point on a straight line and half a turn (total 180°). Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. Geometry: Position and Direction Step 1 Read and plot coordinates Step 2 Problem solving with coordinates Step 3 Translation

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 2 Add whole numbers with more than four digits Step 3 Subtract whole numbers with more than four digits Step 4 Round to check answers Step 5 Inverse operations (addition and subtraction) Step 6 Multi-step addition and subtraction problems Step 7 Compare calculations Step 8 Find missing numbers NATIONAL CURRICULUM LINKS: **Add and subtract numbers mentally with increasingly large numbers.** **Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction).** **Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.** **Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.** **Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.** Number: Multiplication and Division A Step 1 Multiples Step 2 Common multiples Step 3 Factors Step 4 Common factors Step 5 Prime numbers Step 6 Square numbers	NATIONAL CURRICULUM LINKS: **Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.** **Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number (Y4)** Number: Decimals and Percentages Step 1 Decimals up to 2 decimal places Step 2 Equivalent fractions and decimals (tenths) Step 3 Equivalent fractions and decimals (hundredths) Step 4 Equivalent fractions and decimals Step 5 Thousandths as fractions Step 6 Thousandths as decimals Step 7 Thousandths on a place value chart Step 8 Order and compare decimals (same number of decimal places) Step 9 Order and compare any decimals with up to 3 decimal places Step 10 Round to the nearest whole number Step 11 Round to 1 decimal place Step12 Understand percentages Step 13 Percentages as fractions Step 14 Percentages as decimals Step 15 Equivalent fractions, decimals and percentages NATIONAL CURRICULUM LINKS: **Read, write, order and compare numbers with up to 3 decimal places.** **Read and write decimal numbers as fractions.**	Step 4 Translation with coordinates Step 5 Lines of symmetry Step 6 Reflection in horizontal and vertical lines NATIONAL CURRICULUM LINKS: **Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.** Number: Decimals Step 1 Use known facts to add and subtract decimals within 1 Step 2 Complements to 1 Step 3 Add and subtract decimals across 1 Step 4 Add decimals with the same number of decimal places Step 5 Subtract decimals with the same number of decimal places Step 6 Add decimals with different numbers of decimal places Step 7 Subtract decimals with different numbers of decimal places Step 8 Efficient strategies for adding and subtracting decimals Step 9 Decimal sequences Step 10 Multiply by 10, 100 and 1,000 Step 11 Divide by 10, 100 and 1,000 Step 12 Multiply and divide decimals – missing values NATIONAL CURRICULUM LINKS: **Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.**

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 7 Cube numbers Step 8 Multiply by 10, 100 and 1,000 Step 9 Divide by 10, 100 and 1,000 Step 10 Multiples of 10, 100 and 1,000 NATIONAL CURRICULUM LINKS: Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3). Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. Multiply and divide numbers mentally, drawing upon known facts. Number: Fractions A Step 1 Find fractions equivalent to a unit fraction Step 2 Find fractions equivalent to a non-unit fraction Step 3 Recognise equivalent fractions Step 4 Convert improper fractions to mixed numbers Step 5 Convert mixed numbers to improper fractions Step 6 Compare fractions less than 1	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Solve problems which require knowing percentage and decimal equivalents of 1/2 , 1/4 , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Solve problems involving numbers up to 3 decimal places. Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place. Recognise the per cent symbol (%) and understand that per cent relates to “number of parts per 100”, and write percentages as a fraction with denominator 100, and as a decimal fraction. Measurement: Perimeter and Area Step 1 Perimeter of rectangles Step 2 Perimeter of rectilinear shapes Step 3 Perimeter of polygons Step 4 Area of rectangles Step 5 Area of compound shapes Step 6 Estimate area NATIONAL CURRICULUM LINKS: Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.	Solve problems involving number up to 3 decimal places. Read, write, order and compare numbers with up to 3 decimal places. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. Number: Negative numbers Step 1 Understand negative numbers Step 2 Count through zero in 1s Step 3 Count through zero in multiples Step 4 Compare and order negative numbers Step 5 Find the difference NATIONAL CURRICULUM LINKS: Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. Measurement: Converting units Step 1 Kilograms and kilometres Step 2 Millimetres and millilitres Step 3 Convert units of length Step 4 Convert between metric and imperial units Step 5 Convert units of time Step 6 Calculate with timetables NATIONAL CURRICULUM LINKS: Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre].

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 7 Order fractions less than 1 Step 8 Compare and order fractions greater than 1 Step 9 Add and subtract fractions with the same denominator Step 10 Add fractions within 1 Step 11 Add fractions with total greater than 1 Step 12 Add to a mixed number Step 13 Add two mixed numbers Step 14 Subtract fractions Step 15 Subtract from a mixed number Step 16 Subtract from a mixed number – breaking the whole Step 17 Subtract two mixed numbers NATIONAL CURRICULUM LINKS: **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.** **Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number.** **Compare and order fractions whose denominators are all multiples of the same number.** **Add and subtract fractions with the same denominator, and denominators that are multiples of the same number.**	**Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm2) and square metres (m2), and estimate the area of irregular shapes.** Statistics Step 1 Draw line graphs Step 2 Read and interpret line graphs Step 3 Read and interpret tables Step 4 Two-way tables Step 5 Read and interpret timetables NATIONAL CURRICULUM LINKS: **Solve comparison, sum and difference problems using information presented in a line graph.** **Complete, read and interpret information in tables, including timetables**	**Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.** **Solve problems involving converting between units of time.** Measurement: Volume Step 1 Cubic centimetres Step 2 Compare volume Step 3 Estimate volume Step 4 Estimate capacity NATIONAL CURRICULUM LINKS: **Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity.** **Estimate volume and capacity [for example, using water].**
Y6	WHITE ROSE Number: Place Value Step 1 Numbers to 1,000,000 Step 2 Numbers to 10,000,000 Step 3 Read and write numbers to 10,000,000 Step 4 Powers of 10	WHITE ROSE Number: Decimals Step 1 Place value within 1 Step 2 Place value – integers and decimals Step 3 Round decimals Step 4 Add and subtract decimals Step 5 Multiply by 10, 100 and 1,000	WHITEROSE Geometry: Position and Direction Step 1 The first quadrant Step 2 Read and plot points in four quadrants Step 3 Solve problems with coordinates Step 4 Translations Step 5 Reflections

Cop Lane C of E Primary School – Mathematics Overview 2024-2025

	Step 5 Number line to 10,000,000 Step 6 Compare and order any integers Step 7 Round any integer Step 8 Negative numbers NATIONAL CURRICULUM LINKS: **Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.** **Round any whole number to a required degree of accuracy.** **Use negative numbers in context, and calculate intervals across zero.** **Solve number and practical problems that involve the above.** Number: Addition, Subtraction, Multiplication and Division Step 1 Add and subtract integers Step 2 Common factors Step 3 Common multiples Step 4 Rules of divisibility Step 5 Primes to 100 Step 6 Square and cube numbers Step 7 Multiply up to a 4-digit number by a 2-digit number Step 8 Solve problems with multiplication Step 9 Short division Step 10 Division using factors Step 11 Introduction to long division Step 12 Long division with remainders Step 13 Solve problems with division Step 14 Solve multi-step problems Step 15 Order of operations	Step 6 Divide by 10, 100 and 1,000 Step 7 Multiply decimals by integers Step 8 Divide decimals by integers Step 9 Multiply and divide decimals in context NATIONAL CURRICULUM LINKS: **Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.** **Solve problems which require answers to be rounded to specified degrees of accuracy.** **Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.** **Multiply 1-digit numbers with up to 2 decimal places by whole numbers.** **Use written division methods in cases where the answer has up to 2 decimal places.** **Solve problems involving addition, subtraction, multiplication and division.** Number: Fractions, Decimals and Percentages Step 1 Decimal and fraction equivalents Step 2 Fractions as division Step 3 Understand percentages Step 4 Fractions to percentages Step 5 Equivalent fractions, decimals and percentages Step 6 Order fractions, decimals and percentages Step 7 Percentage of an amount – one step	NATIONAL CURRICULUM LINKS: **Describe positions on the full coordinate grid (all four quadrants).** **Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.** Geometry: Shape Step 1 Measure and classify angles Step 2 Calculate angles Step 3 Vertically opposite angles Step 4 Angles in a triangle Step 5 Angles in a triangle – special cases Step 6 Angles in a triangle – missing angles Step 7 Angles in a quadrilateral Step 8 Angles in polygons Step 9 Circles Step 10 Draw shapes accurately Step 11 Nets of 3-D shapes NATIONAL CURRICULUM LINKS: **Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.** **Draw given angles, and measure them in degrees (°) (Y5).** **Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (Y5).** **Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.** **Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.**

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	Step 16 Mental calculations and estimation Step 17 Reason from known facts NATIONAL CURRICULUM LINKS: Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Identify common factors, common multiples and prime numbers. Multiply multi-digit numbers up to four digits by a 2-digit whole number using the formal written method of long multiplication. Perform mental calculations, including with mixed operations and large numbers. Divide numbers up to four digits by a 2-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Divide numbers up to four digits by a 2-digit whole number using the formal written	Step 8 Percentage of an amount – multi-step Step 9 Percentages – missing values NATIONAL CURRICULUM LINKS: Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. Compare and order fractions, including fractions >1. Solve problems involving the calculation of percentages and the use of percentages for comparison. Measurement: Area, Perimeter and Volume Step 1 Shapes – same area Step 2 Area and perimeter Step 3 Area of a triangle – counting squares Step 4 Area of a right-angled triangle Step 5 Area of any triangle Step 6 Area of a parallelogram Step 7 Volume – counting cubes Step 8 Volume of a cuboid NATIONAL CURRICULUM LINKS: Recognise that shapes with the same areas can have different perimeters and vice versa. Recognise when it is possible to use formulae for area and volume of shapes.	Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including making nets. Number: Ratio Step 1 Add or multiply? Step 2 Use ratio language Step 3 Introduction to the ratio symbol Step 4 Ratio and fractions Step 5 Scale drawing Step 6 Use scale factors Step 7 Similar shapes Step 8 Ratio problems Step 9 Proportion problems Step 10 Recipes NATIONAL CURRICULUM LINKS: Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. Solve problems involving similar shapes where the scale factor is known or can be found. Number: Algebra Step 1 1-step function machines Step 2 2-step function machines Step 3 Form expressions Step 4 Substitution Step 5 Formulae

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	method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. Use their knowledge of the order of operations to carry out calculations involving the four operations. Number: Fractions A Step 1 Equivalent fractions and simplifying Step 2 Equivalent fractions on a number line Step 3 Compare and order (denominator) Step 4 Compare and order (numerator) Step 5 Add and subtract simple fractions Step 6 Add and subtract any two fractions Step 7 Add mixed numbers Step 8 Subtract mixed numbers Step 9 Multi-step problems NATIONAL CURRICULUM LINKS: Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions > 1. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Identify common factors, common multiples and prime numbers.	Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units. Measurement: Converting units Step 1 Metric measures Step 2 Convert metric measures Step 3 Calculate with metric measures Step 4 Miles and kilometres Step 5 Imperial measures NATIONAL CURRICULUM LINKS: Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places. Number: Ratio Step 1 Add or multiply? Step 2 Use ratio language Step 3 Introduction to the ratio symbol Step 4 Ratio and fractions Step 5 Scale drawing Step 6 Use scale factors Step 7 Similar shapes Step 8 Ratio problems Step 9 Proportion problems Step 10 Recipes NATIONAL CURRICULUM LINKS:	Step 6 Form equations Step 7 Solve 1-step equations Step 8 Solve 2-step equations Step 9 Find pairs of values Step 10 Solve problems with two unknowns NATIONAL CURRICULUM LINKS: Use simple formulae. Generate and describe linear number sequences. Find pairs of numbers that satisfy an equation with two unknowns. Enumerate possibilities of combinations of two variables. Express missing number problems algebraically. Themed projects, consolidation and Problem Solving

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	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division. Number: Fractions B Step 1 Multiply fractions by integers Step 2 Multiply fractions by fractions Step 3 Divide a fraction by an integer Step 4 Divide any fraction by an integer Step 5 Mixed questions with fractions Step 6 Fraction of an amount Step 7 Fraction of an amount – find the whole NATIONAL CURRICULUM LINKS: Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Y5). Multiply simple pairs of proper fractions, writing the answer in its simplest form. Divide proper fractions by whole numbers. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Solve problems involving addition, subtraction, multiplication and division. Associate a fraction with division and calculate decimal fraction equivalents. Statistics Step 1 Line graphs	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. Solve problems involving similar shapes where the scale factor is known or can be found. Number: Algebra Step 1 1-step function machines Step 2 2-step function machines Step 3 Form expressions Step 4 Substitution Step 5 Formulae Step 6 Form equations Step 7 Solve 1-step equations Step 8 Solve 2-step equations Step 9 Find pairs of values Step 10 Solve problems with two unknowns NATIONAL CURRICULUM LINKS: Use simple formulae. Generate and describe linear number sequences. Find pairs of numbers that satisfy an equation with two unknowns. Enumerate possibilities of combinations of two variables. Express missing number problems algebraically.	

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	Step 2 Dual bar charts Step 3 Read and interpret pie charts Step 4 Pie charts with percentages Step 5 Draw pie charts Step 6 The mean <u>NATIONAL CURRICULUM LINKS:</u> Interpret and construct pie charts and line graphs and use these to solve problems. Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4). Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.		