

## Mill Lane - Maths Progression Grid – Class 5 / 6

Term	Topic	Objectives
Autumn 1	Number and Place Value	<p>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</p> <p>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</p>
	Addition and subtraction	<p>Add and subtract numbers <b>mentally</b> with increasingly large numbers</p> <p>perform mental calculations, including with mixed operations and large numbers</p> <p>solve problems involving addition, subtraction</p> <p>♣ solve addition and subtraction multi-step problems in contexts, deciding which <b>operations</b> and methods to use and why</p> <p>use their knowledge of the order of operations (<b>BODMAS</b>) to carry out calculations involving the four operations</p>
	Measurement	<p><b>Convert between different units of metric measure</b> (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) and understand <b>scale</b></p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate ♣ use, read, write <b>and convert between standard units</b>, 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</p>
	Geometry –shape	<p><b>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</b> ♣</p> <p>draw given angles, and measure them in degrees (o) ♣ identify: ♣ angles at a point and one whole turn (total 360o) ♣ angles at a point on a straight line and 2 1 a turn (total 180o) ♣ other multiples of 90o</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>
	Multiplication and division	<p><b>multiply and divide numbers mentally</b> drawing upon known facts</p> <p>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the <b>formal written method of long multiplication</b></p>
	Fractions	<p>Compare and order fractions whose denominators are all multiples of the same number</p> <p><b>Identify, name and write equivalent fractions of a given fraction</b>, represented visually, including tenths and hundredths</p> <p>use common factors to simplify fractions; use common multiples to <b>express fractions in the same denomination</b> ♣ compare and order fractions, including fractions &gt; 1</p>
Autumn 2	Geometry - Shape Position and direction	<p>identify, describe and represent the <b>position</b> of a shape (using <b>coordinates</b>) following a reflection or translation, using the appropriate language, and know that the shape has not changed.</p> <p>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>
	<b>Statistics</b>	<p>Solve comparison, sum and difference problems using information presented in a line graph</p> <p>Complete, read and <b>interpret</b> information in tables, including timetables</p> <p>♣ interpret and construct pie charts and line graphs and use these to solve problems ♣ calculate and interpret the mean as an average.</p>
	Number and Place Value	<p><b>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</b></p> <p>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p><b>round</b> any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</p> <p>♣ solve number and practical problems that involve all of the above</p>
	Addition and subtraction	<p><b>Add and subtract numbers mentally</b> with increasingly large numbers</p> <p>add and subtract whole numbers with more than 4 digits, including using formal <b>written</b> methods (columnar addition and subtraction)</p> <p><b>perform mental calculations, including with mixed operations and large numbers</b></p> <p>solve problems involving addition, subtraction</p> <p>♣ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations</p>

	Measurement	<p><b>convert between different units of metric measure</b> (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ♣ calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</p> <p>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 <b>convert between standard units</b>, 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</p>
	Geometry –shape	<p><b>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles ♣</b></p> <p>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 2 1 a turn (total 180°) ♣ other multiples of 90°</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>
Spring 1	Multiplication and division	<p><b>multiply and divide numbers mentally drawing upon known facts</b></p> <p>multiply numbers up to 4 digits by a one- or two-digit number using a formal <b>written</b> method, including long multiplication for two-digit numbers</p> <p><b>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</b></p> <p>identify common factors, common multiples and prime numbers</p>
	Fractions	<p><b>compare and order fractions whose denominators are all multiples of the same number ♣ identify, name and write equivalent fractions of a given fraction</b>, represented visually, including tenths and hundredths</p> <p>use common factors to simplify fractions; use common multiples to <b>express fractions in the same denomination</b> ♣ compare and order fractions, including fractions &gt; 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 [for example, <math>4 \frac{1}{2} \times 2 \frac{1}{3} = 8 \frac{1}{3}</math>] ♣ divide proper fractions by whole numbers [for example, <math>3 \frac{1}{2} \div 2 = 6 \frac{1}{4}</math>]</p>
	Shape Position and direction	<p>identify, describe and represent the position of a shape (using <b>coordinates</b>) following a reflection or translation, using the appropriate language, and know that the shape has not changed.</p> <p>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>
	Statistics	<p>solve comparison, sum and difference problems using information presented in a line graph ♣ complete, read and <b>interpret</b> information in tables, including timetables</p> <p>♣ interpret and construct pie charts and line graphs and use these to solve problems ♣ calculate and interpret the mean as an average.</p>
	Number and Place Value	<p><b>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</b></p> <p>♣ count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p><b>round</b> any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>read, write, order and compare numbers up to 10 000 000 and <b>determine the value of each digit</b></p> <p>♣ solve number and practical problems that involve all of the above</p>
	Addition and subtraction	<p><b>♣ add and subtract numbers mentally with increasingly large numbers</b></p> <p>add and subtract whole numbers with more than 4 digits, including using formal <b>written</b> methods (columnar addition and subtraction)</p> <p><b>perform mental calculations, including with mixed operations and large numbers</b></p> <p>solve problems involving addition, subtraction</p> <p>♣ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations</p>
Spring 2	Measurement	<p><b>convert between different units of metric measure</b> (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ♣ calculate and compare the area of rectangles (including squares), and including using standard units,</p>

		<p>square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</p> <p>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 <b>convert between standard units</b>, 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</p> <p>recognise that shapes with the same areas can have different perimeters and vice versa</p>
	Geometry –shape	<p><b>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</b> ♣</p> <p>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 2 1 a turn (total 180°) ♣ other multiples of 90°</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>
	Multiplication and division	<p><b>multiply and divide numbers mentally drawing upon known facts</b></p> <p>divide numbers up to 4 digits by a one-digit number using the formal <b>written</b> method of short division and interpret remainders appropriately for the context</p> <p><b>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</b></p> <p>identify common factors, common multiples and prime numbers</p> <p>♣ 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 ♣ 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</p>
	Fractions	<p>compare and order fractions whose denominators are all multiples of the same number ♣ <b>identify, name and write equivalent fractions of a given fraction</b>, represented visually, including tenths and hundredths</p> <p>use common factors to simplify fractions; use common multiples <b>to express fractions in the same denomination</b> ♣ compare and order fractions, including fractions &gt; 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 [for example, <math>4 \frac{1}{2} \times 2 \frac{1}{2} = 8 \frac{1}{2}</math>] ♣ divide proper fractions by whole numbers [for example, <math>3 \frac{1}{2} \div 2 = 6 \frac{1}{2}</math>]</p>
	Shape Position and direction	<p>identify, describe and represent the position of a shape (using <b>coordinates</b>) following a reflection or translation, using the appropriate language, and know that the shape has not changed.</p> <p>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>
	Statistics	<p>solve comparison, sum and difference problems using information presented in a line graph ♣</p> <p>complete, read and <b>interpret</b> information in tables, including timetables</p> <p>♣ interpret and construct pie charts and line graphs and use these to solve problems ♣ calculate and interpret the mean as an average.</p>
Summer 1	Number and Place Value	<p><b>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</b></p> <p>♣ count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p><b>round</b> any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>read, write, order and compare numbers up to 10 000 000 and <b>determine the value of each digit</b></p> <p>♣ solve number and practical problems that involve all of the above</p>
	Addition and subtraction	<p><b>add and subtract numbers mentally with increasingly large numbers</b></p> <p>add and subtract whole numbers with more than 4 digits, including using formal <b>written</b> methods (columnar addition and subtraction)</p> <p><b>perform mental calculations, including with mixed operations and large numbers</b></p> <p>solve problems involving addition, subtraction</p> <p>♣ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations</p>
	Measurement	<p><b>convert between different units of metric measure</b> (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ♣</p>

		<p>calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate ♣ <b>use, read, write and convert between standard units</b>, 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</p> <p>recognise that shapes with the same areas can have different perimeters and vice versa</p>
	Geometry –shape	<p><b>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</b> ♣</p> <p>draw given angles, and measure them in degrees (o) ♣ identify: ♣ angles at a point and one whole turn (total 360o) ♣ angles at a point on a straight line and 2 1 a turn (total 180o) ♣ other multiples of 90o</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>
	Multiplication and division	<p>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 (nonprime) numbers ♣ establish whether a number up to 100 is prime and recall prime numbers up to 19 ♣ multiply numbers up to 4 digits by a one- or two-digit number using a formal <b>written</b> method, including long multiplication for two-digit numbers ♣ <b>multiply and divide numbers mentally drawing upon known facts</b> ♣ divide numbers up to 4 digits by a one-digit number using the formal <b>written</b> method of short division and interpret remainders appropriately for the context ♣ multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 Mathematics – key stages 1 and 2 33 Statutory requirements ♣ 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 their knowledge of factors and multiples, squares and cubes ♣ solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign ♣ solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</p> <p><b>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</b> ♣ 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 ♣ 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 ♣ 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 addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p>
SATs	Fractions (ratio and proportion)	<p>compare and order fractions whose denominators are all multiples of the same number ♣ <b>identify, name and write equivalent fractions of a given fraction</b>, represented visually, including tenths and hundredths ♣ recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number [for example, <math>5\frac{2}{5} + 5\frac{4}{5} = 5\frac{6}{5} = 1\frac{1}{5}</math>] ♣ add and subtract fractions with the same denominator and denominators that are multiples of the same number ♣ multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams ♣ read and write decimal numbers as fractions [for example, <math>0.71 = \frac{71}{100}</math>] ♣ recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents ♣ <b>round</b> decimals with two decimal places to the nearest whole number and to one decimal place ♣ read, write, order and compare numbers with up to three decimal places ♣ solve problems involving number up to three decimal places ♣ 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 ♣ solve problems which require knowing percentage and decimal equivalents of <math>2\frac{1}{4}</math>, <math>4\frac{1}{5}</math>, <math>5\frac{1}{2}</math>, <math>5\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25.</p> <p>use common factors to simplify fractions; <b>use common multiples to express fractions in the same denomination</b> ♣ compare and order fractions, including fractions <math>&gt; 1</math> ♣ 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 [for example, <math>4\frac{1}{2} \times 2\frac{1}{4} = 8\frac{1}{2}</math>] ♣ divide proper fractions by whole numbers [for example, <math>3\frac{1}{2} \div 2 = 6\frac{1}{4}</math>] ♣ associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple</p>

		<p>fraction [for example, 8 3 ] ♣ 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</p> <p>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, including in different contexts</p> <p>solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts ♣ solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] 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.</p>
Cm3Summer 2	Shape Position and direction	<p>identify, describe and represent the position of a shape (using <b>coordinates</b>) following a reflection or translation, using the appropriate language, and know that the shape has not changed.</p> <p>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>
	Statistics	<p>solve comparison, sum and difference problems using information presented in a line graph ♣ complete, read and <b>interpret</b> information in tables, including timetables</p> <p>♣ interpret and construct pie charts and line graphs and use these to solve problems ♣ calculate and interpret the mean as an average.</p>
	Number and Place Value (and algebra)	<p><b>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</b></p> <p>♣ count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p><b>round</b> any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>interpret <b>negative</b> numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>solve number problems and practical problems that involve all of the above ♣ read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p> <p>read, write, order and compare numbers up to 10 000 000 and <b>determine the value of each digit</b> ♣ round any whole number to a 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> <p>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>
	Addition and subtraction	<p><b>♣ add and subtract numbers mentally with increasingly large numbers</b></p> <p>add and subtract whole numbers with more than 4 digits, including using formal <b>written</b> methods (columnar addition and subtraction)</p> <p>use <b>rounding</b> 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> <p><b>perform mental calculations, including with mixed operations and large numbers</b></p> <p>solve problems involving addition, subtraction</p> <p>♣ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations</p>
	Measurement	<p><b>convert between different units of metric measure</b> (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ♣ understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints ♣ measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ♣ calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes ♣ estimate volume [for example, using 1 <b>cm<sup>3</sup></b> blocks to build <b>cuboids</b> (including <b>cubes</b>)] and capacity [for example, using water] ♣ solve problems involving converting between units of time ♣ use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</p>

		<p>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 three decimal places ♣ convert between miles and kilometres ♣ recognise that shapes with the same areas can have different perimeters and vice versa ♣ 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, including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [for example, mm<sup>3</sup> and km<sup>3</sup>].</p>
	<p>Geometry –shape</p>	<p>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 and discuss angles in pentagons and hexagons</p> <p>♣ 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 2 1 a turn (total 180°) ♣ 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 reasoning about equal sides and angles.</p> <p>draw 2-D shapes using given dimensions and angles ♣ recognise, describe and build simple 3-D shapes, including making nets ♣ compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons ♣ illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius ♣ recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p>

Notes:

Notes:

All children have an individual target which must be from the number or place value or calculation strands.

At the start of each lesson children will recap the previous week's learning – this will form what is often known as the oral and mental starter.

Objectives highlighted in yellow denote learning which is expected of the vast majority of children by the end of the year. Many children will exceed this.

Year 5 objectives are in blue

Year 6 objectives are in red