



NRICH Curriculum Mapping Documents

NRICH tasks linked to the English Primary National Curriculum for mathematics in Y3, Y4, Y5, Y6

NRICH tasks embrace the aims of the curriculum (problem solving, reasoning, fluency) as well as curriculum 'content'. However, not all objectives will have an NRICH task attached to them.

Tasks badged with a * are suitable for the whole class	Tasks badged with a ** are suitable for the majority of the class	Tasks badged with a *** are for those who like a serious challenge
G = game	All NRICH tasks are categorised as problems.	I = investigation

Year 3	Year 4	Year 5	Year 6
Strand 1 – Number			
Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number How Would We Count? *	Count in multiples of 6, 7, 9, 25 and 1000 Count Me In *	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Coded Hundred Square * Which Scripts? *	Find 1000 more or less than a given number What Distance? **	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 Space Distances *	Round any whole number to a required degree of accuracy

<p>Compare and order numbers up to 1000</p>	<p>Count backwards through zero to include negative numbers</p>	<p>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero</p> <p>Tug Harder! * G</p> <p>Swimming Pool*</p> <p>Sea Level * I</p>	<p>Use negative numbers in context, and calculate intervals across zero</p> <p>First Connect Three * G</p>
<p>Identify, represent and estimate numbers using different representations</p>	<p>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)</p> <p>Nice or Nasty * G</p> <p>Dicey Operations * G</p> <p>The Deca Tree *</p> <p>Four-digit Targets *</p> <p>Dicey Operations in Line * G</p>	<p>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>Number and Place Value</p>	<p>Solve number and practical problems that involve all of the above</p> <p>Round the Four Dice * I</p> <p>Number Lines in Disguise **</p>
<p>Read and write numbers up to 1000 in numerals and in words</p>	<p>Order and compare numbers beyond 1000</p> <p>Ordering Journeys **</p>	<p>Solve number problems and practical problems that involve all of the above</p>	

<p>Solve number problems and practical problems involving these ideas</p> <p>Take Three Numbers * I</p> <p>Planning a School Trip *</p> <p>Number Differences * G</p> <p>Sitting Round the Party Tables *</p> <p>Number Match * G</p> <p>A Mixed-up Clock *</p> <p>That Number Square! * I</p> <p>Three Neighbours ** I</p> <p>Magic Vs **</p> <p>Square Subtraction *** I</p>	<p>Identify, represent and estimate numbers using different representations</p> <p>Representing Numbers *</p>	<p>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals</p> <p>Roman Numerals *</p>	
	<p>Round any number to the nearest 10, 100 or 1000</p> <p>Reasoned Rounding * G</p>		
	<p>Solve number and practical problems that involve all of the above and with increasingly large positive numbers</p>		
	<p>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</p>		

Add and subtract numbers mentally, including:

- a three-digit number and ones
- a three-digit number and tens
- a three-digit number and hundreds

Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)

Addition and Subtraction

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

Estimate and use inverse operations to check answers to a calculation

Add and subtract numbers mentally with increasingly large numbers

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

Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why
[Fifteen Cards](#) * |

[Money Bags](#) **

[Amy's Dominoes](#) **

[Sealed Solution](#) **

[Roll These Dice](#) ** |

Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

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

[Buying a Balloon](#) *

[Super Shapes](#) *

[Strike it Out](#) * G

[Dicey Addition](#) * G

[Half Time](#) *

[Play to 37](#) * G

[Build it Up](#) * I

[Finding Fifteen](#) **

[Domino Square](#) **

[Got It](#) ** G

[Make 37](#) **

[Consecutive Numbers](#) ** I

[Dice in a Corner](#) *** I

[4 Dom](#) ***

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

[Twenty Divided Into Six](#) **

[Maze 100](#) **

[Six Ten Total](#) ** I

[Six Numbered Cubes](#) **

[Reach 100](#) ***

[Subtraction Surprise](#) *

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

[Ordering Cards](#) * G

[Music to My Ears](#) * I

Recall multiplication and division facts for multiplication tables up to 12x12

[Multiplication Square Jigsaw](#) * G

[Shape Times Shape](#) *

[Let Us Divide!](#) *

[Carrying Cards](#) *

[Light the Lights Again](#) * G

[Multiples Grid](#) * I

[Zios and Zepts](#) *

[Times Tables Shifts](#) * G

[Table Patterns Go Wild!](#) ** I

[Satisfying Four Statements](#) *

Identify multiples and factors, including all factor pairs of a number, and common factors of two numbers

[Sweets in a Box](#) * I

[Which Is Quicker?](#) *

[Multiplication Squares](#) * I

[Flashing Lights](#) *

[Abundant Numbers](#) * I

[Factors and Multiples Game](#) * G

[Pebbles](#) ** I

[Three Dice](#) *

[Factor Track](#) ** G

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

Multiplication 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

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

Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers

[Two Primes Make One Square](#) ** I

Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

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

[A Square of Numbers](#) * G

[What do you Need?](#) *

[Follow the Numbers](#) * I

[What's in the Box?](#) *

[How Do You Do It?](#) *

[Ip Dip](#) * I

[Journeys in Numberland](#) * I

[This Pied Piper of Hamelin](#) **

Recognise and use factor pairs and commutativity in mental calculations

Establish whether a number up to 100 is prime and recall prime numbers up to 19

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

Multiply two-digit and three-digit numbers by a one-digit number using formal written layout

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

Perform mental calculations, including with mixed operations and large numbers

[All the Digits](#) **

[Trebling](#) *

[Become Maths Detectives](#) * I

[Exploring Number Patterns You Make](#) ** I

	<p>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</p>	<p>Multiply and divide numbers mentally drawing upon known facts</p>	<p>Identify common factors, common multiples and prime numbers</p> <p>The Moons of Vuvv *</p> <p>Mystery Matrix ** </p> <p>Factor Lines ** </p> <p>Factor-multiple Chains **</p> <p>Round and Round the Circle ** </p> <p>Counting Cogs **</p>
		<p>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</p> <p>Division Rules * </p>	<p>Use their knowledge of the order of operations to carry out calculations involving the four operations</p>
		<p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p> <p>Multiply Multiples 1 *</p> <p>Multiply Multiples 2 *</p> <p>Multiply Multiples 3 *</p>	<p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p>

Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)

[Up and Down Staircases](#) *

[One Wasn't Square](#) **

[Cycling Squares](#) **

[Picture a Pyramid ...](#) **

Solve problems involving addition, subtraction, multiplication and division

[Always, Sometimes or Never? Number](#) *

Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes

[Division Rules](#) * |

[Odd Squares](#) *

[Cubes Within Cubes](#) ***

[Curious Number](#) *** |

Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

[Four Go](#) * G

Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

[Multiply Multiples 1](#) * |

[Multiply Multiples 2](#) * |

[Multiply Multiples 3](#) * |

[Highest and Lowest](#) * |

[Make 100](#) ** |

[Four Goodness Sake](#) ***

Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Compare and order fractions whose denominators are all multiples of the same number

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination

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 and show, using diagrams, families of common equivalent fractions

[Fractional Wall](#) *

[Fractional Triangles](#) *

[Bryony's Triangle](#) *

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

[Fraction Match](#) * G

Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

[Tumbling Down](#) *

Compare and order fractions, including fractions > 1

[More Fraction Bars](#) **

[Extending Fraction Bars](#) **

Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators

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

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. $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$)

[Balance of Halves](#) *

Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

[Fraction Lengths](#) **

[Andy's Marbles](#) **

[Fractions in a Box](#) **

[Chocolate](#) ** |

Fractions, Decimals, Percentages, Ratio and Proportion

Recognise and show, using diagrams, equivalent fractions with small denominators Matching Fractions * G	Add and subtract fractions with the same denominator	Add and subtract fractions with the same denominator and denominators that are multiples of the same number A4 Fraction Addition * A4 Fraction Subtraction * Linked Chains *	Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]
Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]	Recognise and write decimal equivalents of any number of tenths or hundredths	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]
Compare and order unit fractions, and fractions with the same denominators	Recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$	Read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$)	Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]
Solve problems that involve all of the above	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	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	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
	Round decimals with one decimal place to the nearest whole number Round the Dice Decimals 1 * I	Round decimals with two decimal places to the nearest whole number and to one decimal place Round the Dice Decimals 2 *	Multiply one-digit numbers with up to two decimal places by whole numbers
	Compare numbers with the same number of decimal places up to two decimal places	Read, write, order and compare numbers with up to three decimal places Greater Than or Less Than? * I Spiralling Decimals *** G	Use written division methods in cases where the answer has up to two decimal places

	Solve simple measure and money problems involving fractions and decimals to two decimal places	Solve problems involving number up to three decimal places Route Product ** Forgot the Numbers **	Solve problems which require answers to be rounded to specified degrees of accuracy
		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	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts Doughnut Percents *
		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 Matching Fractions Decimals Percentages * G	
			Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts Jumping * Rectangle Tangle * Orange Drink ** Pumpkin Pie Problem ** Fraction Fascination ***

			<p>Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison</p> <p>Would you Rather? *</p>
			<p>Solve problems involving similar shapes where the scale factor is known or can be found</p>
			<p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples</p>
			<p>Use simple formulae</p> <p>Finding 3D Stacks ***</p> <p>Doplication *</p> <p>Diagonal Sums **</p>
		<p>Algebra</p>	<p>Generate and describe linear number sequences</p> <p>Domino Sets * </p> <p>Break it Up! * </p> <p>Holes * </p> <p>Button-up Some More ** </p>

			Express missing number problems algebraically Plenty of Pens * Two and Two *** I
			Find pairs of numbers that satisfy an equation with two unknowns Price Match **
			Enumerate possibilities of combinations of two variables
Year 3	Year 4	Year 5	Year 6
Strand 2 - Measurement			
Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) Olympic Starters * I Car Journey * I Oh! Harry! **	Convert between different units of measure [for example, kilometre to metre; hour to minute]	Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
Measure the perimeter of simple 2-D shapes	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	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

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

[How Much Did It Cost?](#) **

Find the area of rectilinear shapes by counting squares

[Torn Shapes](#) * |

[Twice as Big?](#) *

Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres

[Area and Perimeter](#) * |

[Through the Window](#) * |

Convert between miles and kilometres

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

[What is the Time?](#) *

[Clocks](#) *

[Two Clocks](#) **

[The Time Is ...](#) **

[5 on the Clock](#) *** |

[Approaching Midnight](#) G

Estimate, compare and calculate different measures, including money in pounds and pence

[Discuss and Choose](#) *

Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes

[Shaping It](#) * |

[Brush Loads](#) * |

[Cubes](#) * |

[Numerically Equal](#) **

[Making Boxes](#) ** |

[Ribbon Squares](#) ***

[Fitted](#) ***

Recognise that shapes with the same areas can have different perimeters and vice versa

[Dicey Perimeter, Dicey Area](#) * G

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

[Wonky Watches](#) **

[Watch the Clock](#) ***

Read, write and convert time between analogue and digital 12- and 24-hour clocks

Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]

[Pouring Problem](#) **

Recognise when it is possible to use formulae for area and volume of shapes

Know the number of seconds in a minute and the number of days in each month, year and leap year	Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	Solve problems involving converting between units of time	Calculate the area of parallelograms and triangles
Compare durations of events [for example to calculate the time taken by particular events or tasks]		Use all four operations to solve problems involving measure [e.g. length, mass, volume, money] using decimal notation, including scaling	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 Next Size Up **
Year 3	Year 4	Year 5	Year 6

Strand 3 – Geometry

<p>Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</p> <p>Building Blocks *</p> <p>Triple Cubes * I</p> <p>Stick Images * G</p> <p>Rolling That Cube *</p> <p>A Puzzling Cube *</p> <p>Arranging Cubes * G</p> <p>Sponge Sections **</p> <p>Square Corners **</p> <p>Overlapping Again **</p>	<p>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</p> <p>Sorting Logic Blocks * G</p> <p>What Shape? * G</p> <p>Shapes on the Playground **</p> <p>Nine-pin Triangles *** I</p> <p>Cut it Out ***</p> <p>Quad Match **</p> <p>Four Triangles Puzzle * I</p>	<p>Identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p> <p>Properties of Shapes</p>	<p>Draw 2-D shapes using given dimensions and angles</p> <p>Shape Draw *</p> <p>Baravelle *</p> <p>Making Spirals ***</p>
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<p>Move Those Halves ** I</p> <p>The Third Dimension *** I</p> <p>Board Block Challenge *** G</p> <p>Inky Cube ***</p>			
<p>Recognise angles as a property of shape or a description of a turn</p>	<p>Identify acute and obtuse angles and compare and order angles up to two right angles by size</p>	<p>Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles</p>	<p>Recognise, describe and build simple 3-D shapes, including making nets</p> <p>Cut Nets **</p> <p>Making Cuboids ** I</p>
<p>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</p> <p>Seeing Squares * G</p>	<p>Identify lines of symmetry in 2-D shapes presented in different orientations</p> <p>Let Us Reflect *</p> <p>Stringy Quads **</p> <p>Counters in the Middle * G</p>	<p>Draw given angles, and measure them in degrees (°)</p> <p>The Numbers Give the Design * I</p> <p>Six Places to Visit *</p> <p>How Safe Are You? *</p> <p>Olympic Turns ***</p>	<p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</p> <p>Where Are They? *</p> <p>Round a Hexagon *</p> <p>Always, Sometimes or Never? Shape *</p> <p>Quadrilaterals *** I</p>
<p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p> <p>National Flags *</p>	<p>Complete a simple symmetric figure with respect to a specific line of symmetry</p> <p>School Fair Necklaces ** I</p> <p>Symmetry Challenge *** I</p>	<p>Identify:</p> <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 ½ a turn (total 180°) • other multiples of 90° 	<p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p>

		Use the properties of rectangles to deduce related facts and find missing lengths and angles Making Rectangles **	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
		Distinguish between regular and irregular polygons based on reasoning about equal sides and angles Egyptian Rope ** Bracelets *	
	Describe positions on a 2-D grid as coordinates in the first quadrant Coordinate Challenge * Eight Hidden Squares **	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 Transformations on a Pegboard * More Transformations on a Pegboard **	Describe positions on the full coordinate grid (all four quadrants) Cops and Robbers * G Coordinate Tan ** Ten Hidden Squares *** Position and Direction
	Describe movements between positions as translations of a given unit to the left/right and up/down		Draw and translate simple shapes on the coordinate plane, and reflect them in the axes
	Plot specified points and draw sides to complete a given polygon. A Cartesian Puzzle *		

Year 3	Year 4	Year 5	Year 6
Strand 4 - Statistics			
<p>Interpret and present data using bar charts, pictograms and tables</p> <p>How Big Are Classes 5, 6 and 7? *</p> <p>Our Sports * </p> <p>Class 5's Names *</p> <p>Going for Gold * </p> <p>The Domesday Project * </p> <p>The Car That Passes * </p> <p>If the World Were a Village *</p> <p>Now and Then **</p> <p>It's a Tie ** </p> <p>Real Statistics ***</p>	<p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</p>	<p>Solve comparison, sum and difference problems using information presented in a line graph</p>	<p>Interpret and construct pie charts and line graphs and use these to solve problems</p> <p>Match the Matches **</p>
<p>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</p>	<p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</p> <p>Venn Diagrams *</p> <p>More Carroll Diagrams *</p> <p>Plants ** </p>	<p>Complete, read and interpret information in tables, including timetables</p>	<p>Calculate and interpret the mean as an average</p> <p>Birdwatch * </p>