Mill Lane - Maths Progression Grid – Class 4 / 5

Term	Topic	Objectives
Autumn 1	Number and Place Value	Recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s). Order and compare numbers beyond 1,000. Find 1,000 more or less than a given number. Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
	Addition and Subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. And use terms **plus total, minus, subtract** Add and subtract numbers **mentally** with increasingly large numbers Add and subtract whole numbers with more than 4 digits, including using formal **written** methods (columnar addition and subtraction)
	Multiplication and Division	Recall multiplication and division facts for multiplication tables up to 12 × 12 Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers Multiply and divide numbers mentally drawing upon known facts Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
Autumn 2	Fractions	Add and subtract fractions with the same denominator. And know the terms **numerator** and **denominator** Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$. Recognise and write decimal equivalents of any number of tenths or hundreds. Compare and order fractions whose denominators are all multiples of the same number ♣ identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
	Measurement	Find the **area** of rectilinear shapes by counting squares. And use the term **cm2** Measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres. **Convert** between different **units of** metric **measure** (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
	Geometry (property of shape and position and direction)	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 To know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees (o) using a **protractor** Identify: angles at a point and one whole turn (total 360 degrees) angles at a point on a straight line and half a turn (total 180o) other multiples of 90degrees.
Spring 1	Number and place value	Recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s). Order and compare numbers beyond 1,000. Find 1,000 more or less than a given number. Count in multiplies of 6,7,9, 25 and 1000. Count backwards through 0 to include negative numbers Round any number to the nearest 10, 100 or 1,000

		Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 **round** any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
	Addition and Subtraction Statistics	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. And use terms **plus, total, minus, subtract**
		Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why
		Estimate and use inverse operations to check answers to a calculation.
		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
		Add and subtract numbers **mentally** with increasingly large numbers Add and subtract whole numbers with more than 4 digits, including using formal **written** methods (columnar addition and subtraction) Solve comparison, sum and difference problems using information presented in a line graph Complete, read and **interpret** information in tables, including timetables
	Multiplication and Division	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.
		Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers
		Recognise and use factor pairs and commutativity in mental calculations
		Multiply and divide numbers mentally drawing upon known facts 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
Spring 2	Fractions	Add and subtract fractions with the same denominator. And know the terms **numerator** and **denominator**
		Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$.
		Recognise and write decimal equivalents of any number of tenths or hundreds.
		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 increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
		Compare and order fractions whose denominators are all multiples of the same number ♣ identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
	Measurement	Find the **area** of rectilinear shapes by counting squares. And use the term **cm2**
		Measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres.
		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 and **kg and g and ml to l**
		Convert between different units of metric **measure** (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) and understand **scale** 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 (cm2) and square metres (m2) and estimate the area of irregular shapes.

	Geometry	Describe positions on a 2-D grid as coordinates in the first quadrant
		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 2 right angles by size.
		Identify lines of **symmetry** in 2-D shapes presented in different orientations and know the term **reflect**
		Complete a simple symmetric figure with respect to a specific line of symmetry.
		Identify, describe and represent the **position** of a shape (including a **pentagon** and a **hexagon**) following a reflection or translation and using **coordinates**, using the appropriate language, and know that the shape has not changed.
Summer 1	Number and Place Value	Recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s).
		Order and compare numbers beyond 1,000.
		Find 1,000 more or less than a given number.
		Count in multiplies of 6,7,9, 25 and 1000.
		Count backwards through 0 to include negative numbers
		Round any number to the nearest 10, 100 or 1,000
		Identify, represent and estimate numbers using different representations.
		Solve number and practical problems that involve all of the above and with increasingly large positive numbers
		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
		Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit Count forwards or backwards including **negative** numbers in steps of powers of 10 for any given number up to 1 000 000 **round** any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
	Addition and Subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. And use terms **plus, total, minus, subtract.**
		Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why
		Estimate and use inverse operations to check answers to a calculation.
		To add and subtract numbers **mentally** with increasingly large numbers add and subtract whole numbers with more than 4 digits, including using formal **written** methods (columnar addition and subtraction) use **rounding** to check answers to calculations and determine, in the context of a problem, levels of accuracy To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
	Multiplication and Division	Recall multiplication and division facts for multiplication tables up to 12 × 12
		Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers.
		Recognise and use factor pairs and commutativity in mental calculations.
		Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.
		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.
		Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers To 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 written method, including long multiplication for two-digit numbers

		Multiply and divide numbers mentally drawing upon known facts 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 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
Summer 2	Fractions	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 increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
		Add and subtract fractions with the same denominator and know the terms **numerator** and **denominator**
		Recognise and write decimal equivalents of any number of tenths or hundreds
		Recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$
		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
		Round decimals with 1 decimal place to the nearest whole number
		Compare numbers with the same number of decimal places up to 2 decimal places
		Solve simple measure and money problems involving fractions and decimals to 2 decimal places
		Compare and order fractions whose denominators are all multiples of the same number
		To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
		To recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 5 2 + 5 4 = 5 6 = 1 5 1] To add and subtract fractions with the same denominator and denominators that are multiples of the same number
		To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
		To read and write decimal numbers as fractions [for example, 0.71 = 100 71]
		To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
		To round decimals with two decimal places to the nearest whole number and to one decimal place
		To read, write, order and compare numbers with up to three decimal places
		To solve problems involving number up to three decimal places
		To 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
		To solve problems which require knowing percentage and decimal equivalents of 2 1 , 4 1 , 5 1 , 5 2 , 5 4 and those fractions with a denominator of a multiple of 10 or 25
	Measurement	Measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres
		Find the **area** of rectilinear shapes by counting squares and know the term **cm2**
		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. And know **ml and l and kg and g**
		Estimate, compare and calculate different measures, including money in pounds and pence
		Convert between different units of measure [for example, kilometre to metre; hour to minute]
		To **convert** between different **units of** metric **measure** (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) To understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints and understand **scale**
		To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
		To calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
		To estimate volume [for example, using 1 **cm^3** blocks to build cuboids (including cubes)] and capacity [for example, using water]
		To solve problems involving converting between units of time
		To use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
	Geometry	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 2 right angles by size
		Identify lines of **symmetry** in 2-D shapes presented in different orientations and know the term **reflect**
		Complete a simple symmetric figure with respect to a specific line of symmetry
		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.
		Identify 3-D shapes, including **cubes** and other **cuboids**, from 2-D representations
		To know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles To draw given angles, and measure them in degrees (o)
		To identify angles at a point and one whole turn (total 360o) ♣ angles at a point on a straight line and a half turn is a total of 180 degrees) ♣ other multiples of 90o ♣ 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.

Notes

Year 4 Black text
Year 5 blue pen

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.