



Limestone Federation

Mixed Maths Planning

Year 3/4

Yearly Overview

	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 Place Value				Number Addition and subtraction				Number Multiplication and Division A			Measurement Area
Spring	Number Multiplication and Division B			Measurement Length and Perimeter		Measurement Fractions A			Measurement Mass and Capacity		Measurement Fractions B	
Summer	Measurement Time		Number Decimals			Number Money		Geometry Shape		Geometry Position and Direction	Statistics	

Autumn Term – 4 Weeks

Number: Place Value

Year 3

Pupils should be taught to:

- count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)
- compare and order numbers up to 1,000
- identify, represent and estimate numbers using different representations
- read and write numbers up to 1,000 in numerals and in words
- solve number problems and practical problems involving these ideas

Year 4

Pupils should be taught to:

- count in multiples of 6, 7, 9, 25 and 1,000
- find 1,000 more or less than a given number
- count backwards through 0 to include negative numbers
- recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s)
- order and compare numbers beyond 1,000
- identify, represent and estimate numbers using different representations
- round any number to the nearest 10, 100 or 1,000
- solve number and practical problems that involve all of the above and with increasingly large positive numbers
- read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value

Progressive Planning

Small Step

Hundreds, tens and ones

Y3 NC Statement: Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).

Recognise the place value of each digit in a three-digit number through:

- saying how many hundreds are in a given number;
- saying how many tens are in a given number;
- saying how many ones are in a given number;

Resources

Y3/4 White Rose Maths Step 1: Hundreds, tens and ones

Y3/4 White Rose Maths Step 2: Represent numbers to 1,000

Y3/4 White Rose Maths Step 3: Partition numbers to 1,000

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p>Numbers to 1,000</p> <p>Y3 NC Statement: Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</p> <p>Recognise the place value of each digit in a three-digit number through:</p> <ul style="list-style-type: none"> • saying the value of each digit in a three-digit number; • partitioning three-digit numbers into hundreds, tens and ones; • writing three-digit numbers in expanded form. <p>Resources</p> <p>Y3/4 White Rose Maths Step 2: Represent numbers to 1,000</p> <p>Y3/4 White Rose Maths Step 3: Partition numbers to 1,000</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Thousands</p> <p>Y4 NC Statement: Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).</p> <p>Represent numbers to 1000 through:</p> <ul style="list-style-type: none"> • making a unit of 1 thousand out of 10 units of 100; • identifying how many hundreds there are in four-digit multiples of 100; • identifying multiples of 100; • describing 1000 as 10 times the size of 100; • using their understanding of the equivalence of 10 hundreds and 1 thousand in the context of measures. <p>Resources</p> <p>Y3/4 White Rose Maths Step 4: Thousands</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Numbers to 10,000</u> Y4 NC Statement: Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).</p> <p>Use standard partitioning through:</p> <ul style="list-style-type: none"> identifying the place value of each digit in a four-digit number; combining units of ones, tens, hundreds and thousands to compose four-digit numbers; partitioning four-digit numbers into standard units of ones, tens, hundreds and thousands, writing the related addition calculation; solving problems relating to the number <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Represent numbers to 10,000 Y3/4 White Rose Maths Step 6: Partition numbers to 10,000</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Flexible Partitioning</u> Y3 NC Statement: Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Y4 NC Statement: Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).</p> <p>Use non-standard partitioning through:</p> <ul style="list-style-type: none"> partitioning three-digit numbers in non-standard ways and writing the related addition calculation; combining non-standard units of ones, tens and hundreds to compose three-digit numbers and writing the related addition calculation; partitioning four-digit numbers in non-standard ways and write the related addition calculation; combining non-standard units of ones, tens, hundreds and thousands to compose four-digit numbers and write the related addition calculation; solving problems relating to non-standard partitioning <p><u>Resources</u> Y3/4 White Rose Maths Step 7: Flexible partitioning</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Find 1, 10, 100 or 1,000 more or less</u> Y3 NC Statement: Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. Y4 NC Statement: Find 1000 more or less than a given number <u>Find 1, 10, 100 or 1,000 more or less through:</u></p> <ul style="list-style-type: none"> • finding 10 more than a given number; • finding 10 less than a given number; • finding 100 more than a given number; • finding 100 less than a given number. increasing the thousands digit by 1, and keeping the tens and ones digits the same, to find 1000 more; • decreasing the thousands digit by 1, and keeping the tens and ones digits the same, to find 1000 less. <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Find 1, 10, 100 or 1,000 more or less</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p>Number lines to 1,000</p> <p>Y3 NC Statement: Identify, represent and estimate numbers using different representations.</p> <ul style="list-style-type: none"> • using their understanding of dividing 100 into equal parts to help with estimating; • place three-digit numbers on number lines; • use values of three-digit numbers indicated on number lines. <p>Resources</p> <p>Y3/4 White Rose Maths Step 9: Number lines to 1,000</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Number lines to 10, 000</p> <p>Y3 NC Statement: Count from zero in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number (Y3)</p> <p>Y4 NC Statement: Identify, represent and estimate numbers using different representations.</p> <ul style="list-style-type: none"> • place four-digit numbers on number lines; • use the values of four-digit numbers shown on number lines; • using their understanding of dividing 1000 into equal parts to help with estimating. <p>Resources</p> <p>Y3/4 White Rose Maths Step 10: Number lines to 10, 000</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Order numbers</u> Y3 NC Statement: Compare and order numbers up to 1000 Y4 NC Statement: Order and compare numbers beyond 1000.</p> <ul style="list-style-type: none"> • using place value to compare numbers ready to order; • ordering numbers up to 1000 from smallest to largest; • ordering numbers up to 1000 from largest to smallest. • identifying the value of each digit in a four-digit number; • comparing the value of digits in four-digit numbers from left to right; • comparing numbers using the less than and greater than symbols; • ordering numbers from smallest to greatest or greatest to smallest; • ordering four-digit numbers shown in different representations. <p><u>Resources</u> Y3/4 White Rose Maths Step 13: Order numbers</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Round to the nearest 10</u> Y4 NC Statement: Round any number to the nearest 10, 100 or 1000.</p> <p>Round four-digit numbers to the nearest 10 through:</p> <ul style="list-style-type: none"> • identifying the multiples of 10 that a four-digit number is between; • identifying which digit to focus on in order to round to 10; • identifying which digits round up and which digits round down. <p><u>Resources</u> Y3/4 White Rose Maths Step 14: Round to the nearest 10</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Round to the nearest 100</u> Y4 NC Statement: Round any number to the nearest 10, 100 or 1000.</p> <p>Round four-digit numbers to the nearest 100 through: identifying the multiples of 100 that a four-digit number is between;</p> <ul style="list-style-type: none"> identifying which digit to focus on in order to round to 100; identifying which digits round up and which digits round down. <p><u>Resources</u> Y3/4 White Rose Maths Step 15: Round to the nearest 100</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Round to the nearest 1,000</u> Y4 NC Statement: Round any number to the nearest 10, 100 or 1000.</p> <p>Round four-digit numbers to the nearest 1000 through: <ul style="list-style-type: none"> identifying the multiples of 1000 that a four-digit number is between; identifying which digit to focus on in order to round to 1000; identifying which digits round up and which digits round down. </p> <p><u>Resources</u> Y3/4 White Rose Maths Step 16: Round to the nearest 1,000</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Round to the nearest 10, 100 or 1,000</u> Y4 NC Statement: Round any number to the nearest 10, 100 or 1000.</p> <p>Round four-digit numbers to the nearest 10, 100 and 1000 through:</p> <ul style="list-style-type: none"> identifying the multiples of 10, 100 and 1000 that a four-digit number is between; identifying which digit to focus on in order to round to either 10, 100 or 1000; identifying which digits round up and which digits round down. <p><u>Resources</u> Y3/4 White Rose Maths Step 17: Round to the nearest 10, 100 or 1,000</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Roman numerals</u> Y4 NC Statement: Read Roman numerals to 100 (I to C).</p> <ul style="list-style-type: none"> identifying the value of the I, V, X, L and C symbols used in Roman numerals; identifying how Roman numerals are combined to represent numbers; reading Roman numerals up to 100. <p><u>Resources</u> Y3/4 White Rose Maths Step 18: Roman numerals</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

Evaluation of Learning

Autumn Term – 4 Weeks

Number: Addition and Subtraction

Year 3

Pupils should be taught to:

- add and subtract numbers mentally, including:
 - a three-digit number and 1s
 - a three-digit number and 10s
 - a three-digit number and 100s
- add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

Year 4

Pupils should be taught to:

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

Progressive Planning

Small Step

Add and subtract 1s, 10s, 100s, 1,000s

Y3 NC Statement: Add and subtract numbers mentally, including: a 3-digit number and ones; a 3-digit number and tens; a 3-digit number and hundreds

- adding 1s, 10s, 100s, to a three-digit number, without crossing the tens boundary;
- subtracting 1s, 10s, 100s, from a three-digit number, without crossing the tens boundary.
- Adding and subtracting 1s, 10s, 100s, and 1,000s to and from a four-digit number, without crossing the tens boundary;

Resources

Y3/4 White Rose Maths Step 1: Add and subtract 1s, 10s, 100s, 1,000s

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p><u>Add 1s, 10s, 100s, 1,000s across a boundary</u> Y3 NC Statement: Add and subtract numbers mentally, including: a 3-digit number and ones; a 3-digit number and tens; a 3-digit number and hundreds</p> <ul style="list-style-type: none"> • adding 1s, 10s, 100s, to a three-digit number, crossing the tens boundary; <p><u>Resources</u> Y3/4 White Rose Maths Step 2: Add 1s, 10s, 100s, 1,000s across a boundary</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Subtract 1s, 10s, 100s across a boundary</u> Y3 NC Statement: Add and subtract numbers mentally, including: a 3-digit number and ones; a 3-digit number and tens; a 3-digit number and hundreds</p> <ul style="list-style-type: none"> • subtracting 1s, 10s, 100s, from a three-digit number, crossing the tens boundary. <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Subtract 1s, 10s, 100s, 1,000s across a boundary</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Make connections</u> Y3 NC Statement: Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds.</p> <p>Scale addition and subtraction facts by ten through:</p> <ul style="list-style-type: none"> • scaling addition and subtraction facts within ten; • scaling addition and subtraction facts bridging ten; • using these facts to solve problems <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Make connections</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Add up to two 4-digit numbers (no exchange)</u> Y3 NC Statement: Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Y4 NC Statement: Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Add four-digit numbers using column addition without regrouping through:</p> <ul style="list-style-type: none"> • adding one-digit numbers using mental recall; • adding the digits in the smallest place value column first; • writing a single digit in the answer box of each place value column. <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Add up to two 4-digit numbers (no exchange)</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Add up to two 4-digit numbers (across 10, 100, 1,000)</u> Y3 NC Statement: Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Y4 NC Statement: Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Use column addition with more than one regroup through:</p> <ul style="list-style-type: none">• adding one-digit numbers using mental recall;• adding the digits in the smallest place value column first;• regrouping into the next place value column if the total is ten or over;• writing a single digit in the answer box of each place value column. <p><u>Resources</u> Y3/4 White Rose Maths Step 6: Add up to two 4-digit numbers (across 10) Y3/4 White Rose Maths Step 7: Add up to two 4-digit numbers (across 100) Y3/4 White Rose Maths Step 8: Add up to two 4-digit numbers (across 1,000)</p> <p>*Build this step by teaching skill at a basic level. Adding two two-digit numbers and then applying the skill to larger numbers</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
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<p><u>Add numbers with a different number of digits</u> Y3 NC Statement: Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Y4 NC Statement: Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Use column addition with more than one regroup through:</p> <ul style="list-style-type: none"> • adding one-digit numbers using mental recall; • adding the digits in the smallest place value column first; • regrouping into the next place value column if the total is ten or over; • writing a single digit in the answer box of each place value column. <p><u>Resources</u> Y3/4 White Rose Maths Step 9: Add numbers with a different number of digits</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Subtract up to two 4-digit numbers (no exchange)</u> Y3 NC Statement: Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Y4 NC Statement: Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Subtract four-digit numbers using column subtraction without exchanging through:</p> <ul style="list-style-type: none"> • subtract one-digit numbers using mental recall; • subtract the digits in the smallest place value column first; • writing a single digit in the answer box of each place value column. <p><u>Resources</u> Y3/4 White Rose Maths Step 10: Subtract up to two 4-digit numbers (no exchange)</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Subtract up to two 4-digit numbers (across 10, 100, 1,000)</u></p> <p>Y3 NC Statement: Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</p> <p>Y4 NC Statement: Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Use column subtraction of four-digit numbers with one exchange through:</p> <ul style="list-style-type: none"> • subtracting one-digit numbers using mental recall; • subtracting the digits in the smallest place value column first; • exchanging into the next place value column if the number being subtracted from is smaller than the number being subtracted; • writing a single digit in the answer box of each place value column. <p><u>Resources</u></p> <p>Y3/4 White Rose Maths Step 11: Subtract up to two 4-digit numbers (across 10)</p> <p>*Build this step by teaching skill at a basic level. Subtracting two two-digit numbers and then applying the skill to larger numbers</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p>Complements to 100 and 1,000</p> <p>Y3 NC Statement: Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds.</p> <p>Calculate number bonds of one hundred through:</p> <ul style="list-style-type: none"> • using number bonds of ten to calculate multiples of ten bonds of one hundred; • using a hundred grid to represent number bonds of one hundred; • using a part-whole model to calculate number bonds of one hundred; • calculating tens and ones number bonds of one hundred. <p>Resources</p> <p>Y3/4 White Rose Maths Step 15: Complements to 100 and 1,000</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Estimate answers</p> <p>Y3 NC Statement: Estimate the answer to a calculation and use inverse operations to check answers.</p> <p>Y4 NC Statement: Estimate and use inverse operations to check answers to a calculation.</p> <p>Estimate to check answers through:</p> <ul style="list-style-type: none"> • finding near numbers; • using near numbers to estimate the answers to addition calculations; • using near numbers to estimate the answers to subtraction calculations. • rounding to the nearest hundred to estimate the answer to addition and subtraction calculations; • rounding to the nearest thousand to estimate the answer to addition and subtraction calculations; • solving problems involving estimation. <p>Resources</p> <p>Y3/4 White Rose Maths Step 16: Estimate answers</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Inverse operations</u> Y3 NC Statement: Estimate the answer to a calculation and use inverse operations to check answers. Y4 NC Statement: Estimate and use inverse operations to check answers to a calculation.</p> <p>Explore the links between addition and subtraction through: using visual representations to write all related addition calculations;</p> <ul style="list-style-type: none">• using visual representations to write all related subtraction calculations;• using the correct names for the terms in addition and subtraction calculations. <p><u>Resources</u> Y3/4 White Rose Maths Step 17: Inverse operations</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p>Efficient methods</p> <p>Y3 NC Statement: Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p> <p>Y4 NC Statement: Practise mental methods with increasingly large numbers to aid fluency (non-statutory).</p> <p>Learn to subtract efficiently through:</p> <ul style="list-style-type: none">• counting backwards from one number to another, where there is a small difference;• counting forwards from one number to another, where there is a small difference;• making adjustments to numbers to make a column method easier. <p>Resources</p> <p>Y3/4 White Rose Maths Step 18: Efficient methods</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Evaluation of Learning</p>		

Autumn Term – 4 Weeks

Number: Multiplication and Division A

Year 3

Pupils should be taught to:

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

Year 4

Pupils should be taught to:

- recall multiplication and division facts for multiplication tables up to 12×12
- 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
- recognise and use factor pairs and commutativity in mental calculations
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Progressive Planning

Small Step

Arrays

Y3 NC Statement: Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know.

- building arrays out of concrete resources;
- describing arrays using mathematical statements;
- using arrays to solve multiplication calculations.

Resources

Y3/4 White Rose Maths Step 1: Arrays

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p>Sharing and grouping</p> <p>Y3 NC Statement: Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs.</p> <ul style="list-style-type: none"> • sharing objects equally into groups; • using skip counting as an efficient method to divide by sharing; solving division problems by using sharing. • identifying the amount of groups and items in each group; • calculating the amount of items altogether; • creating equal groups from a given amount of items. <p>Resources</p> <p>Y3/4 White Rose Maths Step 2: Sharing and grouping</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>The 2, 5 and 10 times-tables</p> <p>Y3 NC Statement: Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.</p> <p>Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <ul style="list-style-type: none"> • counting in tens; • spotting patterns within multiples of ten; • recalling multiplication facts up to 12×10 • counting in fives; • spotting patterns within multiples of five; • recalling multiplication facts up to 12×5. • counting in twos; • spotting patterns within multiples of two; • recalling multiplication facts up to 12×2. <p>Resources</p> <p>Y3/4 White Rose Maths Step 3: The 2, 5 and 10 times-tables</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>The 4 times-table</u> Y3 NC Statement: Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>Become more fluent in the four times table through:</p> <ul style="list-style-type: none"> • constructing fact families; • using manipulatives and pictorial representations; • deriving unknown facts by using mental strategies. <p><u>Resources</u> Y3/4 White Rose Maths Step 4: The 4 times-table</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>The 8 times-table</u> Y3 NC Statement: Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>Become more fluent in the eight times table through:</p> <ul style="list-style-type: none"> • using manipulatives and pictorial representations; • deriving unknown facts by using mental strategies; • deriving unknown facts by partitioning <p><u>Resources</u> Y3/4 White Rose Maths Step 5: The 8 times-table</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>The 2, 4 and 8 times-tables</u> Y3 NC Statement: Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>Make connections between the two, four and eight times table through:</p> <ul style="list-style-type: none"> • linking multiplying by four to doubling and doubling again; • recognising that dividing by four is the same as halving and halving again; • applying knowledge of known facts <p><u>Resources</u> Y3/4 White Rose Maths Step 6: The 2, 4 and 8 times-tables</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>The 3 times-table</u> Y3 NC Statement: Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>Become more fluent in the three times table through:</p> <ul style="list-style-type: none"> • constructing fact families; • using manipulatives and pictorial representations; • deriving unknown facts by using mental strategies. <p><u>Resources</u> Y3/4 White Rose Maths Step 7: The 3 times-table</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>The 6 times-table</u> Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>Multiply and divide numbers by six through:</p> <ul style="list-style-type: none"> exploring multiplication by six using pictures and stem sentences; dividing numbers by six using sharing and grouping; using arrays of multiples of six to find multiplication and division facts. <p><u>Resources</u> Y3/4 White Rose Maths Step 8: The 6 times-table</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>The 9 times- table</u> Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>Use known facts to become more fluent in using the nine times table through:</p> <ul style="list-style-type: none"> using knowledge of other times tables to find values for the nine times table; investigating the digit sum to identify multiples of nine; looking for patterns to identify multiples of nine. <p><u>Resources</u> Y3/4 White Rose Maths Step 9: The 9 times- table</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>The 3, 6 and 9 times-tables</u> Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>Embed fluency of the three, six and nine times tables through:</p> <ul style="list-style-type: none"> exploring the structure of the times tables using resources such as arrays and hundred squares; reasoning and exploring number facts to look for structural patterns within the times tables. <p><u>Resources</u> Y3/4 White Rose Maths Step 10: The 3, 6 and 9 times-tables</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>The 7 times-table</u> Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>Make the link between repeated addition and multiplication, using knowledge of multiples and counting in sevens through:</p> <ul style="list-style-type: none"> using a range of concrete and pictorial representations to deepen their understanding of multiplying by seven; exploring flexible partitioning to multiply by seven; dividing by seven through sharing into seven equal groups and grouping into sevens. <p><u>Resources</u> Y3/4 White Rose Maths Step 11: The 7 times-table</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>The 11 times-table</u> Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12. Use known facts to become more fluent in using the eleven times table through:</p> <ul style="list-style-type: none"> partitioning eleven into ten and one and using known facts to multiply by eleven; making links between multiplying and dividing by eleven; dividing by eleven through sharing into eleven equal groups and grouping into eevens. <p><u>Resources</u> Y3/4 White Rose Maths Step 12: The 11 times-table</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>The 12 times-table</u> Y4 NC Statement: Recall multiplication and division facts for multiplication tables up to 12×12. Use known facts to become more fluent in using the twelve times table through:</p> <ul style="list-style-type: none"> partitioning twelve into ten and two and using known facts to multiply by twelve; making links between multiplying and dividing by twelve; dividing by twelve through sharing into twelve equal groups and grouping into twelves. <p><u>Resources</u> Y3/4 White Rose Maths Step 13: The 12 times-table</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p>Multiply by 1 and 0</p> <p>Y4 NC Statement: 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.</p> <p>Multiply numbers by one and zero through:</p> <ul style="list-style-type: none"> • multiplying a whole number by one and zero, writing sentences and drawing pictures to help; • making generalisations about factors and products when multiplying by one; • making generalisations about factors and products when multiplying by zero <p>Resources</p> <p>Y3/4 White Rose Maths Step 14: Multiply by 1 and 0</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Divide a number by 1 and itself</p> <p>Y4 NC Statement: 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.</p> <p>Apply their knowledge of division and what happens to a number when they divide it by one or itself through:</p> <ul style="list-style-type: none"> • using concrete and pictorial representations to understand the difference between dividing by one or itself; • using stem sentences to understand the difference between dividing by one or itself. <p>Resources</p> <p>Y3/4 White Rose Maths Step 15: Divide a number by 1 and itself</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

Evaluation of Learning

Autumn Term – 1 Week

Measurement: Area

Year 3

Year 4

Pupils should be taught to:

- find the area of rectilinear shapes by counting squares

Progressive Planning

Small Step

Planning Notes

Next Steps

What is Area?

Y4 NC Statement: Find the area of rectilinear shapes by counting squares.

- What area is and how it can be measured.
- Count both whole and half squares
- How multiples can be used to find the area of rectangles.

Resources

Y3/4 White Rose Maths Step 1: What is Area?

Y3/4 White Rose Maths Step 2: Count squares

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

<p>Compare areas Y4 NC Statement: Find the area of rectilinear shapes by counting squares.</p> <ul style="list-style-type: none">• Apply measuring skills and compare areas deciding which is greater and smaller. <p>Resources Y3/4 White Rose Maths Step 3: Compare areas</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Evaluation of Learning</p>		

Spring Term – 3 Weeks

Number: Multiplication and Division B

Year 3

Pupils should be taught to:

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

Year 4

Pupils should be taught to:

- recall multiplication and division facts for multiplication tables up to 12×12
- 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
- recognise and use factor pairs and commutativity in mental calculations
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Progressive Planning

Small Step

Factor pairs

Y4 NC Statement: Recognise and use factor pairs and commutativity in mental calculations.

Children will learn to identify factor pairs of a number through:

- using concrete resources to build arrays to represent numbers;
- finding pairs of factors that multiply to give a product;
- discovering how to work systematically.

Resources

Y3/4 White Rose Maths Step 1: Factor pairs

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p><u>Multiply and divide by 10 and 100</u> Y3 NC Statement: Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</p> <p>Complete calculations related to known facts through:</p> <ul style="list-style-type: none"> • scaling facts accurately by 10; • using representations to explore related calculations; • solving related multiplication and division calculations using known facts. <p><u>Resources</u> Y3/4 White Rose Maths Step 2: Multiply and divide by 10 and 100</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Reasoning about multiplication</u> Y3 NC Statement: Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</p> <p>Compare multiplication expressions through:</p> <ul style="list-style-type: none"> • representing multiplication expressions using counters and arrays; • identifying the expressions that give the greatest product; using the < and > = symbols to compare expressions; • giving reasons for their answers. <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Reasoning about multiplication</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Multiply three numbers</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Multiply three numbers</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Efficient multiplication</u> Y4 NC Statement: 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.</p> <p>Children will learn to choose an efficient method when solving multiplication calculations through:</p> <ul style="list-style-type: none"> • considering a range of methods; • selecting a method that enables quick and accurate calculating; • explaining why certain methods are efficient <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Efficient multiplication</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<ul style="list-style-type: none"> partitioning a 2/3-digit number, multiplying both parts by a 1-digit number and adding the partial products together; solving problems involving multiplication of 2/3-digit numbers by 1-digit numbers with regrouping <p>Resources Y3/4 White Rose Maths Step 9: Multiply up to a 2/3-digit number by a 1-digit number – with exchange</p>	<p>Reasoning:</p>	
<p>Related calculation – multiplication and division Y3 NC Statement: 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.</p> <p>Children will learn to use known multiplication and division facts to solve related calculations through:</p> <ul style="list-style-type: none"> creating fact families that include multiplication and division statements; creating related calculations based on known multiplication and division facts; using related calculations to help with problem-solving. <p>Resources Y3/4 White Rose Maths Step 10: Related calculation – multiplication and division</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Divide by a 1-digit number – flexible partitioning</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 11: Divide by a 1-digit number – flexible partitioning</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Divide up to a 3-digit number by a 1-digit number – no exchange</u></p> <p>Y3 NC Statement: Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</p> <p>Y4 NC Statement: Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers (non statutory).</p> <p>Children will learn to divide a two-digit number by a one-digit number with no exchange through:</p> <ul style="list-style-type: none"> • using visual representations to calculate the division of a 2-digit number by a 1-digit number; • using simple partitioning to solve • divisions of a 2-digit number by a 1-digit number; • solving problems involving the division of a 2-digit number by a 1-digit number with no exchange • Progress all of the above to 3 digit numbers <p><u>Resources</u></p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p>Y3/4 White Rose Maths Step 12: Divide up to a 3-digit number by a 1-digit number – no exchange</p>		
<p><u>Divide up to a 3-digit number by a 1-digit number – with exchange</u> Y3 NC Statement: Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</p> <p>Children will learn to divide a two-digit number by a one-digit number using flexible partitioning through:</p> <ul style="list-style-type: none"> • partitioning numbers into tens and ones; • partitioning numbers where the tens boundary would be crossed; • using flexible partitioning to divide larger 2-digit numbers by 1-digit numbers; • solving problems using flexible partitioning. <p><u>Resources</u> Y3/4 White Rose Maths Step 13: Divide up to a 3-digit number by a 1-digit number – with exchange</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Kilometres, meters, centimetres and millimetres</u> Y4 NC Statement: Estimate, compare and calculate different measures, including money in pounds and pence.</p> <p>Children compare and order mixed measurements of length, by converting measurements so that they are all in the same unit of length.</p> <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Kilometres, meters, centimetres and millimetres</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Equivalent lengths</u> Y3 NC Statement: Measure, compare, add and subtract lengths (m/cm/mm).</p> <p>The children are regularly encouraged to share, discuss and investigate, building on existing knowledge and developing deep understanding. Well-structured teaching slides begin by developing the children’s understanding of how to accurately use comparison language and symbols to compare different lengths and heights. They will explore the importance of using the same unit of measurement before comparing.</p> <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Equivalent lengths</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Add and subtract lengths</u> Y3 NC Statement: Measure, compare, add and subtract lengths (m/cm/mm).</p> <p>The children are encouraged to share, discuss and investigate, building on existing knowledge and developing a deeper understanding. Comprehensive teaching slides begin by developing the children’s understanding of how to accurately use the column method for addition and subtraction to find the total length of measurements with the same unit. Children use bar models and part-whole models to help them visualise the calculations.</p> <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Add and subtract lengths</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Understand perimeter</u> Y4 NC Statement: Measure and calculate the perimeter of a rectilinear figure in centimetres and metres.</p> <ul style="list-style-type: none"> • find perimeters of rectilinear shapes • use more efficient methods to calculate the perimeter of rectangles and squares • use knowledge of the properties of the shapes. <p><u>Resources</u> Y3/4 White Rose Maths Step 6: What is perimeter? Y3/4 White Rose Maths Step 7: Calculate perimeter</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Perimeter of rectilinear shapes</u></p> <p>Y4 NC Statement: Measure and calculate the perimeter of a rectilinear figure in centimetres and metres.</p> <ul style="list-style-type: none"> • use efficient methods to add several measurements. • calculate any unknown sides to enable them to calculate the perimeter. <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Perimeter of rectilinear shapes Y3/4 White Rose Maths Step 9: Calculate rectilinear shapes</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Perimeter of polygons</u></p> <p>Y4 NC Statement: Measure and calculate the perimeter of a rectilinear figure in centimetres and metres.</p> <ul style="list-style-type: none"> • use efficient methods to add several measurements. • calculate any unknown sides to enable them to calculate the perimeter. • use knowledge of the properties of the shapes. <p><u>Resources</u> Y3/4 White Rose Maths Step 10: Perimeter of polygons</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

Evaluation of Learning

Spring Term – 3 Weeks

Number: Fractions A

Year 3

Pupils should be taught to:

- count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
- recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- recognise and show, using diagrams, equivalent fractions with small denominators
- add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
- compare and order unit fractions, and fractions with the same denominators
- solve problems that involve all of the above

Year 4

Pupils should be taught to:

- recognise and show, using diagrams, families of common equivalent fractions
- count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10
- 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
- add and subtract fractions with the same denominator

Progressive Planning

Small Step

Understand denominators

Resources

Y3/4 White Rose Maths Step 1: Understand denominators

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p><u>Compare and order unit fractions</u> Y3 NC Statement: Compare and order unit fractions, and fractions with the same denominators.</p> <p>Children will learn to compare and order unit fractions through:</p> <ul style="list-style-type: none"> • comparing unit fractions using bar models; • ordering unit fractions using bar models; • using a rule about the denominators of unit fractions to compare and order <p><u>Resources</u> Y3/4 White Rose Maths Step 2: Compare and order unit fractions</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Understand numerators</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Understand numerators</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Understand the whole</u> Y3 NC Statement: Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</p> <p>Children will learn to recognise and use fractions as parts of a whole through:</p> <ul style="list-style-type: none"> • using shapes to work out how many equal parts a whole has been divided into; • recognising unit and non-unit fractions of a whole; • solving statements where fractions total a whole. <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Understand the whole</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Fractions on a number line</u> Y3 NC Statement: Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>Children will learn to reason about the position of fractions on number lines up to one whole through:</p> <ul style="list-style-type: none"> • identifying the number of equal parts on a number line; • labelling number lines up to one whole in fractions; • placing or estimating the value of fractions on unlabelled number lines. <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Fractions on a number line</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Compare and order non-unit fractions</u> Y3 NC Statement: Compare and order unit fractions, and fractions with the same denominators.</p> <p>Children will learn to compare and order non-unit fractions through:</p> <ul style="list-style-type: none"> • comparing and ordering non-unit fractions using bar models; • ordering a mix of unit fractions and non-unit fractions using bar models; • making links between comparing and ordering fractions with different denominators and non-unit fractions with the same denominator. <p>Resources Y3/4 White Rose Maths Step 6: Compare and order non-unit fractions</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Equivalent fractions</u> Y3 NC Statement: Recognise and show, using diagrams, equivalent fractions with small denominators. Y4 NC Statement: Recognise and show, using diagrams, families of common equivalent fractions.</p> <p>Children will learn to find equivalent fractions using number lines through:</p> <ul style="list-style-type: none"> • using given number lines to find equivalent fractions; • drawing own number lines where 0 and 1 are lined up to find equivalent fractions; • adding increments to a given number line to find further equivalent fractions. <p>Children will learn to find equivalent fractions using bar models through:</p> <ul style="list-style-type: none"> • comparing two bar models of equal length divided into different amounts to identify any equivalent fraction; • comparing multiple bar models to find families of equivalent fractions; • exploring patterns of equivalent fractions. 	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Resources</u> Y3/4 White Rose Maths Step 7: Equivalent fractions</p>		
<p><u>Count beyond 1</u> Y4 NC Statement: Practise counting using simple fractions and decimals, both forwards and backwards (non-statutory).</p> <p>Children will learn to identify fractions greater than 1 through:</p> <ul style="list-style-type: none"> • identifying how many equal parts make a whole; • identifying the number of wholes; • identifying how many parts of a whole are left. <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Count beyond 1</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Partition a mixed number</u> <u>Y4</u></p> <p>Children will learn to partition a mixed number through:</p> <ul style="list-style-type: none"> • partitioning into whole numbers and proper fractions; • completing statements to show how a mixed number has been partitioned; • finding different ways to partition a mixed number. <p><u>Resources</u> Y3/4 White Rose Maths Step 9: Partition a mixed number</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Compare and order mixed numbers</u> <u>Y4</u></p> <p>Children will learn to compare and order mixed numbers through:</p> <ul style="list-style-type: none"> • representing mixed numbers using bar models; • comparing whole numbers first and then proper fractions; • sequencing mixed numbers in ascending and descending order. <p><u>Resources</u> Y3/4 White Rose Maths Step 10: Compare and order mixed numbers</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Understand improper fractions</u> <u>Y4</u></p> <p>Children will learn to recognise and use improper fractions through:</p> <ul style="list-style-type: none"> • identifying proper and improper fractions; • comparing improper fractions to whole numbers; • positioning improper fractions and mixed numbers on a number line. <p><u>Resources</u> Y3/4 White Rose Maths Step 11: Understand improper fractions</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Convert improper fractions to mixed numbers</u> <u>Y4</u></p> <p>Children will learn to convert mixed numbers to improper fractions through:</p> <ul style="list-style-type: none"> • converting mixed numbers to improper fractions using pictorial representations and bar models; • using a number line to show where mixed numbers and improper fractions have the same value; • using multiplication to convert mixed numbers to improper fractions. <p><u>Resources</u> Y3/4 White Rose Maths Step 12: Convert mixed numbers to improper fractions</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Convert improper fractions to mixed numbers</u> <u>Y4</u></p> <p>Children will learn to convert improper fractions to mixed numbers through:</p> <ul style="list-style-type: none"> • using pictorial representations to convert improper fractions to mixed numbers; • grouping counters to convert improper fractions to mixed numbers; • using division to convert improper fractions to mixed numbers. <p><u>Resources</u> Y3/4 White Rose Maths Step 13: Convert improper fractions to mixed numbers</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Equivalent fraction families</u> Y4 NC Statement: Recognise and show, using diagrams, families of common equivalent fractions.</p> <p>Children will learn to identify equivalent fraction families through:</p> <ul style="list-style-type: none">• understanding that equivalent fractions have the same value;• using a bar model to identify equivalent fractions;• using a fraction wall to identify equivalent fractions;• explaining why one fraction is equivalent to another. <p><u>Resources</u> Y3/4 White Rose Maths Step 14: Equivalent fraction families</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
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Spring Term– 2 Weeks

Measurement: Mass and Capacity

Year 3

Pupils should be taught to:

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

Year 4

Pupils should be taught to:

- convert between different units of measure [for example, kilometre to metre; hour to minute]

Progressive Planning

Small Step

Measure mass in grams

Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).

Children will learn to measure mass in grams through:

- calculating intervals on a scale;
- identifying the number of grams being shown on a scale;
- using addition to calculate the total number of grams

Resources

Y3/4 White Rose Maths Step 1: Measure mass in grams

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p><u>Measure mass in kilograms and grams</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Children will learn to measure mass in kilograms and grams through:</p> <ul style="list-style-type: none"> • defining mass; • saying how many grams are in 1kg; • calculating the value of the intervals on a scale; • reading scales to measure a mass in kilograms and grams. <p><u>Resources</u> Y3/4 White Rose Maths Step 2: Measure mass in kilograms and grams</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Equivalent masses</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Children will learn to identify equal masses through:</p> <ul style="list-style-type: none"> • converting accurately between grams and kilograms; • adding and subtracting to make amounts of grams up to 1 kilogram; • identifying halves and quarters of kilograms. <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Equivalent masses volume</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Compare mass</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Children will learn to compare the masses of objects in grams and kilograms through:</p> <ul style="list-style-type: none"> • comparing mass by scaling; • recognising that kilograms are heavier than grams; • comparing masses that combine kilograms and grams; • reading scales to compare mass; • ordering objects by mass <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Compare mass</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Add and subtract mass</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>Children will learn to add and subtract mass through:</p> <ul style="list-style-type: none"> • using part-whole models and bar models to represent calculations; • identifying which operation is needed when adding and subtracting masses; • partitioning masses into kilograms and grams to add and subtract masses mentally <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Add and subtract mass</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Measure capacity and volume in millilitres</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Children will learn to measure capacity and volume in millilitres through:</p> <ul style="list-style-type: none"> • understanding the difference between capacity and volume; • dividing a scale into equal parts to calculate the value of the intervals; • reading scales to measure in millilitres. <p><u>Resources</u> Y3/4 White Rose Maths Step 6: Measure capacity and volume in millilitres</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Measure capacity in volume and millilitres and litres</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Children will learn to measure capacity and volume in litres and millilitres through:</p> <ul style="list-style-type: none"> • describing mixed amounts as ‘litres and millilitres’; • interpreting different scales; • exploring a range of different sized containers. <p><u>Resources</u> Y3/4 White Rose Maths Step 7: Measure capacity in volume and millilitres and litres</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Equivalent capacities and volumes</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>Children will learn to identify equal capacities and volumes through:</p> <ul style="list-style-type: none"> • identifying the number of millilitres in a litre; • adding and subtracting millilitres up to 1 litre; • calculating fractions of a litre. <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Equivalent capacities and volumes</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Compare capacity and volume</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Children will learn to compare capacities and volumes through:</p> <ul style="list-style-type: none"> • comparing capacities and volumes using visual estimation; • using key language to compare capacities and volumes; • recording ideas using comparison symbols. <p><u>Resources</u> Y3/4 White Rose Maths Step 9: Compare capacity and volume</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Add and subtract capacity and volume</u> Y3 NC Statement: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Children will learn to add and subtract capacity and volume through:</p> <ul style="list-style-type: none">• using mixed units when adding and subtracting capacity and volume;• using part-whole models and the formal method to support their understanding;• applying mental addition and subtraction skills. <p><u>Resources</u> Y3/4 White Rose Maths Step 10: Add and subtract capacity and volume</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
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Spring Term – 2 Weeks

Number: Fractions B

Year 3

Pupils should be taught to:

- count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
- recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- recognise and show, using diagrams, equivalent fractions with small denominators
- add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
- compare and order unit fractions, and fractions with the same denominators
- solve problems that involve all of the above

Year 4

Pupils should be taught to:

- recognise and show, using diagrams, families of common equivalent fractions
- count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10
- 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
- add and subtract fractions with the same denominator

Progressive Planning

Small Step

Add fractions

Y3 NC Statement: Add and subtract fractions with the same denominator within one whole.

Children will learn to add fractions with the same denominator through:

- using bar models to add fractions with the same denominator;
- using number lines to add fractions with the same denominator;
- adding the numerators to add fractions with the same denominator.

Resources

Y3/4 White Rose Maths Step 1: Add fractions

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p><u>Add fractions and mixed numbers</u> Y4 NC Statement: Add and subtract fractions with the same denominator</p> <p>Children will learn to add a proper fraction to a mixed number with the same denominator through:</p> <ul style="list-style-type: none"> • using bar models to add a proper fraction to a mixed number; • using number lines to add a proper fraction to a mixed number; • partitioning a proper fraction to help when adding to a mixed number. <p><u>Resources</u> Y3/4 White Rose Maths Step 2: Add fractions and mixed numbers</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Subtract fractions</u> Y3 NC Statement: Add and subtract fractions with the same denominator within one whole.</p> <p>Children will learn to subtract fractions with the same denominator through:</p> <ul style="list-style-type: none"> • taking away; • counting back; • finding the difference. <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Subtract fractions</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Subtract from whole numbers</u> Y4 NC Statement: Add and subtract fractions with the same denominator.</p> <p>Children will learn to subtract fractions from whole numbers through:</p> <ul style="list-style-type: none"> • subtracting a proper fraction from a whole number; • subtracting a mixed number from a whole number; • subtracting an improper fraction from a whole number. <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Subtract from whole numbers</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Subtract from mixed numbers</u> Y4 NC Statement: Add and subtract fractions with the same denominator.</p> <p>Children will learn to subtract whole numbers and fractions from mixed numbers through:</p> <ul style="list-style-type: none"> • understanding the difference between a mixed number, whole number and fraction; • using a bar model to subtract a whole number from a mixed number; • using bar models, number lines and part-whole models to subtract a fraction from a mixed number <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Subtract from mixed numbers</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Unit fractions of an amount</u> Y3 NC Statement: Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</p> <p>Children will learn to calculate unit fractions of a quantity through:</p> <ul style="list-style-type: none"> • finding a unit fraction of a quantity by dividing the whole amount by the denominator and sharing the answer into equal groups; • using a bar model to calculate a unit fraction of a whole number; • finding the whole amount in a missing number calculation; • completing sentence stems linked to finding fractions of a quantity. <p><u>Resources</u> Y3/4 White Rose Maths Step 6: Unit fractions of an amount</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Non-unit fractions of an amount</u> Y3 NC Statement: Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</p> <p>Children will learn to calculate non-unit fractions of a quantity through:</p> <ul style="list-style-type: none"> • finding a unit fraction of a quantity by dividing the whole amount by the denominator and sharing the answer into equal groups; • finding a non-unit fraction of a quantity by multiplying the unit fraction amount by the numerator; • using a bar model to calculate a non-unit fraction of a whole number; • finding the whole amount in a missing number calculation; • completing sentence stems linked to finding fractions of a quantity 	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Resources</u> Y3/4 White Rose Maths Step 7: Non-unit fractions of an amount</p>		
<p><u>Reasoning with fractions of an amount</u> Y4</p> <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Reasoning with fractions of an amount</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

Summer Term – 2 Weeks

Measurement: Time

Year 3

Pupils should be taught to:

- 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 [for example, to calculate the time taken by particular events or tasks]

Year 4

Pupils should be taught to:

- convert between different units of measure [for example, kilometre to metre; hour to minute]
- read, write and convert time between analogue and digital 12- and 24-hour clocks
- solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days

Progressive Planning

Small Step

Tell the time to 5 minutes

Y3 NC Statement: Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.

- The teacher models how to tell the time to five minutes. On blank clock faces, children show given times both to and past the hour and check the answers as a class.
- In the differentiated activity, children read and record times. Children tell the time to five minutes.

Resources

Y3/4 White Rose Maths Step 1: Tell the time to 5 minutes

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p><u>Read time of a digital clock</u> Y5 NC Statement: Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</p> <ul style="list-style-type: none"> The teacher introduces children to the differences between digital and analogue clocks, recaps minutes in an hour and models how to read a digital clock to 15-minute intervals, progressing to 5-minute intervals. In pairs, children show digital times on analogue clocks and in words. Children then complete activities showing matching times on digital and analogue clock faces. <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Read time of a digital clock</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Use a.m. and p.m.</u> Y3 NC Statement: Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks Y4 NC Statement: Read, write and convert time between analogue and digital 12- and 24-hour clocks</p> <ul style="list-style-type: none"> The teacher uses a.m. and p.m. to show that each 12-hour time happens twice in a day. The children are shown two visual representations of how 24-hour times match 12-hour times. The class practises converting between 12-hour and 24-hour times, including in context. Independently, they convert times on a timetable, then order times in the plenary. <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Use a.m. and p.m.</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Covert between analogue and digital times</u> Y4 NC Statement: Convert between different units of measure [for example, kilometre to metre; hour to minute]</p> <ul style="list-style-type: none"> In this appealing lesson, children convert from one time unit to another – seconds to minutes and vice versa and minutes to hours and vice versa. They learn how to multiply by 60 by counting in sixes, then multiplying this by 10. <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Covert between analogue and digital times</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Convert between 12- and 24- hour clocks</u> Y4 NC Statement: Read, write and convert time between analogue and digital 12- and 24-hour clocks.</p> <ul style="list-style-type: none"> Children convert 12-hour digital times to analogue times, writing the time in numbers and words. They write times that are shown on an analogue clock in 12-hour digital form <p><u>Resources</u> Y3/4 White Rose Maths Step 6: Convert between 12- and 24-hour clocks</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Hours, minutes and seconds</u> Y3 NC Statement: Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours.</p> <ul style="list-style-type: none"> • Children work out the differences in marathon record times given in hours and minutes, guided by the teacher. • In pairs, they order and compare flight times before independently ordering and comparing times in hours and minutes. • The children discuss seconds in a minute, estimate a minute passing and time a series of events in minutes and seconds. • Pairs order and compare times in a basketball game, then individuals repeat similar written activities around race times. <p><u>Resources</u> Y3/4 White Rose Maths Step 7: Hours, minutes and seconds</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Find and use durations</u> Y3</p> <ul style="list-style-type: none"> • Children apply their skills learnt in the previous lesson to a series of duration word problems. They are shown how to use a number line to count on in intervals of time and work in pairs to calculate durations of time posed as contextual problems. • Independently, they solve one-step word problems and work on timetable problems in the plenary. Children calculate and compare durations. <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Find and use durations</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p>Years, months, weeks and days</p> <p>Y4 NC Statement: Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.</p> <ul style="list-style-type: none"> Children learn how to solve problems involving converting from years to months and vice versa. They practise using mental multiplication strategies to multiply by 12, then apply this to calculate the number of months in different numbers of years. They use their knowledge of inverses to convert months to years by dividing by 12 and apply their skills to order children by age Children convert from weeks to days and vice versa. They use the skills they have learned to solve problems. The problems include the gestation periods of small animals. They use a calendar to calculate the amount of time from one date to another, writing the answer in both days and in weeks and days <p>Resources</p> <p>Y3/4 White Rose Maths Step 9: Years, months, weeks and days</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
Summer Term – 3 Weeks		
Measurement: Decimals		
Year 3	Year 4	
	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recognise and write decimal equivalents of any number of tenths or hundreds recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths round decimals with 1 decimal place to the nearest whole number compare numbers with the same number of decimal places up to 2 decimal places 	

- solve simple measure and money problems involving fractions and decimals to 2 decimal places

Progressive Planning

Small Step	Planning Notes	Next Steps
<p><u>Tenths as fractions</u> Y3 NC Statement: Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.</p> <p>Children will learn to recognise and represent tenths through:</p> <ul style="list-style-type: none"> • recognising what a tenth looks like; • matching pictures of tenths to fractions; • representing tenths as fractions in different ways. <p><u>Resources</u> Y3/4 White Rose Maths Step 1: Tenths as fractions</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Tenths as decimals</u> Y4 NC Statement: Recognise and write decimal equivalents of any number of tenths or hundredths.</p> <p>Children will learn to recognise and write decimal equivalents of any number of tenths through:</p> <ul style="list-style-type: none"> • reading and representing decimals on a place value grid; • knowing that the tenths column is to the right of the decimal point; • reading and representing tenths on a number line. <p><u>Resources</u></p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p>Y3/4 White Rose Maths Step 2: Tenths as decimals</p>		
<p><u>Tenths on a place value chart</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Tenths on a place value chart</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Tenths on a number line</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Tenths on a number line</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Hundredths as a fraction</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Hundredths as a fraction</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Hundredths as decimals</u> Y4 NC Statement: Recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>Children will learn to recognise and write decimal equivalents of any number of hundredths through:</p> <ul style="list-style-type: none"> • reading and representing decimals on a place value grid; • knowing that the hundredths column is to the right of the tenths column; • reading and representing hundredths on a number line. <p><u>Resources</u> Y3/4 White Rose Maths Step 6: Hundredths as decimals</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Hundredths on a place chart</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 7: Hundredths on a place chart</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Halves and quarters as decimals</u> Y4 NC Statement: Recognise and write decimal equivalents to one quarter, one half and three quarters.</p> <p>Children will learn to recognise and write decimal equivalents to $\frac{1}{2}$ $\frac{1}{4}$ $\frac{3}{4}$, and through:</p> <ul style="list-style-type: none"> • identifying fractions that are equivalent to $\frac{1}{2}$ $\frac{1}{4}$ $\frac{3}{4}$ • , and ; • recognising fraction representations that are equivalent to 0.25, 0.5 and 0.75; • using and applying halves and quarters to solve problems involving decimal equivalents <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Halves and quarters as decimals</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Make a whole</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 9: Make a whole</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Partition decimals</u></p> <p><u>Resources</u> Y3/4 White Rose Maths Step 10: Partition decimals</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Compare and order decimals</u> Y4 NC Statement: Compare numbers with the same number of decimal places up to two decimal places.</p> <p>Children will learn to compare and order decimal numbers through:</p> <ul style="list-style-type: none"> representing decimal numbers using counters on a place value chart; comparing decimal numbers by checking the place value of each digit; knowing that the number with the greatest place value is the greater number ordering decimals in ascending and descending order. <p><u>Resources</u> Y3/4 White Rose Maths Step 11: Compare and order decimals</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Round to the nearest whole number</u> Y4 NC Statement: Round decimals with one decimal place to the nearest whole number.</p> <p>Children will learn to round decimals to the nearest multiple of 1 through:</p> <ul style="list-style-type: none"> finding the previous and next multiple of 1; placing a decimal number on a number line; recognising the multiple of 1 it is closest to; rounding decimal numbers with 5 tenths up to the next multiple of 1. <p><u>Resources</u> Y3/4 White Rose Maths Step 12: Round to the nearest whole number</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Divide a number by 10</u> Y4 NC Statement: Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredth.</p> <p>Children will learn to divide 1 and 2-digit numbers by 10 through:</p> <ul style="list-style-type: none"> representing 1- and 2-digit numbers on a place value chart; moving counters or digits one place to the right; using a decimal point correctly when writing decimal numbers. <p><u>Resources</u> Y3/4 White Rose Maths Step 13: Divide a number by 10</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Divide a number by 100</u> Y4 NC Statement: Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredth.</p> <p>Children will learn to divide 1 and 2-digit numbers by 100 through:</p> <ul style="list-style-type: none"> representing 1- and 2-digit numbers on a place value chart; moving counters or digits two places to the right; using a decimal point correctly when writing decimal numbers. <p><u>Resources</u> Y3/4 White Rose Maths Step 14: Divide a number by 100</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

Summer Term – 2 Weeks

Measurement: Money

Year 3

Year 4

Pupils should be taught to:

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

Pupils should be taught to:

- estimate, compare and calculate different measures, including money in pounds and pence

Progressive Planning

Small Step

Planning Notes

Next Steps

Pounds and pence

Y3 NC Statement: To add and subtract amounts of money to give change, using both £ and p in practical contexts.

- Children will learn to recognise the value of coins and notes. They will be able to find the total value of a group of coins.
- Part/whole models are used to show children how to partition the amounts to calculate the pounds and pence a given set represents.

Resources

Y3/4 White Rose Maths Step 1: Pounds and pence

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

<p><u>Write money using decimals</u> Y4 NC Statement: Estimate, compare and calculate money in pounds and pence</p> <ul style="list-style-type: none"> Children count money amounts and record in a variety of ways, including the £ sign. <p><u>Resources</u> Y3/4 White Rose Maths Step 2: Write money using decimals</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Covert pounds and pence</u> Y3 NC Statement: To add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <ul style="list-style-type: none"> Children will build upon their place value knowledge of hundreds, tens and ones. This will help them use the fact that there are 100 pence in one pound to convert various amounts. Consolidation of the complements to one hundred is taught visually through the use of hundred square grids. Using a part-whole model and base ten, children can partition the values into pounds and pence. <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Covert pounds and pence</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Compare amounts of money</u> Y4 NC Statement: Estimate, compare and calculate money in pounds and pence.</p> <ul style="list-style-type: none"> Children begin by comparing and ordering money amounts with the same unit, then they move onto comparing and ordering with different units. They use cards to complete a variety of activities and games. <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Compare amounts of money</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Estimate with money</u> Y4 NC Statement: Estimate, compare and calculate money in pounds and pence.</p> <ul style="list-style-type: none"> To begin, children place money amounts on number lines and identify which whole pound they are closer to. They then look at digits and use a rule to decide whether to round amounts up or down to the nearest pound <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Estimate with money</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Add money</u> Y3 NC Statement: To add and subtract amounts of money to give change, using both £ and p in practical contexts</p> <ul style="list-style-type: none"> • Children learn two methods of adding money. • The first uses the part-whole method of adding pounds first, followed by pence. • The second uses exchanging between the amounts to create a more efficient calculation for the children to solve. • Through the teaching slides, children are encouraged to make decisions about money amounts given to help them decide on the most appropriate method to use. <p><u>Resources</u> Y3/4 White Rose Maths Step 6: Add money</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Subtract money</u> Y3 NC Statement: To add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <ul style="list-style-type: none"> • Beginning ng with part/whole models to show the missing amount that needs to be calculated, coins are moved from the whole to the parts at the bottom, clearly explaining the subtraction process. • Continuing with this approach, coins and notes are exchanged for this process to occur. This is then clearly linked to partitioning to take away the pounds first, then the pence. • When partitioning cannot be used as a method, the presentation explains how to use the number line to count back subtracting pounds and pence to find the amount <p><u>Resources</u> Y3/4 White Rose Maths Step 7: Subtract money</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Find change</u> Y3 NC Statement: To add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <ul style="list-style-type: none"> • Children learn how to calculate the amount of change required by finding the difference on a number line. • The lesson begins by showing children how change is calculated by crossing out the amount spent. • Children use number lines to calculate change that needs to be given. Children answer reasoning and problem-solving questions. <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Find change</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Solve problems with money</u> Y4 NC Statement: Estimate, compare and calculate money in pounds and pence.</p> <ul style="list-style-type: none"> • Children apply their ability to add and subtract money amounts to solve problems. • The lesson presentation demonstrates a range of methods to add, subtract, multiply and divide money amounts. <p><u>Resources</u> Y3/4 White Rose Maths Step 9: Solve problems with money</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

Summer Term – 2 Weeks

Geometry: Shape

Year 3

Pupils should be taught to:

- draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
- recognise angles as a property of shape or a description of a turn
- identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle
- identify horizontal and vertical lines and pairs of perpendicular and parallel lines

Year 4

Pupils should be taught to:

- compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- identify acute and obtuse angles and compare and order angles up to 2 right angles by size
- 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

Progressive Planning

Small Step

Turns and angles

Y3 NC Statement: 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.

Y4 NC Statement: Recognise angles as a property of shape or a description of a turn.

- Children become confident in recognising that a quarter turn is the same as a right angle turn and that two right angles make a half-turn, three right angles make a three-quarter turn, and four right angles make a complete turn.
- identifying turns as quarter, half, three-quarter or complete;
- describing turns using clockwise or anticlockwise;

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<ul style="list-style-type: none"> • understanding that an angle is the measure of turn between two straight lines; • recognising that two right angles make a half-turn, three right angles make a three-quarter turn, and four right angles make a complete turn. <p>Resources Y3/4 White Rose Maths Step 1: Turns and angles</p>		
<p>Identify angles Y4 NC Statement: Identify acute and obtuse angles and compare and order angles up to 2 right angles by size.</p> <p>Children will learn to identify angles through:</p> <ul style="list-style-type: none"> • identifying a quarter turn as a right angle; • recognising that a turn smaller than a right angle is an acute angle; • recognising that a turn greater than a right angle but less than a half turn is an obtuse angle; • identifying acute and obtuse angles. <p>Resources Y3/4 White Rose Maths Step 2: Identify angles</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Compare and order angles Y3 NC Statement: 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. Y4 NC Statement: Identify acute and obtuse angles and compare and order angles up to 2 right angles by size.</p> <p>Children will learn to compare and order angles through:</p> <ul style="list-style-type: none"> • comparing different types of angles; • comparing angles of the same type; • ordering angle sizes in ascending and descending order. 	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p>	

<p>Resources Y3/4 White Rose Maths Step 3: Compare and order angles</p>	<p>Reasoning:</p>	
<p>Types of lines Y3 NC Statement: Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p> <ul style="list-style-type: none"> Children become confident in identifying horizontal and vertical lines. Children recognise horizontal and vertical lines in shapes and in the environment. They also work on horizontal and vertical lines of symmetry. Children are taught what is meant by parallel and perpendicular and they identify sets of lines and parallel and perpendicular lines in shapes. <p>Resources Y3/4 White Rose Maths Step 4: Types of lines</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Triangles Y4 NC Statement: Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</p> <p>Children will learn to identify different types of triangles through:</p> <ul style="list-style-type: none"> recognising equilateral, isosceles, scalene and right-angled triangles; identifying the properties of different types of triangles; finding the perimeter of equilateral and isosceles triangles <p>Resources Y3/4 White Rose Maths Step 5: Triangles</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Quadrilaterals</u> Y4 NC Statement: Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</p> <p>Children will learn to identify and describe different quadrilaterals through:</p> <ul style="list-style-type: none"> • recalling the mathematical names of common quadrilaterals; • identifying the properties of common quadrilaterals; • comparing quadrilaterals and identifying similarities and differences in their properties. <p><u>Resources</u> Y3/4 White Rose Maths Step 6: Quadrilaterals</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Polygons</u> Y4 NC Statement: Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</p> <p>Children will learn to identify polygons and describe different polygons through:</p> <ul style="list-style-type: none"> • identifying the names and properties of common polygons; • recognising regular and irregular polygons; • calculating the perimeters of common polygons <p><u>Resources</u> Y3/4 White Rose Maths Step 7: Polygons</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Draw Polygons</u> Y4 NC Statement: Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</p> <p><u>Resources</u> Y3/4 White Rose Maths Step 8: Draw Polygons</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Symmetry</u> Y4 NC Statement: Identify lines of symmetry in 2-D shapes presented in different orientations</p> <p>Children will learn to identify lines of symmetry through:</p> <ul style="list-style-type: none"> • identifying the lines of symmetry in a shape; • identifying lines of symmetry when shapes are in different orientations; • comparing lines of symmetry in different shapes. <p><u>Resources</u> Y3/4 White Rose Maths Step 9: Symmetry</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>3-D shapes</u> Y3 NC Statement: Draw 2-D shapes and make 3-D shapes using modelling materials. Recognise 3-D shapes in different orientations and describe them.</p> <ul style="list-style-type: none">• Children to become confident in naming and describing properties of 3D shapes. A clear and well-structured teaching presentation guides the learning through describing the properties of polyhedrons using faces, edges and vertices and recognising and describing the properties of common prisms.• The differentiated activity sheets provide an opportunity to practise describing a range of 3D polyhedrons. <p><u>Resources</u> Y3/4 White Rose Maths Step 10: 3-D shapes</p>	<p>Date(s):</p> <p>Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
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Summer Term – 1 Week

Geometry: Position and Direction

Year 3

Pupils should be taught to:

- recognise angles as a property of shape or a description of a turn
- identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle

Year 4

Pupils should be taught to:

- describe positions on a 2-D grid as coordinates in the first quadrant
- describe movements between positions as translations of a given unit to the left/right and up/down
- plot specified points and draw sides to complete a given polygon

Progressive Planning

Small Step

Describe position using coordinates

Y4 NC Statement: Describe positions on a 2D grid as coordinates in the first quadrant.

- Children are reminded how to read coordinates and find missing x or y coordinates in pairs.
- Independently, children identify the position of a variety of sea creatures on a grid. This is followed by a coordinate treasure hunt game to play in pairs.

Resources

Y3/4 White Rose Maths Step 1: Describe position using coordinates

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

<p><u>Plot coordinates</u> Y4 NC Statement: Describe positions on a 2D grid as coordinates in the first quadrant.</p> <ul style="list-style-type: none"> Children draw and label their own coordinate grids, following the step-by-step instructions on the lesson presentation. Pairs use the grids to play a 3-in-a-row style game. In the independent task, children read coordinates of items and find them on a treasure map <p><u>Resources</u> Y3/4 White Rose Maths Step 2: Plot coordinates</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Draw 2-D shapes on a grid</u> Y4 NC Statement: Plot specified points and draw sides to complete a given polygon.</p> <ul style="list-style-type: none"> Children find hidden ingredients behind coordinates and identify incorrectly recorded coordinates. Children plot their own coordinates to create polygons on a grid and identify each shape. <p><u>Resources</u> Y3/4 White Rose Maths Step 3: Draw 2-D shapes on a grid</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p><u>Translate on a grid</u> Y4 NC Statement: Describe movements between positions as translations of a given unit to the left/right and up/down.</p> <ul style="list-style-type: none"> • The teacher guides children through a series of basic translations on a coordinate grid. Pairs match a written translation to a pictorial representation and self-assess their matches. • The whole class identifies correct and incorrect translation descriptions before individual pupils translate triangles <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Translate on a grid</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Describe translation on a grid</u> Y4 NC Statement: Describe movements between positions as translations of a given unit to the left/right and up/down.</p> <ul style="list-style-type: none"> • Children practise identifying translations and find missing instructions in two-step translations. • The teacher models writing the starting coordinate, translation and finishing coordinate before children independently identify these in the written activity. <p><u>Resources</u> Y3/4 White Rose Maths Step 5: Describe translation on a grid</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

Summer Term – 2 Weeks

Statistics

Year 3

Pupils should be taught to:

- interpret and present data using bar charts, pictograms and tables
- solve one-step and two-step questions [for example ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables

Year 4

Pupils should be taught to:

- 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

Progressive Planning

Small Step

Pictograms

Y3 NC Statement: Interpret and present data using bar charts, pictograms and tables.

- Children look at pictograms where one symbol represents one object, then compare this to a pictogram showing the same information but using one symbol to represent two objects.
- Children create a tally to show colours of cars in a car park and use the information to create a pictogram using one symbol to represent five objects. In pairs, they use their pictogram to answer questions.

Resources

Y3/4 White Rose Maths Step 1: Pictograms

Planning Notes

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

Next Steps

Interpret and Draw Bar charts

Y3 NC Statement: Interpret and present data using bar charts, pictograms and tables.

Y4 NC Statement: Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.

- Children practise reading tally charts, then use their own blank tally table to record the different shoe sizes in their class. The teacher guides the whole class through the vocabulary needed to label a bar chart and how to present data in this way. They create their own bar charts before answering a series of questions requiring them to interpret their charts
- Children are shown two bar charts depicting travel methods to school, one of which is shown on a scale that goes up in twos; they are introduced to scaled charts as a way of showing larger numbers of data. They complete a dice rolling tally table and present the data as a bar chart with a scale that goes up in twos, before interpreting the data in pairs.
- Children begin by matching numbers to bar chart representations in a bingo starter. They are presented with a table of data showing shadow lengths at points in the day and tasked with showing this as a bar chart using a scale that goes up in tens. They answer question cards in pairs using their interpretation of the bar chart.

Resources

Y3/4 White Rose Maths Step 2: Interpret Bar charts

Y3/4 White Rose Maths Step 3: Draw Bar charts

Date(s):

Mental Starter:

Fluency Skills:

Reasoning:

<p><u>Interpret and Draw Line Graphs</u> Y4 NC Statement: Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</p> <ul style="list-style-type: none"> In this lesson, children consolidate their understanding of bar charts as a way of presenting discrete data. They are then introduced to continuous data and time graphs. They explore how to draw, read and interpret line graphs The children interpret and present data about temperature in this lesson. There is a focus on recognising the difference between continuous and discrete data and choosing the best way to represent these data types. Reasoning questions allow children to decide which type of graph is the most appropriate for data sets and explain their thinking. <p><u>Resources</u> Y3/4 White Rose Maths Step 4: Interpret line graphs Y3/4 White Rose Maths Step 5: Draw line graphs</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p><u>Comparison, sum and difference</u> Y3 NC Statement: Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables. Y4 NC Statement: Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p> <ul style="list-style-type: none"> The children begin by looking at the reigns of kings and queens of England and deciding how to present the data, using their reasoning skills. They use a bar chart and then a grouped bar chart (showing length of reign and the age of the monarch when their reign began) to compare data and use it to answer questions. 	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	

<p>Resources Y3/4 White Rose Maths Step 6: Comparison, sum and difference</p>		
<p>Two-way tables Y3 NC Statement: Interpret and present data using bar charts, pictograms and tables. Y4 NC Statement: Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</p> <ul style="list-style-type: none"> • Children recap reading bar charts, as a whole class, and are then shown how to create a table using the information in the chart. • They use a bar chart of ice cream sales to complete a table showing sales across a week. In groups, they then interpret that data and answer differentiated questions on cards. <p>Resources Y3/4 White Rose Maths Step 7: Two-way tables</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	
<p>Collect and present data</p> <p>Resources Y3/4 White Rose Maths Step 8: Collect and present data</p>	<p>Date(s): Mental Starter:</p> <p>Fluency Skills:</p> <p>Reasoning:</p>	