

New Mathematics Curriculum Progression Overview– Key Stage 2

Subject Area	Focus	Year 3	Year 4	Year 5	Year 6
Number	<i>Number and Place Value</i>	<ul style="list-style-type: none"> Count in multiples of 4, 8, 50 and 100 Find 10 or 100 more/less than a given number Recognise place value to three-digits Read, write, order and compare numbers up to 1000 Identify, represent and estimate numbers Solve number and practical problems** 	<ul style="list-style-type: none"> Count in multiples of 6, 7, 9, 25 and 1000 Find 1000 Count backwards through zero to include negative numbers Recognise place value to four-digits Order/compare numbers beyond 1000 Identify, represent and estimate numbers Round any number to nearest 10, 100 or 1000 Solve larger number and practical problems** Read Roman numerals to 100 and the changing of the system to include zero 	<ul style="list-style-type: none"> Read, write, order and compare numbers to at least 1,000,000 and determine place value Count forwards/backwards in steps of powers of 10 up to 1,000,000 Interpret negative numbers; count forwards/backwards through positive and negative numbers Round numbers up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 Solve larger number and practical problems** Read Roman numerals to 1000 and years 	<ul style="list-style-type: none"> Read, write, order and compare numbers up to 10,000,000 and determine place value Round any whole number to a required degree of accuracy Use negative numbers and calculate intervals across zero Solve larger number and practical problems**
	<i>Addition and Subtraction</i>	<ul style="list-style-type: none"> Add and subtract mentally a three-digit numbers and ones, tens and hundreds Add and subtract with up to three digits, using formal written methods (column) Estimate an answer and use inverse operations to check answers Solve problems involving missing numbers, using number facts and place value 	<ul style="list-style-type: none"> Add and subtract with up to four digits using formal written methods (column) where appropriate Estimate an answer and use inverse operations to check answers Solve two-step addition and subtraction problems in contexts, deciding methods/operations to use and why 	<ul style="list-style-type: none"> Add and subtract numbers with more than 4 digits including using formal written methods (column) Add and subtract mentally with increasingly larger numbers Use rounding to check answers and determine the levels of accuracy Solve multi-step addition and subtraction problems in contexts, deciding methods/operations to use and why 	<ul style="list-style-type: none"> Perform mental calculations, including mixed operations and larger numbers Identify prime numbers Use knowledge of the order of operations to carry out calculations Use estimation to check answers and determine the levels of accuracy Solve multi-step addition and subtraction problems in contexts, deciding methods/operations to use and why
	<i>Multiplication and Division</i>	<ul style="list-style-type: none"> Recall multiplication and division facts for 3, 4 and 8 times tables Write and calculate mathematical statements for multiplication and division using the multiplication tables they know Solve problems including missing numbers, 	<ul style="list-style-type: none"> Recall multiplication and division facts for times tables up to 12 x 12 Use place value and known facts to multiply and divide mentally including; multiply by 0 and 1, divide by 0 and 1, multiply together three numbers Recognise and use factor 	<ul style="list-style-type: none"> Identify multiples and factors. Including finding all factor pairs of a number and common factors of two numbers Know and use the vocabulary of prime numbers, prime factors and composite numbers Establish whether a number 	<ul style="list-style-type: none"> Multiply multi-digit numbers up to four-digits by a two-digit whole number using the formal written method of long multiplication Divide numbers up to four-digits by a two-digit number using the formal written method of long division, and interpret remainders as

		<p>multiplication and division, positive integer scaling and correspondence problems (n objects related to m objects)</p>	<p>pairs and commutativity in mental calculations</p> <ul style="list-style-type: none"> • Multiply two-digit and three-digit numbers by a one-digit number using a formal written layout • Solve problems including the distributive law to multiply two-digit numbers by one-digit, integer scaling problems and correspondence problems (n objects related to m objects) 	<p>up to 100 is prime; recall prime numbers up to 19</p> <ul style="list-style-type: none"> • Multiply numbers up to four-digits by a one or two-digit number using a formal written method including long multiplication • Multiply and divide numbers mentally using known facts • Divide numbers up to four-digits by a one-digit number using the formal written method of short division and interpret remainders • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • Recognise and use square and cube numbers and their notations (² and ³) • Solve problems involving multiplication and division including scaling by simple fractions and involving simple rates 	<p>whole number remainders, fractions, or by rounding, as appropriate</p> <ul style="list-style-type: none"> • Divide numbers up to four-digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders • Identify common factors, common multiples and prime numbers
	<p>Fractions (including Decimals and Percentages)</p>	<ul style="list-style-type: none"> • Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts or dividing one-digit numbers by 10 • Recognise, find and write fractions of a discrete set of objects with small denominators • Recognise and show using diagrams, equivalent fractions with small denominators • Add and subtract fractions with small denominators within one whole • Compare and order unit fractions with the same denominators • Solve fraction problems** 	<ul style="list-style-type: none"> • Recognise and show using diagrams families of common equivalent fractions • Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10 • Solve problems involving harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions and whole-number answers • Add and subtract fractions with the same denominator • Recognise and write decimal equivalents for tenths and hundredths • Recognise and write decimal equivalents for $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ • Find the effect of dividing a one or two-digit number by 	<ul style="list-style-type: none"> • Compare and order fractions whose denominators share the same multiple • Identify, name and write equivalent fractions of a given fraction, including tenths and hundredths • Recognise mixed numbers and improper fractions; convert from one form to the other and write mathematical statements • Add and subtracts fractions with the same denominator or with a shared multiple • Multiply proper fractions and mixed numbers by whole numbers • Read and write decimal numbers as fractions • Recognise and use thousandths and relate them to tenths, hundredths and 	<ul style="list-style-type: none"> • Use common factors to simplify fractions, use common multiples to express fractions in the same denomination • Compare and order fractions including fractions > 1 • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • Multiply simple pairs of proper fractions, writing the answer in its simplest form • Divide proper fractions by whole numbers • Associate a fractions with division and calculate decimal fraction equivalents for a simple fraction • Identify the value of each digit in numbers given to

			<ul style="list-style-type: none"> 10 or 100 and their value Round decimals with one decimal place to the nearest whole number Compare decimals up to two decimal places Solve simple measure and money problems involving fractions and decimals to two decimal places 	<ul style="list-style-type: none"> decimal equivalents Round decimals with two decimal places to the nearest whole number and to one decimal place Read, write, order and compare numbers to three decimal places Solve problems up to three decimal places Recognise the percent (%) symbol and understand that per cent relates to 'number of parts per hundred' Write percentages as a fraction with denominator 100 and as a decimal Solve problems which involve percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and fractions with a denominator of a multiple of 10 or 25 	<ul style="list-style-type: none"> three decimal places and multiply and divide numbers by 10, 100 and 1000 given answers up to three decimal places Multiply one-digit numbers with up to two decimal places by whole numbers Use written division methods in cases where the answer has up to two decimal places Solve problems which require answers to be rounded to specified degrees of accuracy Recall and use equivalences between simple fractions, decimals and percentages
	Ratio and Proportion				<ul style="list-style-type: none"> Solve problems involving the relevant sizes of two quantities where missing values can be found by using integer multiplication and division facts Solve problems involving the calculation of percentages and the use of percentages for comparison 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 fractions and multiples
	Algebra				<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

					<ul style="list-style-type: none"> unknowns Enumerate possibilities of combinations of two variables
Measurement		<ul style="list-style-type: none"> Measure, compare, add and subtract lengths, mass, volume and capacity Measure the perimeter of simple 2-D shapes Add and subtract amounts of money to give change, using £ and p Tell and write the time from an analogue clock, including using Roman numerals I-XII, 12-hour and 24-hour clocks Estimate and read time 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 Know the number of seconds in a minute/number of days in each month, year and leap year Compare durations of events 	<ul style="list-style-type: none"> Convert between different units of measure Measure and calculate the perimeter of rectilinear figures in cm and m Find the area of rectilinear figures by counting squares Estimate, compare and calculate different measures, including money in £ and p Read, write and convert time between analogue and digital 12- and 24-hour clocks Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days 	<ul style="list-style-type: none"> Convert between different units of metric measure Understand and use approximate equivalences between metric units and common imperial units Measure and calculate the perimeter of composite rectilinear shapes in cm and m Calculate and compare the area of rectangles using standard units, cm^2, m^2, and estimate the area of irregular shapes Estimate volume and capacity Solve problems involving converting between units of time Use all four operations to solve problems involving measure using decimal notation, including scaling 	<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 Use, read, write and convert between standard units of length, mass, volume and time, using decimal notation up to three decimal places Convert between miles and kilometres Recognise that shapes with the same area can have different perimeters Recognise when it is possible to use formulae for area and volume of shapes Calculate the area of parallelograms and triangles Calculate, estimate and compare volume of cubes and cuboids using standard units, cm^3, m^3, mm^3 and km^3
Geometry	Properties of Shapes	<ul style="list-style-type: none"> Draw 2-D shapes and make 3-D shapes using modelling materials Recognise, describe and draw 3-D shapes in different orientations Recognise angles as a property of shape/description of a turn Identify right-angles; recognise two right-angles make a half-turn, three make three-quarters of a turn and four a complete turn Identify if angles are greater than/less than a right-angle Identify horizontal, vertical, perpendicular and parallel lines 	<ul style="list-style-type: none"> Compare and classify geometric shapes including quadrilaterals and triangles, based on their properties and sizes Identify acute and obtuse angles and compare and order angles up to two right angles by size Identify lines of symmetry in 2-D shapes presented in different orientations Complete a simple symmetric figure with respect to a specific line of symmetry 	<ul style="list-style-type: none"> Identify 3-D shapes including cubes and other cuboids from 2-D representations Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles Draw given angles and measure them in degrees ($^{\circ}$) Identify; angles at a point of one whole turn, angles at a point and half a turn, other multiples of 90° Use the properties of rectangles to deduce related facts and find missing lengths and angles Distinguish between regular and irregular polygons based on equal sides and angles 	<ul style="list-style-type: none"> Draw 2-D shapes using given dimensions and angles Recognise, describe and build simple 3-D shapes, including nets Compare and classify geometric shapes based on properties and sizes Find unknown angles in triangles, quadrilaterals and regular polygons Illustrate and name parts of circles, including radius, diameter (understanding that this is twice the radius) and circumference Recognise angles that meet at a point, are on a straight line, vertically opposite and missing angles

	<i>Position and Direction</i>		<ul style="list-style-type: none"> Describe positions on a 2-D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left/right and up/down Plot specified points and draw sides to complete a given polygon 	<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 	<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
Statistics	<ul style="list-style-type: none"> Interpret and present data using bar charts, pictograms and tables Solve one and two-step problems in scaled bar charts, pictograms and tables 	<ul style="list-style-type: none"> Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	<ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in a line graph Complete, read and interpret information in tables, including timetables 	<ul style="list-style-type: none"> Interpret and construct pie charts and line graphs and use these to solve problems Calculate and interpret the mean as an average 	