# National Curriculum Progression (White Rose Maths hub, Maths Guidance 2023)

## Minet Junior School

H Elderfield

Summer 2025

| | Year 3 | Year 4 | Year 5 | Year 6 |
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| Place Value: Counting | • Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number | • Count in multiples of 6, 7, 9, 25 and 1000<br>• Count backwards through zero to include negative numbers | • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.<br>• Count forwards and backwards with positive and negative whole numbers, including through zero | |
| Place Value: Represent | • Identify, represent and estimate numbers using different representations<br>• Read and write numbers up to 100 in numerals and in words | • Identify, represent and estimate numbers using different representations<br>• 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 | • Read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit<br>• Read Roman numerals to 1000 (M) and recognise year written in Roman numerals. | • Read, write, (order and compare) numbers up to 10, 000, 000 and determine the value of each digit |
| Place Value: Use PV and Compare | • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)<br>• Compare and order numbers to 1000 | • Find 1000 more or less than a given number<br>• Recognise the place value of each digit in a four-digit number (thousands, | • (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 |

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| | | hundreds, tens and ones)<br>• Order and compare numbers beyond 1000 | | |
| Place Value: Problems and Rounding | • Solve number and problems and practical problems involving these ideas | • Round any number to the nearest 10, 100 or 1000<br>• Solve number and practical problems that involve all of the above and with increasingly large positive numbers | • Interpret negative numbers in context<br>• Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 00.<br>• Solve number problems and practical problems that involve all of the above | • Round any whole number to a required degree of accuracy<br>• Use negative numbers in context, and calculate intervals across zero<br>• Solve number and practical problems that involve all of the above |

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| Addition and Subtraction: Recall, represent, use | • Estimate the answer to a calculation and use inverse operations to check answers | • Estimate and use inverse operations to check answers to a calculation | • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy | |
| Addition and Subtraction: Calculations | • Add and subtract numbers mentally<br>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction | • Add and subtract numbers with up to four digits using the formal written methods of columnar addition | • Add and subtract whole numbers with more than four digits, including using formal written methods<br>• Add and subtract numbers mentally with increasingly large numbers | • Perform mental calculations, including with mixed operations and large numbers<br>• Use their knowledge of the order of operations to carry out calculations involving the four operations |

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| | | and subtraction where appropriate | | |
| Addition and Subtraction: Solve problems | • Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction | • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why | • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why<br>• Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. | • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why |

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| Multiplication and Division: Recall, represent, use | • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. | • Recall multiplication and division facts for multiplication tables up to 12x12<br>• 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<br>• Recognise and use factor pairs and commutativity in mental calculations | • Identify multiplies and factors, including finding all factor pairs of a number, and common factors of two numbers<br>• Know and use the vocabulary of primer numbers, prime factors and composite (non-prime) numbers<br>• Establish whether a number up to 100 is prime and recall prime numbers up to 19<br>• Recognise and use square numbers and cube numbers, and the notations for squared and cubed. | • Identify common factors, common multiples and prime numbers<br>• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. |
| Multiplication and Division: Calculations | • 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. | • 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-digit or two-digit number using a formal written method, including long multiplication for two-digit numbers<br>• Multiply and divide numbers mentally drawing upon known facts | • Multiply multi-digit numbers up to 4 digits by a two digit whole number using the formal written method of long multiplication<br>• Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long |

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| | | | • 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<br>• Multiply and divide whole numbers and those involving by 10, 100 and 1000 | division, and interpret remainders as whole umber remainders, fractions, or by rounding, as appropriate for the context<br>• 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<br>• Perform mental calculations, including with mixed operations and large numbers |

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| Multiplication and Division: Solve problems | • 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 | • 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. | • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes<br>• Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. | • Solve problems involving addition, subtraction, multiplication and division |
| Multiplication and Division: Combined Operations | | | • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign | • Use their knowledge of the order of operations to carry out calculations involving the four operations. |

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| Fractions: Recognise and Write | • 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<br>• Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators<br>• Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators | • 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<br>• Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number | |
| Fractions: Compare | • Recognise and show, using diagrams, equivalent fractions with small denominators<br>• Compare and order unit fractions, and fractions with the same denominators | • Recognise and show, using diagrams, families of common equivalent fractions | • 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<br>• Compare and order fractions, including fractions > 1 |
| Fractions: Calculations | • Add and subtract fractions with the same denominator within one whole | • 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 | • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions |

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| | | | • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | • Multiply simple pairs of proper fractions, writing the answer in its simplest form<br>• Divide proper fractions by whole numbers |
| Fractions: Solve Problems | • Solve problems that involve all of the above | • 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 | | |

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| Decimals: Recognise and Write | | • Recognise and write decimal equivalents of any number of tenths or hundredths<br>• Recognise and write decimal equivalents to quarter, half and three quarters | • Read and write decimal numbers as fractions<br>• 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 |
| Decimals: Compare | | • Round decimals with one decimal place to the nearest whole number | • Round decimals with two decimal places to the nearest whole number and to one decimal place | |

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| | | • 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 | |
| Decimals: Calculations and Problems | | • 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 | • Solve problems involving number up to three decimal places | • Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimals places<br>• Multiply one-digit numbers with up to two decimal places by whole numbers<br>• Use written division methods in cases where the answer has up to two decimal places<br>• Solve problems which require answers to be rounded to specified degrees of accuracy |

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| Fractions, Decimals and Percentages | | • Solve simple measure and money problems involving fractions and decimals to two decimal places | • Recognise the percent 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 | • Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction<br>• Recall and use equivalences between simple fractions, decimals and |

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| | | | • Solve problems which require knowing percentage and decimal equivalents of half, quarter, a fifth, two fifths and four fifths and those fractions with a denominator of a multiple of 10 or 25 | percentages, including in different contexts |

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| Ratio and Proportion | | | | • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts<br>• Solve problems involving the calculation of percentages and the use of percentages for comparison<br>• Solve problems involving similar shapes where the scale factor is known or can be found<br>• Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples |

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| Algebra | | | | • Use simple formulae<br>• Generate and describe linear number sequences<br>• Express missing number problems algebraically<br>• Find pairs of numbers that satisfy an equation with two unknowns<br>• Enumerate possibilities of combinations of two variables |

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| Measurement: using measures | • Measure, compare, and subtract lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) | • Convert between different units of measure (for examples hours to minutes)<br>• Estimate, compare and calculate different measures | • Convert between different units of metric measure<br>• Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints<br>• Use all four operations to solve problems involving measure using decimal notation, including scaling | • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate<br>• 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 three decimal places |

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| | | | | • Convert between miles and kilometres |
| Measurement: money | • Add and subtract amounts of money to give change, using both £ and p in practical contexts | • Estimate, compare and calculate different measures, including money in pounds and pence | • Use all four operations to solve problems involving measure | |
| Measurement: time | • Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12- hour and 24-hour clocks<br>• 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<br>• Know the number of seconds in a minute and the number of days in each month , year and leap year<br>• Compare durations of events (for example how | • Read, write and convert time between analogue and digital 12- and 24 – hour clocks<br>• Solve problems involving converting from hours to minutes; minutes to seconds etc | • Solve problems involving converting between units of time | |

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| | long does it take to complete particular tasks) | | | |
| Measurement: perimeter, area, volume | • Measure the perimeter of simple 2-D shapes | • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres<br>• Find the area of rectilinear shapes by counting squares | • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres<br>• Calculate and compare the area of rectangles, and including using standard units, square centimetres and square metres and estimate the area of irregular shapes<br>• Estimate volume (using 1cm cubed blocks to build cuboids) and capacity | • Recognise that shapes with the same areas can have different perimeters and vice versa<br>• Recognise when it is possible to use formulae for area and volume of shapes<br>• Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres and cubic metres, and extending to other units. |

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| Geometry: 2-D shapes | • Draw 2-D shapes | • Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br>• Identify lines of symmetry in 2-D shapes presented in different orientations | • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles<br>• Use the properties of rectangles to deduce related facts and find missing lengths and angles | • Draw 2-D shapes using given dimensions and angles<br>• Compare and classify geometric shapes based on their properties and sizes<br>• Illustrate and name parts of circle, including radius, diameter and circumference and know that the diameter is twice the radius |
| Geometry: 3-D shapes | • Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them | | • Identify 3-D shapes, including cubes and other cuboids, from 2-D representations | • Recognise, describe and build simple 3-D shapes, including making nets |

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| Geometry: angles and lines | • Recognise angles as a property of shape or a description of a tur<br>• 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<br>• Identify horizontal and vertical lines and pairs of perpendicular and parallel lines | • Identify acute and obtuse angles and compare and order angles up to two right angles by size<br>• Identify lines of symmetry in 2-D shapes presented in different orientations<br>• Complete a simple symmetric figure with respect to a specific line of symmetry | • Know angles are measures in degrees; estimate and compare acute, obtuse and reflex angles<br>• Draw given angles, and measure them in degree<br>• Identify angles at a point and one whole turn; angles at a point on a straight line and ½ a turn and other multiples of 90 degrees | • Find unknown angles in any triangles, quadrilaterals and regular polygons<br>• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles |
| Geometry: position and direction | | • Describe positions on a 2-D grid as coordinates in the first quadrant<br>• Describe movements between positions as translations of a given unit to the left/right and up/down<br>• Plot specified points and draw sides to complete a given polygon | • Identify , describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shapes has not changed | • Describe positions on the full coordinate grid (all four quadrants)<br>• Draw and translate simple shapes on the coordinate plane, and reflect them in the axes |

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| Statistics: present and interpret | • Interpret and present data using bar charts, pictograms and tables | • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs | • Complete, read and interpret information in tables, including timetables | • Interpret and construct pie charts and line graphs and use these to solve problems |
| Statistics: solve problems | • Solve one-step and two-step questions<br>• Using information presented in scaled bar charts and pictograms and tables | • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs | • Solve comparison, sum and difference problems using information presented in a line graph | • Calculate and interpret the mean as an average |