



Scotholme Primary

Numeracy Curriculum 2015-16

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Scotholme Primary School

1 NUMERACY CURRICULUM 2014-2015

This is the 3rd draft of the Scottholme Primary Mathematics Curriculum beginning in the academic year of 2014-15 for Years 1, 3, 4 and 5 and in the academic year of 2015-16 for Years 2 and 6.

The curriculum has been designed to incorporate more time for the children to apply their skills, demonstrate deeper understanding of mathematics and to see mathematics in everything we do, both across the rest of the curriculum in school and in the wider world.

We will assess mathematics using a series of learning ladders which each child will work their way up from Year 1 through to Year 6. We will track progress and ensure that children who are doing well can be challenged, whilst children who struggle will be able to consolidate their skills and get extra support to catch up.

1.1 CURRICULUM ORGANISATION

Strand	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
Number	Number And Place Value	Number And Place Value	Number And Place Value	Number And Place Value	Number And Place Value	Number And Place Value
	Addition And Subtraction	Addition And Subtraction	Addition And Subtraction	Addition And Subtraction	Addition And Subtraction	
	Multiplication And Division	Multiplication And Division	Multiplication And Division	Multiplication And Division	Multiplication And Division	Multiplication And Division
	Fractions	Fractions	Fractions, Decimals, Percentages	Fractions, Decimals, Percentages	Fractions, Decimals, Percentages	Fractions, Decimals, Percentages and Ratio
						Algebra
Measurement	Measurement	Measurement	Measurement	Measurement	Measurement	Measurement
Geometry	Properties Of Shapes	Properties Of Shapes	Properties Of Shapes	Properties Of Shapes	Properties Of Shapes	Properties Of Shapes
	Position And Direction	Position And Direction		Position And Direction	Position And Direction	Position And Direction
Statistics		Statistics	Statistics	Statistics	Statistics	Statistics

1.2 LONG TERM PLANS FOR EACH YEAR GROUP

*YEAR 2 AND 6 TO USE THIS PLAN BUT ADAPTED TO CURRENT CURRICULUMS FOR 2014-15 ONLY

In each year group, there are some yearlong objectives shown before the termly breakdowns.

1.2.1 Year 1

[Autumn](#)

[Spring](#)

[Summer](#)

Yearly objectives:

- Read and write numbers from 1 to 20 in numerals and words

NRICH: [What's in a Name?](#) **

NRICH: [Count the Digits](#) *

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- Count in multiples of twos, fives and tens

Termly objectives:

1.2.1.1 Autumn

Y1 Autumn 1	Place Value	Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens NRICH: Writing Digits * NRICH: Shut the Box * NRICH: Biscuit Decorations *	Given a number, identify one more and one less	
	Addition And Subtraction	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs NRICH: How Do You See it? *	Represent and use number bonds and related subtraction facts within 20 NRICH: Domino Sorting * NRICH: One Big Triangle * NRICH: Number Lines * NRICH: Pairs of Numbers * NRICH: Weighted Numbers * NRICH: Butterfly Flowers *	Add and subtract one-digit and two-digit numbers to 20, including zero NRICH: Two Dice * NRICH: Sort Them Out (1) *
Y1 Autumn 2	Geometry	Recognise and name common 2-D and 3-D shapes, including: <ul style="list-style-type: none"> 2-D shapes (for example, rectangles (including squares), circles and triangles) 3-D shapes (for example, cuboids (including cubes), pyramids and spheres) NRICH: Shaping It * NRICH: What's Happening? *	Describe position, direction and movement, including whole, half, quarter and three-quarter turns NRICH: 2 Rings * NRICH: Turning * NRICH: Olympic Rings ** NRICH: Tangram Tangle ***	
	Measures	Compare, describe and solve practical problems for: <ul style="list-style-type: none"> lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] mass or weight [for example, heavy/light, heavier than, lighter than] capacity/volume [for example, full/empty, more than, less than, half, half full, quarter] time [for example, quicker, slower, earlier, later] 	NRICH: Sizing Them Up * NRICH: The Animals' Sports Day * NRICH: Different Sizes *	

1.2.1.2 Spring

Y1 Spring 1	Place Value	Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least NRICH: Making Sticks ** NRICH: Robot Monsters * NRICH: Dotty Six * NRICH: All Change *	Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens NRICH: Grouping Goodies ***	
	Measures	Measure and begin to record the following: <ul style="list-style-type: none"> lengths and heights mass/weight capacity and volume time (hours, minutes, seconds) NRICH: How Tall? * NRICH: Can You Do it Too? **		
Y1 Spring 2	Addition And Subtraction	Add and subtract one-digit and two-digit numbers to 20, including zero NRICH: Find the Difference **	Represent and use number bonds and related subtraction facts within 20 NRICH: Ladybirds in the Garden **	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$
	Measures	Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening) NRICH: The Games' Medals ** NRICH: Times of Day *	Recognise and use language relating to dates, including days of the week, weeks, months and years	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times

1.2.1.3 Summer

Y1 Summer 1	Multiplication and Division	Recognise, find and name a half as one of two equal parts of an object, shape or quantity NRICH: Halving ** NRICH: Happy Halving ***	Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	
	Addition and Subtraction	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs NRICH: 2,4,6,8 ***		
Y1 Summer 2	Multiplication And Division	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher NRICH: Lots of Biscuits! * NRICH: Share Bears *		
	Measures	Recognise and know the value of different denominations of coins and notes		

1.2.2 Year 2

[Autumn](#)

[Spring](#)

[Summer](#)

Yearly objectives:

- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

NRICH: [Odd Times Even](#) ***

NRICH: [Two Numbers Under the Microscope](#) **

NRICH: [Even and Odd](#) *

NRICH: [Ring a Ring of Numbers](#) *

NRICH: [More Numbers in the Ring](#) ***

NRICH: [How Odd](#) **

NRICH: [Doing and Undoing](#) *

NRICH: [Clapping Times](#) *

- Use place value and number facts to solve problems

NRICH: [I Like ...](#) *

NRICH: [Light the Lights](#) ***

NRICH: [Largest Even](#) *

Termly objectives:

1.2.2.1 Autumn

Y2 Autumn 1	Place Value	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward NRICH: Buzzy Bee *	Recognise the place value of each digit in a two-digit number (tens, ones) NRICH: Snail One Hundred *	Read and write numbers to at least 100 in numerals and in words
	Addition And Subtraction	Solve problems with addition and subtraction: <ul style="list-style-type: none"> • using concrete objects and pictorial representations, including those involving numbers, quantities and measures • applying their increasing knowledge of mental and written methods NRICH: Getting the Balance *** NRICH: Noah ** NRICH: Eggs in Baskets ** NRICH: The Brown Family *** NRICH: Birthday Cakes ** NRICH: Sitting Round Party Tables * NRICH: Cuisenaire Counting ***	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 NRICH: Number Round Up *** NRICH: 4 Dom *** NRICH: Strike it Out *	
Y2 Autumn 2	Multiplication And Division	Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs NRICH: Ordering Cards * NRICH: Which Symbol? * NRICH: I'm Eight *	Show that multiplication of two numbers can be done in any order (commutative), and division of one number by another cannot	Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity NRICH: Making Longer, Making Shorter ** Write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
	Measures	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels NRICH: Discuss and Choose * NRICH: Little Man *	Recognise and use the symbols for pounds (£) and pence (p); combine amounts to make a particular value NRICH: Five Coins **	Find different combinations of coins that equal the same amounts of money NRICH: Money Bags **

1.2.2.2 Spring

Y2 Spring 1	Place Value	<p>Identity, represent and estimate numbers using representations, including the number line</p> <p>NRICH: How We'd Count *</p> <p>NRICH: Tug of War *</p>	<p>Compare and order numbers from 0 up to 100; use <, > and = signs</p> <p>NRICH: Sort Them Out (1) *</p> <p>NRICH: Domino Sequences *</p> <p>NRICH: Domino Number Patterns **</p> <p>NRICH: Next Domino *</p> <p>NRICH: 100 Square Jigsaw *</p> <p>NRICH: That Number Square! *</p>	<p>Compare and order lengths, mass, volume/capacity and record the results using >, < and =</p> <p>NRICH: Order, Order! *</p>
	Measures	<p>Compare and sequence intervals of time</p>	<p>Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</p> <p>NRICH: What's the Time? *</p> <p>NRICH: Stop the Clock ***</p>	<p>Know the number of minutes in an hour and the number of hours in a day</p>
Y2 Spring 2	Addition And Subtraction	<p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers <p>NRICH: Cuisenaire Environment *</p> <p>NRICH: Jumping Squares **</p> <p>NRICH: Number Balance **</p>	<p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems</p> <p>NRICH: The Add and Take-away Path *</p> <p>NRICH: Secret Number **</p> <p>NRICH: How Many? *</p> <p>NRICH: What Was in the Box? *</p> <p>NRICH: Doing and Undoing *</p>	<p>Show that addition of two numbers can be done in any order (commutative), and subtraction of one number from another cannot</p>
	Geometry	<p>Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p> <p>NRICH: Shapely Lines *</p> <p>NRICH: Chain of Changes **</p> <p>NRICH: Colouring Triangles **</p> <p>NRICH: Exploded Squares *</p> <p>NRICH: Complete the Square ***</p> <p>NRICH: Let's Investigate Triangles *</p> <p>NRICH: Poly Plug Rectangles *</p> <p>NRICH: Square It *</p> <p>NRICH: Inside Triangles ***</p>	<p>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</p> <p>NRICH: Building with Solid Shapes *</p> <p>NRICH: Skeleton Shapes **</p> <p>NRICH: Rolling That Cube *</p> <p>Compare and sort common 2-D and 3-D shapes and everyday objects</p> <p>NRICH: Matching Triangles *</p> <p>NRICH: Data Shapes *</p>	<p>Identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid]</p> <p>NRICH: Cubes *</p> <p>NRICH: Shadow Play ***</p>

1.2.2.3 Summer

Y2 Summer 1	Position And Direction	<p>Order and arrange combinations of mathematical objects in patterns and sequences</p> <p>NRICH: Poly Plug Pattern *</p> <p>NRICH: Triple Cubes *</p> <p>NRICH: A City of Towers **</p> <p>NRICH: Caterpillars **</p>	<p>Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)</p> <p>NRICH: Turning Man *</p> <p>NRICH: Walking Round a Triangle *</p>	ICT Beebots? Link!
	Multiplication and Division	<p>Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity</p> <p>NRICH: Making Longer, Making Shorter **</p> <p>Write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$</p>	<p>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</p> <p>NRICH: Our Numbers *</p> <p>NRICH: Are You Well Balanced? ***</p> <p>NRICH: Magic Plant **</p> <p>NRICH: The Amazing Splitting Plant ***</p> <p>NRICH: The Tomato and the Bean ***</p> <p>NRICH: Lots of Lollies ***</p> <p>NRICH: Ip Dip *</p>	
Y2 Summer 2	Statistics	<p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables</p> <p>NRICH: Sticky Data *</p> <p>NRICH: If the World Were a Village *</p> <p>NRICH: Plants **</p> <p>NRICH: Plants **</p> <p>NRICH: What Shape and Colour? *</p> <p>NRICH: Carroll Diagrams *</p> <p>NRICH: Ladybird Count *</p>	<p>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</p> <p>NRICH: The Hair Colour Game **</p> <p>NRICH: Mixed-up Socks **</p> <p>NRICH: Sort the Street *</p> <p>NRICH: Button-up *</p> <p>NRICH: Beads and Bags *</p>	<p>Ask and answer questions about totalling and comparing categorical data</p> <p>NRICH: In the Playground *</p>
	Addition and Subtraction	<p>Compare and order lengths, mass, volume/capacity and record the results using >, < and =</p>	<p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p> <p>NRICH: The Puzzling Sweet Shop **</p>	

1.2.3 Year 3

[Autumn](#)

[Spring](#)

[Summer](#)

Yearly Objectives:

- Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- Identify, represent and estimate numbers using different representations
- Estimate the answer to a calculation and use inverse operations to check answers
- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

NRICH: [Ordering Cards](#) *

NRICH: [Music to My Ears](#) *

Termly Objectives:

Y3 Spring 1	Place Value/ FDP	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 NRICH: Matching Fractions *
	Statistics	Interpret and present data using bar charts, pictograms and tables NRICH: Our Sports * NRICH: Class 5's Names * NRICH: Going for Gold * NRICH: The Domesday Project * NRICH: The Car That Passes * NRICH: If the World Were a Village *	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 NRICH: The Olympic Flame: Are You in the 95%? *	
Y3 Spring 2	FDP/ Addition And Subtraction	Add and subtract fractions with the same denominator within one whole [for example, $5/7 + 1/7 = 6/7$]	Compare and order unit fractions, and fractions with the same denominators	
	Measures/ Addition And Subtraction	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) NRICH: Olympic Starters *	Measure the perimeter of simple 2-D shapes	Add and subtract amounts of money to give change, using both £ and p in practical contexts

1.2.3.1 Autumn

1.2.3.2 Spring

Y3 Summer 1	Addition And Subtraction	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction NRICH: GOT IT ** NRICH: Make 37 ** NRICH: Consecutive Numbers **	Add and subtract fractions with the same denominator within one whole [for example, $5/7 + 1/7 = 6/7$]	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
	Place Value	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) NRICH: Consecutive Numbers **	Compare and order numbers up to 1000	Read and write numbers up to 1000 in numerals and in words
	Geometry	Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them NRICH: Building Blocks * NRICH: The Third Dimension *** NRICH: Rolling That Cube * NRICH: Inky Cube *** NRICH: Triple Cubes * NRICH: Sponge Sections **	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 NRICH: Square It *	Solve number problems and practical problems involving these ideas Identify horizontal and vertical lines and pairs of perpendicular and parallel lines NRICH: Take Three Numbers * NRICH: National Flags * NRICH: Three Neighbours ** NRICH: Spot Thirteen * NRICH: Planning a School Trip * NRICH: Magic Vs ** NRICH: Number Differences * NRICH: Sitting Round Party Tables * NRICH: Dotty Six *
Y3 Summer 2	Addition And Subtraction And Division	Add and subtract numbers mentally, including: Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including a three-digit number and tens, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods NRICH: A Puzzling Cube * NRICH: How Do You See It? * NRICH: Summing Up * NRICH: First Connect Three * NRICH: Sea Level * NRICH: A Bit of a Dicey Problem ***	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects NRICH: A Square of Numbers * NRICH: What do you Need? * NRICH: This Pied Piper of Hamelin **	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction NRICH: A Square of Numbers * NRICH: Buying a Balloon * NRICH: Super Shapes * NRICH: Strike it Out *
	Multiplication Statistics And Division	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 NRICH: Now and Then ** NRICH: Real Statistics *** NRICH: It's a Tie **	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 NRICH: A Square of Numbers * NRICH: What do you Need? *	
Y3 Autumn			NRICH: This Pied Piper of Hamelin **	
	Measures	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks NRICH: Two Clocks ** NRICH: Clocks * NRICH: The Time Is ... ** NRICH: How Many Times? * NRICH: 5 on the Clock ***	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, a.m./p.m., morning, afternoon, noon and midnight NRICH: Wonky Watches ** NRICH: Watch the Clock ***	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]

1.2.3.3 Summer



1.2.4 Year 4

Autumn

Spring

Summer

Yearly Objectives:

- Count in multiples of 6, 7, 9, 25 and 1000
- Round any number to the nearest 10, 100 or 1000
- Solve number and practical problems that involve all of the above and with increasingly large positive numbers
- Estimate and use inverse operations to check answers to a calculation
- Estimate, compare and calculate different measures, including money in pounds and pence

NRICH: [Discuss and Choose](#) *

To fit in somewhere:

- Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value

Termly Objectives:

1.2.4.1 Autumn

Y4 Autumn 1	Place Value	<p>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)</p> <p>NRICH: Some Games That May Be Nice or Nasty *</p> <p>NRICH: The Deca Tree *</p>	<p>Order and compare numbers beyond 1000</p> <p>Find 1000 more or less than a given number</p> <p>Identify, represent and estimate numbers using different representations</p>	<p>Count backwards through zero to include negative numbers</p>
	Addition And Subtraction	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p>	<p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</p> <p>NRICH: The Puzzling Sweet Shop **</p> <p>NRICH: Money Bags **</p> <p>NRICH: Amy's Dominoes **</p> <p>NRICH: Escape from the Castle **</p> <p>NRICH: Fifteen Cards *</p> <p>NRICH: Sealed Solution **</p> <p>NRICH: Roll These Dice **</p>	<p>Count backwards through zero to include negative numbers</p> <p>Estimate and use inverse operations to check answers to a calculation</p>
Y4 Autumn 2	Multiplication And Division	<p>Recall multiplication and division facts for multiplication tables up to 12x12</p> <p>NRICH: Multiplication Square Jigsaw *</p> <p>NRICH: Shape Times Shape *</p> <p>NRICH: Table Patterns Go Wild! **</p> <p>NRICH: Let's Divide Up! *</p> <p>NRICH: That Number Square! *</p> <p>NRICH: Carrying Cards *</p> <p>NRICH: Light the Lights Again *</p> <p>NRICH: Multiples Grid *</p> <p>NRICH: Zios and Zepts *</p>	<p>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>NRICH: Trebling *</p> <p>NRICH: All the Digits **</p>	<p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p>
	Measures	<p>Convert between different units of measure [for example, kilometre to metre; hour to minute]</p>	<p>Read, write and convert time between analogue and digital 12- and 24-hour clocks</p>	<p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</p>

1.2.4.2 Spring

Y4 Spring 1	Place Value/ FDP	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 Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	Recognise and write decimal equivalents to $\frac{1}{2}$; $\frac{1}{5}$; $\frac{3}{4}$ Recognise and write decimal equivalents of any number of tenths or hundredths	Round decimals with one decimal place to the nearest whole number Compare numbers with the same number of decimal places up to two decimal places
	Statistics	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 NRICH: Venn Diagrams * NRICH: More Carroll Diagrams * NRICH: Plants **	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
Y4 Spring 2	FDP	Recognise and show, using diagrams, families of common equivalent fractions NRICH: Fractional Triangles * NRICH: Bryony's Triangle * NRICH: Fair Feast *	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 NRICH: Fractions in a Box ** NRICH: Chocolate **	Add and subtract fractions with the same denominator
	Addition And Subtraction	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

1.2.4.3 Summer

Y4 Summer 1	Multiplication And Division	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	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 NRICH: Fractions in a Box ** NRICH: Chocolate **	Find the area of rectilinear shapes by counting squares NRICH: Torn Shapes *
	Geometry	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes NRICH: Nine-pin Triangles *** NRICH: Cut it Out *** Identify acute and obtuse angles and compare and order angles up to two right angles by size	Identify lines of symmetry in 2-D shapes presented in different orientations NRICH: Let's Reflect * NRICH: National Flags * NRICH: Stringy Quads ** Complete a simple symmetric figure with respect to a specific line of symmetry NRICH: A Cartesian Puzzle * NRICH: Symmetry Challenge *** NRICH: Coordinate Challenge *	Plot specified points and draw sides to complete given polygons
Y4 Summer 2	Multiplication And Division	Solve simple measure and money problems involving fractions and decimals to two decimal places	Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	
	Statistics	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 NRICH: Venn Diagrams * NRICH: More Carroll Diagrams * NRICH: Plants **	Read, write and convert time between analogue and digital 12- and 24-hour clocks

1.2.5 Year 5

Autumn

Spring

Summer

Yearly Objectives:

- Multiply and divide numbers mentally drawing upon known facts
- Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

NRICH: [Make 100](#) **

- Use all four operations to solve problems involving measure [e.g. length, mass, volume, money] using decimal notation, including scaling
- Solve number problems and practical problems that involve all of the above

To fit in somewhere:

- Read Roman numerals to 1000 (M) and recognise years written in Roman numerals

Termly Objectives:

1.2.5.1 Autumn

Y5 Autumn 1	Place Value	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero NRICH: Tug Harder! *
	Addition And Subtraction	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Add and subtract numbers mentally with increasingly large numbers Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why NRICH: Twenty Divided Into Six ** NRICH: Reach 100 *** NRICH: Two and Two *** NRICH: Journeys in Numberland *	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres NRICH: Area and Perimeter *
Y5 Autumn 2	Multiplication And Division	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	Identify multiples and factors, including all factor pairs of a number, and common factors of two numbers NRICH: Sweets in a Box * NRICH: Which Is Quicker? * NRICH: Multiplication Squares * NRICH: Flashing Lights * NRICH: Abundant Numbers * NRICH: Factors and Multiples Game *	Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
	Geometry	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees (°) NRICH: Numbers Give the Design * NRICH: Six Places to Visit * NRICH: How Safe Are You? * NRICH: Olympic Turns ***	Identify: <ul style="list-style-type: none"> angles at a point and one whole turn (total 360°) angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) other multiples of 90°

1.2.5.2 Spring

Y5 Spring 1	FDP	Compare and order fractions whose denominators are all multiples of the same number	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Add and subtract fractions with the same denominator and denominators that are multiples of the same number
	Statistics	Solve comparison, sum and difference problems using information presented in a line graph	Complete, read and interpret information in tables, including timetables NRICH: Venn Diagrams * NRICH: More Carroll Diagrams * NRICH: Plants **	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed NRICH: Transformations on a Pegboard * NRICH: Square Corners ** NRICH: More Transformations on a Pegboard **
Y5 Spring 2	Place Value/ FDP	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$)	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Round decimals with two decimal places to the nearest whole number and to one decimal place Read, write, order and compare numbers with up to three decimal places
	Multiplication And Division	Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) NRICH: Up and Down Staircases * NRICH: One Wasn't Square ** NRICH: Cycling Squares ** Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers NRICH: Two Primes Make One Square **	Establish whether a number up to 100 is prime and recall prime numbers up to 19 Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes NRICH: Curious Number ***

1.2.5.3 Summer

Y5 Summer 1	Measures	Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres NRICH: Area and Perimeter *	Use the properties of rectangles to deduce related facts and find missing lengths and angles Distinguish between regular and irregular polygons based on reasoning about equal sides and angles
	FDP/Place Value	Solve problems involving number up to three decimal places NRICH: Route Product ** NRICH: Forgot the Numbers **	Read, write, order and compare numbers with up to three decimal places Round decimals with two decimal places to the nearest whole number and to one decimal place Read and write decimal numbers as fractions (e.g. $0.71 = 71/100$)	Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100, and as a decimal Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator a multiple of 10 or 25
Y5 Summer 2	Multiplication And Division	Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes NRICH: Numerically Equal ** NRICH: Shaping It * NRICH: Cubes * NRICH: Fitted *** NRICH: Brush Loads * NRICH: Making Boxes **	Estimate volume (for example using 1cm^3 blocks to build cuboids (including cubes)) and capacity (for example, using water)	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
	Measures/ Geometry	Solve problems involving converting between units of time	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles NRICH: Egyptian Rope **

1.2.6 Year 6

Autumn

Spring

Summer

Yearly Objectives:

- Round any whole number to a required degree of accuracy
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Perform mental calculations, including with mixed operations and large numbers
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Solve problems involving addition, subtraction, multiplication and division
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
- Recall and use equivalences between simple fractions, decimals and percentages including in different contexts

NRICH: [Four Go](#) *

Termly Objectives:

1.2.6.1 Autumn

Y6 Autumn 1	Place Value	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit Use negative numbers in context, and calculate intervals across zero	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to three decimal places
	Multiplication And Division	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Divide numbers up to 4 digits by a two-digit whole number using the formal written method of short and long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	Identify common factors, common multiples and prime numbers NRICH: Mystery Matrix ** NRICH: Factor Lines ** NRICH: Factor-multiple Chains ** NRICH: The Moons of Vuvv * NRICH: Round and Round the Circle ** NRICH: Counting Cogs **
Y6 Autumn 2	FDP	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = 1/8$] Divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$] NRICH: Andy's Marbles **	Multiply one-digit numbers with up to two decimal places by whole numbers Use written division methods in cases where the answer has up to two decimal places Solve problems which require answers to be rounded to specified degrees of accuracy
	Geometry	Draw 2-D shapes using given dimensions and angles NRICH: Making Spirals *** Recognise, describe and build simple 3-D shapes, including making nets NRICH: Cut Nets ** NRICH: Making Cuboids **	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons NRICH: Where Are They? * NRICH: Quadrilaterals *** NRICH: Round a Hexagon *	Describe positions on the full coordinate grid (all four quadrants) NRICH: Cops and Robbers * NRICH: Eight Hidden Squares ** NRICH: Coordinate Tan ** NRICH: Ten Hidden Squares *** Draw and translate simple shapes on the coordinate plane, and reflect them in the axes

1.2.6.2 Spring

Y6 Spring 1	Statistics	Interpret and construct pie charts and line graphs and use these to solve problems NRICH: Match the Matches **	Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	Calculate and interpret the mean as an average NRICH: Birdwatch * NRICH: Probably ... * NRICH: Odds or Sixes? * NRICH: Same or Different? ** NRICH: Tricky Track ** NRICH: Winning the Lottery **
	Place Value/ Addition and Subtraction	Compare and order fractions, including fractions >1	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	
Y6 Spring 2	Multiplication And Division (Ratio)	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts NRICH: Orange Drink ** NRICH: Pumpkin Pie Problem ** NRICH: Jumping *	Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison NRICH: Would you Rather? *	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples Convert between miles and kilometres
	Measures	Recognise when it is possible to use formulae for area and volume of shapes Calculate the area of parallelograms and triangles	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3] NRICH: Next Size Up **

1.2.6.3 Summer

Y6 Summer 1	Algebra	Generate and describe linear number sequences Use simple formulae	Express missing number problems algebraically	Find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities of combinations of two variables
	Measures/ Geometry	Solve problems involving similar shapes and ratios where the scale factor is known or can be found	Recognise that shapes with the same areas can have different perimeters and vice versa	Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
Y6 Summer 2	Statistics	Interpret and construct pie charts and line graphs and use these to solve problems NRICH: Olympic Records ****	Calculate and interpret the mean as an average NRICH: Birdwatch * NRICH: Probably ... * NRICH: Odds or Sixes? * NRICH: Same or Different? ** NRICH: Tricky Track ** NRICH: Winning the Lottery **	Understand how to read and create codes and ciphers (including Roman numerals) NRICH: Substitution Cipher NRICH: Code-breaking
	Algebra/ Geometry	Generate and start to describe non-linear number sequences Use simple formulae Express missing number problems algebraically Find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities of combinations of two variables	Describe positions on the full coordinate grid (all four quadrants) NRICH: Cops and Robbers * NRICH: Eight Hidden Squares ** NRICH: Coordinate Tan ** NRICH: Ten Hidden Squares *** Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	