



Rotherhithe Primary School Mathematics Curriculum Map Year R-6 2020-2021



| Year | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| Rec, Y1, Y2, Y3, Y4 Mathematics Mastery | | | | | | |
| R | <p><u>Pattern and shape</u> Recognise, create and describe shapes with mathematical language</p> <p><u>Same and different</u> Estimate and check numbers, recognising if they are same or different.</p> <p><u>Numbers within 5</u> Recognise, count and order numbers; say which numbers are 'more or less'</p> | <p><u>Measure</u> Talk about, compare, measure and order objects and Quantities</p> <p><u>Numbers within 10</u> Count reliably, place in order, recognise numerals, use ordinals, understand zero</p> <p><u>Shape and calendar</u> Explore characteristics of shape, using mathematical language. Use everyday language to discuss time.</p> | <p><u>Position and Time</u> Use everyday language to talk about time; use mathematical language to describe position</p> <p><u>Numbers within 15</u> Recognise, count and order numbers; estimate and compare groups of objects</p> <p><u>Numbers within 20</u> Recognise, count and order numbers; estimate and compare groups of objects</p> | <p><u>Shape and pattern</u> Explore, discuss, recognise, classify and describe in mathematical language.</p> <p><u>Addition and Subtraction (1)</u> Add and subtract single-digit numbers by counting on or back; subitise within five</p> <p><u>Numbers beyond 20 (1)</u> Recognise, count and order numbers to 50; estimate and compare groups of objects</p> | <p><u>Measure</u> Compare objects and quantities, solve size, weight and capacity problems in everyday language</p> <p><u>Grouping and sharing</u> Solve practical problems involving groups of 2, 5 or 10; explore counting in steps of 2.</p> <p><u>Money</u> Recognise, compare and order coins and their values using everyday language.</p> | <p><u>Doubling and halving</u> Solve problems and explore the relationship between doubling and halving</p> <p><u>Addition and Subtraction (2)</u> Compare quantities to solve problems that include doubling, halving and sharing</p> <p><u>Numbers beyond 20 (2)</u> Recognise, count, order and estimate numbers to 100; solve problems including grouping and sharing.</p> |

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| <p>1</p> | <p><u>Numbers to 10</u> Count, read, write, identify, represent, double and half, and use comparative language.</p> <p><u>Addition and subtraction within 10</u> Represent and use number bonds; read, write, interpret, represent and solve.</p> <p><u>Shapes and patterns</u> Recognise common 2-D and 3-D shapes; describe position, direction and movement.</p> | <p><u>Numbers to 20</u> Count, read, write, identify, represent, double and half, and use comparative language.</p> <p><u>Addition and subtraction within 20</u> Augmentation and reduction. Represent and use number bonds; read, write, interpret and solve one-step problems.</p> | <p><u>Time</u> Tell the time to the hour and half-past the hour; solve practical problems for time.</p> <p><u>Exploring calculation strategies within 20</u> Represent and use number bonds; use concrete and pictorial representation to solve one-step problems</p> <p><u>Numbers to 50</u> Count, read, write, identify, represent in numerals and words; recognise place value.</p> | <p><u>Adding and subtracting within 50</u> Represent and use number bonds; read, write, interpret and solve one-step problems.</p> <p><u>Fractions</u> Recognise, find and name a half and a quarter as one of two or four equal parts respectively.</p> <p><u>Measures (1): Length and weight</u> Compare, describe, measure, record and solve practical problems.</p> | <p><u>Numbers 50 to 100 and beyond</u> Count from a given number in 1s, 2s, 5s and 10s; represent, identify and estimate numbers; recognise place value.</p> <p><u>Adding and subtracting within 100</u> Represent and use number bonds; read, write, interpret and solve one-step problems.</p> <p><u>Money</u> Recognise and value coins and notes; solve one-step addition/subtraction problems.</p> | <p><u>Multiplication and division</u> Solve one-step problems using concrete and pictorial representations and arrays.</p> <p><u>Measures (2):</u> Capacity and volume Compare, describe, measure, record and solve practical problems.</p> |
| <p>2</p> | <p><u>Numbers within 100</u> Use place value and number facts to solve problems; identify, represent, compare and order numbers.</p> <p><u>Add and subtract 2-digit numbers</u> Build addition/subtraction facts/methods to 100; understand commutativity.</p> | <p><u>Measuring length</u> Understand appropriate units of measure (cm, m); compare and order; read scales to 100.</p> <p><u>Graphs</u> Interpret and construct tables, tally charts, pictograms and block diagrams; ask/answer questions about totaling and comparing data.</p> | <p><u>Fractions</u> Recognise, find, name and write simple fractions of objects and quantities; recognise equivalences between fractions</p> <p><u>Time</u> Tell and write the time to five minutes; compare and sequence intervals of time.</p> | <p><u>Money</u> Recognise units symbols (£, p); explore combinations of money; solve simple problems, including giving change.</p> <p><u>Faces, shapes and patterns; lines and turns</u> Identify and describe properties of 2-D and 3-D shapes; compare and sort common</p> | <p><u>Numbers within 1000</u> Use, identify and represent place value and number facts to solve problems; compare, read, write and order numbers.</p> <p><u>Measures: capacity and volume</u> Understand appropriate units of measure; compare and order; read scales to 1000.</p> | <p><u>Exploring calculation strategies</u> Add/subtract numbers mentally and using formal written methods</p> <p><u>Multiplication and division by 3 and 4</u> Recall and use facts for the 3 and 4 times tables; calculate mathematical statements; solve problems using</p> |



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| | <p><u>Addition and subtraction word problems</u> Solve problems using concrete and pictorial representations to develop mental and written methods; recognise inverse relationships of operations.</p> | <p><u>Multiplication and division by 2, 5 and 10</u> Calculate mathematical statements; understand commutativity; solve problems using concrete, pictorial, written and mental methods.</p> | <p><u>Addition and subtraction of 2-digit numbers (regrouping and adjusting)</u> Solve problems involving numbers, quantities and measures; estimate and check calculations.</p> | <p>shapes and objects; describe position and movement in mathematical language</p> | <p><u>Measures: mass</u> Understand appropriate units of measure; compare and order; read scales to 1000.</p> | <p>concrete, pictorial, written and mental methods.</p> |
| 3 | <p><u>Number sense and reasoning within 100</u> Solve number and practical problems, including estimation and checking; add and subtract money to give change in £ and p.</p> <p><u>Place Value</u> Identify, represent and estimate numbers in different contexts, recognise and use place value of 3-digit numbers in calculations.</p> | <p><u>Graphs</u> Interpret and present data using charts and tables. Solve one and two-step problems using presented information.</p> <p><u>Addition and subtraction with up to 4 digits</u> Calculate mentally and using formal written methods; solve problems using number facts and place value.</p> <p><u>Length and perimeter</u> Measure, compare, add/subtract lengths; solve problems using appropriate tools and units.</p> | <p><u>Multiplication and division word problems</u> Solve scaling and correspondence problems in which n objects are connects to m objects.</p> <p><u>Using 10s and 100s to multiply and divide large numbers</u> Calculate mathematical statements including for two-digit numbers by one-digit numbers; progress from mental to formal written methods.</p> | <p><u>Time: analogue, digital and finding how long</u> Tell, record, write and compare the time, including using Roman numerals, 12 and 24-hour clocks, using correct vocabulary; compare durations.</p> <p><u>Fractions</u> Recognise, use, compare, order simple fractions; understand fractions as parts of a whole; add/subtracts fractions of same denominator.</p> | <p><u>Angles and shape</u> Identify right-angles, recognising them as quarters of a turn; identify parallel and perpendicular lines; draw/make and measure 2-D and 3-D shapes.</p> <p><u>(Length), weight & volume</u> Measure, compare, add/subtract and solve problems, using appropriate tools and units.</p> | <p><u>6 & 8 times tables</u> Recall and use multiplication/division facts for 6 & 8 times table; count in multiples of 6 & 8; calculate mathematical statements.</p> <p><u>Exploring calculation strategies and place value</u> Add/subtract numbers mentally; find 10, 100, 1000 more than a given number; order and compare beyond 1000; round any number to nearest 10, 100, 1000.</p> |

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| <p>4</p> | <p><u>Reasoning with large numbers</u></p> <ul style="list-style-type: none"> •4-digit place value. Read, write, represent, order and compare •Find 10, 100 or 1000 more or less •Round numbers to the nearest 10, 100 or 1000 <p><u>Addition and subtraction</u></p> <p>Select appropriate strategies to add and subtract</p> <ul style="list-style-type: none"> •Illustrate and explain appropriate addition and subtraction strategies including column method with regrouping | <p><u>Multiplication and division</u></p> <ul style="list-style-type: none"> •Distributive property including multiplying three 1-digit numbers •Mental multiplication and division strategies using place value and known and derived facts •Short multiplication and division <p><u>Discrete and continuous data</u></p> <p>Read, interpret and construct pictograms, bar charts and time graphs</p> <ul style="list-style-type: none"> •Compare tables, pictograms and bar charts | <p><u>Securing multiplication facts</u></p> <ul style="list-style-type: none"> •Identify and explore patterns in multiplication tables including 7 and 9 <p><u>Fractions</u></p> <ul style="list-style-type: none"> •Explore different interpretations and representations of fractions •Equivalent fractions •Represent fractions greater than one as mixed number and improper fractions •Add and subtract fractions with the same denominator including fractions greater than one <p><u>Time</u></p> <ul style="list-style-type: none"> •Analogue to digital, 12- hour and 24-hour •Convert between units of time | <p><u>Decimals</u></p> <ul style="list-style-type: none"> •Decimal equivalents to tenths, quarters and halves •Compare and order numbers with same number of decimal places •Multiply and divide by 10 and 100 including decimals <p><u>Area and perimeter</u></p> <ul style="list-style-type: none"> •Perimeter of rectangles and rectilinear shapes •Area of rectangles and rectilinear shapes •Investigate area and perimeter | <p><u>Solving measures and money problems</u></p> <ul style="list-style-type: none"> •Convert units of measure •Select appropriate units to measure •Use strategies to investigate problems: trial and improvement, organising using lists and tables, working systematically <p><u>Shape and symmetry</u></p> <p>Classify, compare and order angles</p> <ul style="list-style-type: none"> •Compare and classify 2-D shapes •Identify lines of symmetry | <p><u>Position and direction</u></p> <ul style="list-style-type: none"> •Describe and plot using coordinates •Describe translations <p><u>Reasoning with pattern and sequences</u></p> <ul style="list-style-type: none"> •Roman numerals up to 100 •Place value of other number systems •Number sequences and patterns <p><u>3-D shape</u></p> <ul style="list-style-type: none"> •Use understanding of 3-D shapes •Identify 3-D shapes from 2-D representations |
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Y5 – Y6 White Rose

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| <p>5</p> | <p><u>Number: Place Value</u></p> <ul style="list-style-type: none"> ○ Read, write, order and compare numbers to at least 1,000,000 and determine the | <p><u>Number: Multiplication & Division</u></p> <ul style="list-style-type: none"> ○ Multiply & divide numbers mentally | <p><u>Number: Multiplication & Division</u></p> <ul style="list-style-type: none"> ○ Multiply and divide numbers | <p><u>Number: Fractions</u></p> <ul style="list-style-type: none"> ○ Recognise mixed numbers and improper fractions and convert from one form to the | <p><u>Number: Decimals</u></p> <ul style="list-style-type: none"> ○ Recognise and write decimal equivalents of any number of tenths or hundredths. | <p><u>Measurement: Converting Units</u></p> <ul style="list-style-type: none"> ○ Convert between different units of metric measure (km an m; cm and |
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| | <p>value of each digit.</p> <ul style="list-style-type: none"> Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000, 100,000. Solve number problems and practical problems that involve all of the above. Read Roman numerals up to 1000 (M) and recognize years written in Roman numerals. <p><u>Number: Addition and Subtraction</u></p> <ul style="list-style-type: none"> Add and subtract numbers mentally | <p>drawing upon known facts.</p> <ul style="list-style-type: none"> Multiply and divide whole numbers by 10, 100 & 1000. Identify multiples and factors including finding all factor pairs of a number, and common factors of two numbers. Recognise and use square numbers and cube numbers and the notation for squared (2) and cubed (3). Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. | <p>mentally drawing upon known facts</p> <ul style="list-style-type: none"> Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2-digit numbers. Divide numbers up to 4 digits by 1-digit number using the formal written method of short division and interpret remainders appropriately for the context. Solve problems involving addition & subtraction, multiplication & division and a combination of these including understanding the use of the equals sign. <p><u>Number: Fractions</u></p> <ul style="list-style-type: none"> Compare and order fractions whose denominators are multiples of the same number. | <p>other and write mathematical statements >1 as mixed number e.g. $\frac{2}{5} + \frac{4}{5} = 1 \frac{1}{5}$</p> <ul style="list-style-type: none"> Add & subtract fractions with the same denominator and denominators that are multiples of the same number. <p><u>Number: Decimals & Percentages</u></p> <ul style="list-style-type: none"> Read, write, order and compare numbers with up to 3 decimal places. 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 1 decimal place. Solve problems involving number up to 3 decimal places. Recognise the % symbol and | <ul style="list-style-type: none"> Find the effect of dividing one or two digit numbers by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths. Solve simple measure problems involving fractions and decimals to two decimal places. Convert between different units of measure (e.g. k to m) <p><u>Geometry: Properties of shape</u></p> <ul style="list-style-type: none"> Identify 3D shapes, including cubes and other cuboids from 2D representations. Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning | <p>m; cm and mm; g and kg; l and ml)</p> <ul style="list-style-type: none"> Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Solve problems involving converting between units of time. <p><u>Measurement: Volume</u></p> <ul style="list-style-type: none"> Estimate volume (e.g. using 1cm^3 blocks to build cuboids <i>inc cubes</i> and capacity e.g. using water). Use all four operations to solve problems involving measure. <p><u>Consolidation</u></p> |
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| | <p>with increasingly large numbers</p> <ul style="list-style-type: none"> ○ Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition & subtraction). 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. <p><u>Statistics</u> Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables.</p> | <p><u>Measurement: Area & Perimeter</u></p> <ul style="list-style-type: none"> ○ Measure and calculate the perimeter of composite rectilinear shapes in cm m. ○ Calculate and compare the area of rectangles (inc squares) and including using standard units, cm², m² estimate the are of irregular shapes. <p><u>Consolidation</u></p> | <ul style="list-style-type: none"> ○ Identify, name and write equivalent fractions of a given fraction, represented visually including tenths & hundredths. | <p>understand that per cent relates to 'number of parts per hundred', and relate write percentages as a fraction with denominator 100 as a decimal.</p> <ul style="list-style-type: none"> ○ 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 of a multiple of 10 or 25. <p><u>Consolidation</u></p> | <p>about equal sides and angles.</p> <ul style="list-style-type: none"> ○ Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. ○ Draw given angles and measure them in degrees. ○ Identify angles at a point and 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° <p><u>Geometry: Position & Direction</u></p> <ul style="list-style-type: none"> ○ 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. | |
| 6 | <p><u>Number: Place Value</u></p> <ul style="list-style-type: none"> ○ Read, write, order and compare | <p><u>Number: Fractions</u></p> <ul style="list-style-type: none"> ○ Use common factors to simplify | <p><u>Number: Decimals</u></p> <ul style="list-style-type: none"> ○ Identify the value of each digit in | <p><u>Measurement: Converting Units</u></p> | <p><u>Geometry: Properties of shape</u></p> | <p><u>Investigations</u> <i>White Rose Problem of the Day</i></p> |

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| | <p>numbers up to 10,000,000 and determine the value of each digit.</p> <ul style="list-style-type: none"> ○ Round any whole number to required degree of accuracy. ○ Use negative numbers in context, and calculate intervals across zero. ○ Solve number and practical problems that involve all of the above. <p><u>Number: Addition & Subtraction, Multiplication & Division</u></p> <ul style="list-style-type: none"> ○ Solve addition & subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ○ Multiply multi-digit numbers up to 4 digits by a 2digit number using the formal written methods of long multiplication. ○ Divide numbers up to 4 digits by a 2- | <p>fraction; use common multiples to express fractions in the same denomination.</p> <ul style="list-style-type: none"> ○ Compare and order fractions, including fractions >1 ○ Generate and describe linear number sequences (with fractions) ○ Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions. ○ Multiply simple pairs of proper fractions writing the answer in its simplest form. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ ○ Divide proper fractions by whole numbers $\frac{1}{3} \div 2 = \frac{1}{6}$ ○ Associate a fraction with division and calculate decimal fraction equivalents (e.g. | <p>numbers given to 3 decimal places and multiply numbers by 10, 100 and 1000 giving answers up to 3 decimal places.</p> <ul style="list-style-type: none"> ○ Multiply 1-digit numbers with up to 2 decimal places by whole numbers. ○ Use written division methods in cases where the answer has up to 2 decimal places. ○ Solve problems which require answers to be rounded to specified degrees of accuracy. <p><u>Number: Percentages</u></p> <ul style="list-style-type: none"> ○ Solve problems involving the calculation of percentages (e.g. of measures and such as 15% of 360) and the use of percentages for comparison. ○ Recall and use equivalences between simple fractions, | <ul style="list-style-type: none"> ○ Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. ○ Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 dp. ○ Convert between miles and kilometers. <p><u>Measurement: Area, Perimeter & Volume</u></p> <ul style="list-style-type: none"> ○ Recognise that shapes with the same areas can have different perimeters and vice versa. ○ Recognise when it is possible to use formulae for area | <ul style="list-style-type: none"> ○ Draw 2D shapes using given dimensions and angles ○ Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons. ○ Recognise angles where they meet at a point, are on a straight line, or are vertically opposite and find missing angles. <p><u>Problem Solving</u> <i>White Rose Problem of the Day</i></p> <p><u>Statistics</u></p> <ul style="list-style-type: none"> ○ Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius ○ Interpret and construct pie charts and line graphs and use | <p><u>Consolidation</u></p> |
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| | <p>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.</p> <ul style="list-style-type: none"> ○ Perform mental calculations, including with mixed operations and large numbers. ○ Identify common factors, common multiples and prime numbers. ○ Use their knowledge of the order of operations to carry out calculations involving the four operations. ○ Solve problems involving addition, subtraction, multiplication and division. ○ Use estimation to check answers to calculations and determine the | <p>0.375) for a simple fraction (e.g. $\frac{1}{8}$)</p> <ul style="list-style-type: none"> ○ Recall and use equivalences between simple fractions, decimals and percentages, including different contexts. <p><u>Geometry: Position & Direction</u></p> <ul style="list-style-type: none"> ○ Describe positions on the full coordinate grid (all four quadrants) ○ Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. <p><u>Consolidation</u></p> | <p>decimals and percentages, including in different contexts.</p> <p><u>Number: Algebra</u></p> <ul style="list-style-type: none"> ○ Use simple formulae ○ Generate and describe linear number sequences ○ Express missing number problems algebraically ○ Find pairs of numbers that satisfy an equation with two unknowns. ○ Enumerate possibilities of combinations of two variables. | <p>and volume of shapes.</p> <ul style="list-style-type: none"> ○ Calculate the area of parallelograms and triangles. ○ Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm^3, m^3 and extending to other units (mm^3 and km^3) <p><u>Number: Ratio</u></p> <ul style="list-style-type: none"> ○ Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication & division facts. ○ Solve problems involving similar shapes where the scale factor is known or can be found. ○ Solve problems involving unequal sharing and grouping using knowledge of | <p>these to solve problems,</p> <ul style="list-style-type: none"> ○ Calculate the mean as an average. | |
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| | context of a problem, an appropriate degree of accuracy. | | | fractions and multiples. <u>Consolidation</u> | | |
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