

The Royal School Maths Progression Map 2021-22

Number sense				
EYFS	Year 1	Year 2	Year 3	Year 4
<p>(Number) Have a deep understanding of number to 10, including the composition of each number</p> <p>- Subitise (recognise quantities without counting) up to 5</p> <p>(Numerical Patterns) Verbally count beyond 20, recognising the pattern of the counting system</p> <p>- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity</p>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</p> <p>Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s</p> <p>Given a number, identify 1 more and 1 less</p> <p>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</p> <p>Read and write numbers from 1 to 20 in numerals and words</p>	<p>Count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward</p> <p>Recognise the place value of each digit in a two-digit number (10s, 1s)</p> <p>Identify, represent and estimate numbers using different representations, including the number line</p> <p>Compare and order numbers from 0 up to 100; use <, > and = signs</p> <p>Read and write numbers to at least 100 in numerals and in words</p> <p>Recall doubles and halves up to 20</p> <p>Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20</p> <p>Use place value and number facts to solve problems</p> <p>Use estimation to check that his/her answers to a calculation are reasonable</p>	<p>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</p> <p>Recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)</p> <p>Compare and order numbers up to 1,000 identify, represent and estimate numbers using different representations</p> <p>Read and write numbers up to 1,000 in numerals and in words</p> <p>Solve number problems and practical problems involving these ideas</p>	<p>Count in multiples of 6, 7, 9, 25 and 1,000</p> <p>Find 1,000 more or less than a given number</p> <p>Count backwards through 0 to include negative numbers</p> <p>Recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s)</p> <p>Order and compare numbers beyond 1,000</p> <p>Identify, represent and estimate numbers using different representations</p> <p>Round any number to the nearest 10, 100 or 1,000</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 0 and place value</p>

Addition and subtraction				
EYFS	Year 1	Year 2	Year 3	Year 4
<p>(Number) Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</p> <p>(Numerical Patterns) Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity</p>	<p>Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs</p> <p>Represent and use number bonds and related subtraction facts within 20</p> <p>Add and subtract one digit and two-digit numbers to 20, including 0</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$</p>	<p>Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures</p> <p>Solve problems with addition and subtraction: applying their increasing knowledge of mental and written methods</p> <p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <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 1s - a two-digit number and 10s - 2 two-digit numbers - adding 3 one-digit numbers - show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot <p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</p>	<p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> - a three-digit number and 1s - a three-digit number and 10s - a three-digit number and 100s <p>Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction</p> <p>Estimate the answer to a calculation and use inverse operations to check answers</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p> <p>Estimate and use inverse operations to check answers to a calculation</p> <p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</p>

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Multiplication & Division				
EYFS	Year 1	Year 2	Year 3	Year 4
<p>(Number) Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</p> <p>(Numerical Patterns) Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally</p>	<p>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</p>	<p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>Say the nearest multiples of 10 to a given 2 digit number</p> <p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs</p> <p>Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot</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>Recall and use multiplication and division facts for the 3, 4 and 8x multiplication tables</p> <p>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>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>Recall multiplication and division facts for multiplication tables up to 12×12</p> <p>Use place value, known and derived facts to multiply and divide mentally, including:</p> <ul style="list-style-type: none"> - multiplying by 0 and 1; - dividing by 1; - multiplying together 3 numbers <p>Recognise and use factor pairs and commutativity in mental calculations</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p> <p>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</p>

Fractions

EYFS	Year 1	Year 2	Year 3	Year 4
	<p>Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity</p> <p>Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity</p>	<p>Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, or quantity</p> <p>Write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ set of objects or quantity</p>	<p>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>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p> <p>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>Recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]</p> <p>Compare and order unit fractions, and fractions with the same denominators</p> <p>Solve problems that involve all of the above</p>	<p>Recognise and show, using diagrams, families of common equivalent fractions</p> <p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10</p> <p>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</p> <p>Add and subtract fractions with the same denominator</p> <p>Recognise and write decimal equivalents of any number of tenths or hundreds</p> <p>Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$</p> <p>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</p> <p>Round decimals with 1 decimal place to the nearest whole number</p> <p>Compare numbers with the same number of decimal places up to 2 decimal places</p> <p>Solve simple measure and money problems involving fractions and decimals to 2 decimal places</p>

Measurement				
EYFS	Year 1	Year 2	Year 3	Year 4
	<p>Compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> -Lengths and heights [for example, long/short, longer/shorter, tall/ short, double/half] -Mass/weight [for example, heavy/ light, heavier than, lighter than] -Capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] -Time [for example, quicker, slower, earlier, later] <p>Measure and begin to record the following:</p> <ul style="list-style-type: none"> - Lengths and heights - Mass/weight - Capacity and volume - Time (hours, minutes, seconds) <p>Recognise and know the value of different denominations of coins and notes</p> <p>Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years</p> <p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</p>	<p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°c); capacity (litres/ ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p> <p>Compare and order lengths, mass, volume/capacity and record the results using >, < and =</p> <p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>Find different combinations of coins that equal the same amounts of money</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p> <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>Know the number of minutes in an hour and the number of hours in a day</p> <p>Read scales in divisions of ones, twos, fives and tens</p> <p>Know the value of different coins</p>	<p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ ml)</p> <p>Measure the perimeter of simple 2-D shapes</p> <p>Add and subtract amounts of money to give change, using both £ and p in practical contexts</p> <p>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> <p>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</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year</p> <p>Compare durations of events [for example, to calculate the time taken by particular events or tasks]</p>	<p>Convert between different units of measure [for example, kilometre to metre; hour to minute]</p> <p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>Find the area of rectilinear shapes by counting squares</p> <p>Estimate, compare and calculate different measures, including money in pounds and pence</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>

Geometry

EYFS	Year 1	Year 2	Year 3	Year 4
	<p>Recognise and name common 2-D and 3-D shapes, including:</p> <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] <p>Describe position, direction and movement, including whole, half, quarter and three-quarter turns</p>	<p>Identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line</p> <p>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</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>Compare and sort common 2-D and 3-D shapes and everyday objects</p> <p>Order and arrange combinations of mathematical objects in patterns and sequences</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 anticlockwise)</p>	<p>Draw 2-D shapes and make 3-D shapes using modeling materials</p> <p>Recognise 3-D shapes in different orientations and describe them</p> <p>Recognise angles as a property of shape or a description of a turn</p> <p>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</p> <p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p>	<p>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</p> <p>Identify acute and obtuse angles and compare and order angles up to 2 right angles by size</p> <p>Identify lines of symmetry in 2-d shapes presented in different orientations</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry</p> <p>Describe positions on a 2-D grid as coordinates in the first quadrant</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down</p> <p>Plot specified points and draw sides to complete a given polygon</p>

Statistics

EYFS	Year 1	Year 2	Year 3	Year 4
		<p>Interpret and construct simple pictograms, tally charts, block diagrams and tables</p> <p>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</p> <p>Ask-and-answer questions about totalling and comparing categorical data</p>	<p>Interpret and present data using bar charts, pictograms and tables</p> <p>Solve one-step and twostep questions [for example 'how many more?' And 'how many fewer?']</p> <p>Using information presented in scaled bar charts and pictograms and tables</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 bar charts, pictograms, tables and other graphs</p>

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Algebra

EYFS	Year 1	Year 2	Year 3	Year 4
	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$	Solve addition and subtraction problems involving missing numbers	Solve addition and subtraction, multiplication and division problems that involve missing numbers	Solve addition and subtraction, multiplication and division problems that involve missing numbers

Sequence of teaching

We use the White Rose maths scheme as a guide to planning the sequence for teaching in Year 1 to Year 4. Teachers also plan to include consolidation and extension of maths within cross-curricular topics when it fits naturally within a topic. For example Roman numerals when studying history and shape within art and design technology topics.

Year 1

	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 (within 10)				Number: Addition and Subtraction (within 10)					Geometry: Shape	Number: Place Value (within 20)	
Spring	Consolidation	Number: Addition and Subtraction (within 20)			Number: Place Value (within 50)			Measurement: Length and Height		Measurement: Weight and Volume		Consolidation
Summer	Consolidation	Number: Multiplication and Division			Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time	

Year 2

	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					Measurement: Money		Number: Multiplication and Division	Consolidation
Spring	Number: Multiplication and Division				Statistics		Geometry: Properties of Shape			Number: Fractions		
Summer	Measurement: Length and Height		Geometry: Position and Direction		Consolidation and problem solving		Measurement: Time		Measurement: Mass, Capacity and Temperature			Consolidation

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Year 3

	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			
Spring	Number: Multiplication and Division			Measurement: Money	Statistics		Measurement: Length and Perimeter			Number: Fractions		Consolidation
Summer	Number: Fractions			Measurement: Time			Geometry: Properties of Shape	Measurement: Mass and Capacity				Consolidation

Year 4

	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			Measurement: Length and Perimeter		Number: Multiplication and Division		
Spring	Number: Multiplication and Division			Measurement: Area	Number: Fractions				Number: Decimals			Consolidation
Summer	Number: Decimals	Measurement: Money		Measurement: Time		Statistics		Geometry: Properties of Shape		Geometry: Position and Direction		Consolidation