MATHS

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Purpose of Study

The purpose of mathematics is to equip children with the knowledge, skills and understanding to be able to understand the world around them. This includes maths skills for functional aspects of life, for example telling the time and handling money, budgeting and also maths skills which facilitate the learning of other subjects, for example geometry skills in design. This means ensuring we have a curriculum that is fully inclusive for all children which:

- Develops children's fluency, reasoning and problem-solving skills – all of which are inextricably linked.
- Develops children's knowledge and understanding of mathematical concepts whilst enabling them to practise and hone skills and methods.
- Enables them to think critically and communicate their understanding to others.
- Gives them opportunities to apply learned mathematical skills, in different contexts, across the curriculum.

Maths aims to ensure all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- can **solve problems** by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

National Curriculum

EYFS - Reception	Year 1	Year 2

Pupils should be taught to:
Number:
• Have a deep understanding of number to 10, including the composition of each number
• Subitise (recognise quantities without counting) up to 5
• Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.
 	
Numerical Patterns:
• Verbally count beyond 20, recognising the pattern of the counting system
• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity
• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally
	Pupils should be taught:
	Number: Number & Place Value
	• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
	• count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
	• given a number, identify one more and one less
	• identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
	• read and write numbers from 1 to 20 in numerals and words.
	
	Number: Addition & Subtraction
	• read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
	• represent and use number bonds and related subtraction facts within 20
	• add and subtract one-digit and two-digit numbers to 20, including zero
	• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9.
	
	Number: Multiplication & Division
	• solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
	
	Number: Fractions
	• recognise, find and name a half as one of two equal parts of an object, shape or quantity
	• recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
		Pupils should be taught:
		Number: Number & Place Value
		• count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
		• recognise the place value of each digit in a two-digit number (tens, ones)
		• identify, represent and estimate numbers using different representations, including the number line
		• compare and order numbers from 0 up to 100; use <, > and = signs
		• read and write numbers to at least 100 in numerals and in words
		• use place value and number facts to solve problems.
		
		Number: Addition & Subtraction
		• *Solve problems with addition and subtraction:*
		  • using concrete objects and pictorial representations, including those involving numbers, quantities and measures
		  • applying their increasing knowledge of mental and written methods
		  • recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
		• *Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:*
		  • a two-digit number and ones
		  • a two-digit number and tens
		  • two two-digit numbers
		  • adding three one-digit numbers
		• show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
		• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
		
		Number: Multiplication & Division

	Measurement
	• *Compare, describe and solve practical problems for:*
	  • lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
	  • mass/weight [for example, heavy/light, heavier than, lighter than]
	  • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]
	  • time [for example, quicker, slower, earlier, later]
	• measure and begin to record the following: lengths and heights; mass/ weight; capacity and volume; time (hours, minutes, seconds)
	• recognise and know the value of different denominations of coins and notes
	• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
	• recognise and use language relating to dates, including days of the week, weeks, months and years
	• tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
	
	Geometry: Properties of Shapes
	• *Recognise and name common 2-D and 3-D shapes, including:*
	  • 2-D shapes [for example, rectangles (including squares), circles and triangles]
	  • 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].
	
	Geometry: Position & Direction
	• describe position, direction and movement, including whole, half, quarter and three-quarter turns.
		• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
		• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( ), division ( ) and equals (=) signs
		• show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
		• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
		
		Number: Fractions
		• recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity
		• write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and ½.
		
		Measurement
		• choose and use appropriate standard units to estimate and measure length/ height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
		• compare and order lengths, mass, volume/capacity and record the results using
		• >, < and =
		• recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
		• find different combinations of coins that equal the same amounts of money
		• solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
		• compare and sequence intervals of time
		• tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
		• know the number of minutes in an hour and the

		number of hours in a day. **Geometry: Properties of Shapes** • identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces • identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] • compare and sort common 2-D and 3-D shapes and everyday objects. **Geometry: Position & Direction** • order and arrange combinations of mathematical objects in patterns and sequences • use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). **Statistics** • interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity • ask and answer questions about totalling and comparing categorical data.

Year 3	Year 4
Pupils should be taught: **Number: Number & Place Value** • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number • recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • compare and order numbers up to 1000 • identify, represent and estimate numbers using different representations • read and write numbers up to 1000 in numerals and in words • solve number problems and practical problems involving these ideas. **Number: Addition & Subtraction**	Pupils should be taught: **Number: Number & Place Value** • count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number • count backwards through zero to include negative numbers • recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • order and compare numbers beyond 1000 • identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1000

- *Add and subtract numbers mentally, including:*
- a three-digit number and ones
- a three-digit number and tens
- a three-digit number and hundreds
- add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

Number: Multiplication & Division

- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- 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
- 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.

Number: Fractions

- 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
- recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- recognise and show, using diagrams, equivalent fractions with small denominators
- add and subtract fractions with the same denominator within one whole [for example, 5/7
- + 1/7 = 6/7]
- compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above

Measurement

- measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- measure the perimeter of simple 2-D shapes
- add and subtract amounts of money to give change, using both £ and p in practical contexts
- 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 zero and place value.

Number: Addition & Subtraction

- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- estimate and use inverse operations to check answers to a calculation
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Number: Multiplication & 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 three 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 one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Number: 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 one hundred and dividing tenths by ten.
- 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
- recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to 1/4, 1/2, 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 one decimal place to the nearest whole number
- compare numbers with the same number of decimal places up to two decimal places
- solve simple measure and money problems involving fractions and decimals to two decimal places.

Year 5	Year 6
• tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks • 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, a.m./p.m., morning, afternoon, noon and midnight • know the number of seconds in a minute and the number of days in each month, year and leap year • compare durations of events [for example to calculate the time taken by particular events or tasks]. **Geometry: Properties of Shapes** • draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them • recognise angles as a property of shape or a description of a turn • 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 • identify horizontal and vertical lines and pairs of perpendicular and parallel lines. **Statistics** • interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	**Measurement** • convert between different units of measure [for example, kilometre to metre; hour to minute] • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • find the area of rectilinear shapes by counting squares • estimate, compare and calculate different measures, including money in pounds and pence. **Geometry: Properties of Shapes** • 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. **Geometry: Position & 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. **Statistics** • 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. • complete a simple symmetric figure with respect to a specific line of symmetry. **Geometry: Position & 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. **Statistics** • 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.

Pupils should be taught:	Pupils should be taught:
Number: Number & 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 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 and 100 000 • 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.	**Number: Number & 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 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 and 100 000 • 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.
Number: Addition & Subtraction • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • 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.	**Number: Addition & Subtraction** • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • 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.
Number: Multiplication & Division • 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 (non-prime) 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 • 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	**Number: Multiplication & Division** • 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 (non-prime) 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 • 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.

• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. **Number: Fractions** • 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 • 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, 2/5 + 4/5 = 6/5 = 1 1/5] 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, 0.71 = 71/100] • 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 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 1/2, 1/4, 1/5, 2/5, 4/5, and those fractions with a denominator of a multiple of 10 or 25 **Measurements** • convert between different units of metric measure (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 (cm2) and square metres (m2) and estimate the area of irregular shapes estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] 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. **Geometry: Properties of Shapes**	**Number: Fractions** • 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 • 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, 2/5 + 4/5 = 6/5 = 1 1/5] • 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, 0.71 = 71/100] • 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 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 1/2, 1/4, 1/5, 2/5, 4/5, and those fractions with a denominator of a multiple of 10 or 25. **Measurement** • convert between different units of metric measure (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^2) and square metres (m^2) and estimate the area of irregular shapes • estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] 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. **Geometry: Properties of Shapes**

• identify 3-D shapes, including cubes and other cuboids, from 2-D 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 about equal sides and angles. • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees (^{o}) • identify angles at a point and one whole turn (total 360^{o}) • identify angles at a point on a straight line and half a turn (total 180^{o}) • identify other multiples of 90^{o}. **Geometry: Position & Direction** • 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. **Statistics** • solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables, including timetables.	• identify 3-D shapes, including cubes and other cuboids, from 2-D 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 about equal sides and angles. • 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°) • identify angles at a point on a straight line and half a turn (total 180°) • identify other multiples of 90°. **Geometry: Position & Direction** • 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. **Statistics** • solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables, including timetables. • Ratio & Proportion • 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. **Algebra** • 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.

Content

The contribution of maths to teaching in other curriculum areas: Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Quality of Education

Intent
Maths is a subject essential to everyday life: critical to science, technology and engineering and necessary for financial literacy and most forms of employment. Maths is a journey and our Mathematicians will explore, practice and apply their learning over time, building up their knowledge to develop their understanding, skills and confidence. We have identified the 'Key Skills' for Maths that are fundamental to pupils' learning and skills in this subject; they are the non-negotiables that pupils must acquire to be successful mathematicians.

Implementation
We want to ensure our daily Maths lessons are delivered in a way that develop lively, enquiring minds and encourage pupils to become self-motivated and confident in their learning. We teach Maths from EYFS to Year 6 and have given this subject a whole school teaching slot every morning, which enables teachers to stream children across the school if necessary. We are aware of the challenges of teaching multiple age groups in one class and so our teaching staff are skilled in working with groups of pupils, to ensure that pupils are working on an age-related and appropriate curriculum. This is particularly important when teaching Maths in order to meet the specific needs of each age group for this subject. We build on progression of knowledge through our use of Key Skills in Maths from EYFS to Year 6. We use a variety of planning schemes (White Rose, Hamilton Trust, Big Maths) to inform our planning, and this was chosen due to its episodic structure; to ensure pupils have plenty of opportunities to revisit their learning to consolidate their understanding, as well as to ensure coherent coverage of the curriculum. Short blocks of teaching units and regular repetition of key skills support children's understanding and help them to secure a firm grasp of the knowledge they need. Staff adapt the planning to meet the needs of our pupils and we also access resources from White Rose, Hamilton Trust, Big Maths and Times Tables Rockstars, which pupils can access from home to support with their Maths learning. Within a weekly sequence of lessons, children are given specific opportunities to reason and problem solve. Discrete opportunities to reason and problem solve are provided and these skills are also integrated into other curriculum areas as often as possible to support children's continued development of problem solving and reasoning skills. In the Foundation Stage, pupils work on a pathway of blocks each term to work towards the EYFSP ELGs which include number, counting, shapes and patterns, measure, addition and subtraction, time and money.

In Key Stage 1, pupils will develop their ability and skills in a range of areas: number and place value, addition and subtraction, measures, shape, time, fractions, multiplication and division.

In Key Stage 2, pupils will develop their ability and skills in a range of areas: number and place value, addition and subtraction, multiplication and division, fractions and decimals, measure, data and shape, time, algebra and ratio.

Our pupils will increase in confidence with number fluency, reasoning and problem solving as they progress through our school.

Impact
Our Mathematicians will become fluent in mathematical understanding and reasoning. They will have quick recall of facts and be able to solve problems by applying their mathematical knowledge with increasing sophistication and will persevere in seeking solutions.

Progression of Knowledge

Substantive knowledge concerns the key facts, concepts, principles and explanatory frameworks in a subject. Knowledge and enquiry in maths are divided into distinct areas and children need to be able to move fluidly between these and be able to make connections when solving sophisticated problems.

These areas are:

- Number
- Measurement
- Geometry
- Statistics

In early years foundation stage are:

- Number
- Shape, Space and Measure

Children need substantive knowledge such as knowing their number bonds and multiplication facts in order to be able to successfully tackle more challenging concepts and ideas. Deliberate repeated practice helps children to build confidence, fluency and efficiency in order to secure this substantive knowledge into their long-term memories. Children are also taught to make links across different mathematical components to build this substantive knowledge in their long-term memory.

Disciplinary knowledge needed in order to think, process and understand the subject.

Progression Framework

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number: Place Value	Count objects, actions and sounds Subitise Link the number symbol (numeral) with its cardinal number value Count beyond ten Compare numbers Understand the 'one more than/one less than' relationship between consecutive numbers Explore the composition of numbers to 10	Identify and represent numbers using objects, pictorial Representations (including number lines) Count to 100 Know and use number bonds and related subtraction facts to 20 Read and write numbers to 100. Count from zero in 2s, 5s and 10s Find 1 more and 1 less than a given number	Represent numbers in different ways including number lines, number rods and place value counters Know the place value of digits in 2-digit numbers Know number bonds to 100 Read, write and order numbers up to 100 including using <, >, = Count from zero in steps of 2, 3 and 5 Count from any 1 digit or 2-digit number in steps of 10 Find 10 more or less than a given number	Know the place value of numbers to 1000 Know number bonds to 100/1000 Read, write and order numbers up to 1000 Count from zero in multiples of 4, 8, 50 and 100 Find 10 and 100 more or less than a given number	Read, write and order numbers up to 10,000 Count forwards and backwards in steps of 6, 7, 9, 25 and 100 Count backward through zero into negative Numbers Find 1000 more or less than a given number Round any whole number to the nearest 10, 100 and 1000 Find factors of 2-digit numbers	Read, write and order numbers up to 1,000,000 (one million) Count forwards and backwards in steps of 10, 100, 1000, 10,000, 100,000 from any given number Round any whole number to the nearest 10, 100, 1000, 10,000, 100,000 Know and use the vocabulary of primes, prime factors and composite numbers	Read, write and order numbers up to 10,000,000 (ten million) Use negative numbers on context and calculate intervals across zero Round numbers to the required degree of accuracy

Number: Addition & Subtraction	Automatically recall number bonds for numbers 0-5 and some to 10	Read, Write and interpret the symbols +, -, = Add and subtract 1 and 2-digit numbers to 20, including zero Solve addition and Subtraction problems using concrete objects, pictorial representations, number lines Solve missing number problems such as: 7 = _ - 5	Show that addition of numbers can be done in any order but subtraction cannot Recall and use addition facts to 20 (FLUENTLY) Derive and use related facts to 100 Solve addition and subtraction problems using concrete objects (including number rods) pictorial representations (bar model, place value counters, number lines) and coins	Add 3-digit numbers using column addition Subtract 3-digit numbers using column subtraction	Add 4-digit numbers with column addition Subtract 4-digit numbers with column subtraction	Use mental methods of addition and subtraction with large numbers	Use formal methods of written calculation to solve multi step problems
Number: Multiplication & Division	Continue, cop and create repeating patterns	Understand X and ÷ problems represented as objects, pictures and arrays	Recall and use X and ÷ facts for 2-, 5- and 10-times tables Solve problems involving X and ÷ using materials, arrays, numbers rods and mental method Show that X can be done in any order but ÷ cannot.	Develop times Tables knowledge to include 3-, 4- and 8-times tables Use knowledge of 2, 3, 4, 5, 8 10 times tables to calculate 2-digit X 1-digit numbers Use knowledge of 2, 3, 4, 5, 8 10 times tables to calculate 2-digit ÷ 1-digit numbers with whole number answers	Know by heart times tables and division facts for up to 12 X 12 Use short multiplication for 3-digit X 1-digit numbers Understand (but not name) the commutative and distributive laws	Use short multiplication to solve 4-digit X 1- digit numbers Use short division method for dividing 3- and 4 -digit numbers by 1-digit numbers Multiply and divide mentally by 10, 100 and 1000 Identify multiples and factors including all factor pairs	Use long multiplication to solve 3-digit numbers X 2-digit numbers Use short division with answers to 2 decimal places Use long division to divide 4-digit numbers by 2 -digit numbers

Number: Fractions		Recognise, find and name ½ as two equals parts of an object, shape or quantity Recognise, find and name ¼ as two equal parts of an object, shape or quantity	Recognise, find and name the fractions ¼, 1/3, 2/4 and ¾ Find simple fractions of amounts. E.g., half of 6. Count up and down in ½, ¼ from zero to 10.	Recognise, find and use fractions of a set of objects (unit and non-unit fractions) with small denominations	Count up and down in hundredths Know the effects of dividing 1- and 2-digit numbers by 10 and 100 Recognise and write the decimal equivalents to fractions of tenths and hundredths Recognise and show, using diagrams, families of equivalent fractions	Know the fraction, decimal and percentage equivalents of ½, ¼, ¾, 0.2, 0.4,0.8 Compare and order fractions whose denominators are multiples of the same number Read, write and order numbers with up to 3 decimal places Recognise 1/10, 1/100, 1/1000 and relate them to decimal notation Recognise mixed numbers and improper fractions and convert between them Recognise the % symbol and relate to parts per hundred and fractions with denominators of 100	Recall and use equivalence between fractions, decimals and % Simplify fractions Compare fractions using common denominators Add and subtract fractions with different denominators Multiply fractions Divide fractions by single numbers Calculate percentages of amounts Solve problems of unequal sharing

Measurements	Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can Compare length, weight and capacity	Name the days of the week and months of the year Tell the time on an analogue clock to the hour and half past the hour. Measure and begin to record length and height, mass and weight, capacity and volume. Compare lengths, weights and volumes Recognise and know the value of different coins and notes	Know the number of minutes in an hour and the number of hours in a day Tell and write the time from analogue clocks to the nearest 5 minutes, including quarter to and past Find different combinations of coins that make the same amount of money.	Know the number of seconds in one minute, the days in each month and the days in a year including a leap year Tell and write the time from analogue and 12, 24-hour digital clocks, using Roman numerals Measure and compare lengths in m, cm and mm Find and measure perimeters of simple 2D Mass in kg and g Capacity in l and ml. Add and subtract amounts of money in £ and pence to give change	Read, write and convert between analogue and digital times (12- and 24-hour clock). Find and measure perimeters of rectilinear figures Convert between km and n, kg and g	Measure and calculate perimeters of rectilinear Use the properties of rectangles to find missing lengths and angles Draw and measure given angle in degrees Know that angles at a point add to 360◦ and at a line180◦	Use formulae to calculate areas of rectangles and triangles Calculate and compare volume of cubes and cuboids Convert between units of measure up to 3 decimal places Find unknown angles in polygons and at intersections

Geometry: Properties of Shape	Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round' Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc Combine shapes to make new ones – an arch, a bigger triangle, etc	Recognise and name common 2D and 3D shapes	Compare and sort 2D and 3D shapes and everyday objects. In 3D shapes, identify edges, faces and vertices	Recognise acute and obtuse angles	Identify lines of symmetry in 2D shapes in any orientation Compare and classify shapes including quadrilaterals and triangles	Distinguish between regular and irregular shapes Identify 3D shapes from 2D representations	Draw 2-D shapes using given dimensions and angles Compare and classify geometric shapes based on their properties and sizes Illustrate and name parts of circle, including radius, diameter and circumference and know that the diameter is twice the radius.
Geometry: Position & Direction	Understand position through words alone – for example, "The bag is under the table," – with no pointing Describe a familiar route Discuss routes and locations, using words like 'in front of' and 'behind'	Describe position, direction and movement, including whole, half, quarter and three-quarter turns	Order and arrange combinations of mathematical objects in patterns and sequences. Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)	Identify right angles, know that 2 make a half turn, 3 a ¾ turn and 4 a whole turn Identify horizontal, vertical, parallel and perpendicular	Plot points in the first quadrant of a coordinate grid Describe translations with a given unit using left / right / up or down	Describe and represent the result of a reflection or a translation	Describe positions on the full co-ordinate grid Translate shapes in the co-ordinate grid and reflect in the axis

Statistics			Ask questions about totalling and comparing categorical data Interpret and construct simple tables, tally charts and pictogram	Interpret data using bar charts, pictogram and tables	Solve comparison, sum and difference problems from bar charts and tables	Read information from tables and time tables	Construct and interpret pie charts Calculate mean as an average
Algebra	Year 6 only: Use simple formulae Generate and describe linear number sequences Express missing number problems algebraically Calculate and interpret the mean						
Ratio & Proportion	Year 6 only: Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplications 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						

Progression of Vocabulary

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number	zero number one, two, three … to twenty and beyond teens numbers, eleven, twelve … twenty none how many …? count, count (up) to, count on (from, to), count back (from, to) count in ones is the same as more, less odd, even few, pattern, pair	numeral twenty-one, twenty-two … one hundred forwards backwards equal to equivalent to most, least, many multiple of count in twos, fives, tens	count in threes tally sequence continue predict rule > greater than < less than	count in fours, eights, fifties and so on to hundreds factor of relationship roman numerals one hundred, two hundred … one thousand	ten thousand, hundred thousand, million count in sixes, sevens, nines, twenty-fives next, consecutive integer, positive, negative above/below zero, minus negative numbers	factor pair ≥ greater than or equal to ≤ less than or equal to formula divisibility square number prime number ascending/descending order	factorise prime factor digit total
Number: Place Value	the same number as, as many as more, larger, bigger, smaller, less small, least most, biggest, largest, one more, one less, compare, order, size first, second, third… twentieth, last, before, after next	equal to half-way between above, below digit between fewest, fewer, greatest, greater Ones, tens	one- or two--digit number place, place value stands for, represents exchange twenty first, twenty second… ten more ten less	hundreds three-digit number one hundred more one hundred less	one thousand more one thousand less		

Estimating & Rounding	Guess how many …? Nearly, close to about the same as just over, just under too many, too few enough, not enough	roughly estimate	Exact, exactly	approximate approximately round, nearest, round to the nearest ten, hundred round up, round down	round to the nearest thousand	round to the nearest ten thousand	
Number: Addition & Subtraction	add, more, and make, sum, total, altogether double one more, two more … how many more to make …? take away how many are left/left over? how many have gone? one less, two less,	addition near double half, halve subtract equals is the same as number bonds/pairs missing number how many more is … than …? how many fewer is … than …? difference between	number facts tens boundary ten more ten less	one hundred more one hundred less hundreds boundary, regrouping	inverse	one's boundary, tenths boundary	
Number: Multiplication & Division	doubling halving number patterns	array row, column grouping sharing share equally equal groups of unequal	groups of times once, twice, three times … ten times repeated addition divide, divided by, divided into left, left over one each, two each, three each … ten each group in pairs, threes … tens multiplication table multiplication fact, division fact	factor product remainder	inverse square, squared cube, cubed		

Fractions, Decimals & Percentages		fraction equal part equal grouping equal sharing one of two equal parts one of four equal parts half, quarter	equivalent fraction mixed number two halves two quarters, three quarters one third, two thirds one of three equal parts	sixths, sevenths, eighths, tenths …	hundredths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion	proper/improper fraction equivalent, reduced to, cancel thousandths in every, for every percentage, per cent, %	Ratio

Measurements	Measure, size, compare guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as just over, just under length, height, long, short, tall wide, narrow thick, thin longer, shorter, taller, higher … and so on longest, shortest, tallest, highest … and so on weigh, weighs, balances heavy, light heaviest, lightest scales equal to weighs the same full empty half full holds container time days of the week, Monday, Tuesday … day, week birthday, holiday morning, afternoon, evening, night bedtime, dinner time, playtime today, yesterday, tomorrow before, after next,	measurement roughly centimetre ruler metre stick metre width, depth high, low far, near, close kilogram heavier than, lighter than Litre, half litre capacity volume more than less than quarter full money coin penny, pence, pound price, cost buy, sell spend, spent pay months of the year seasons: S, S, A, W weekend, month, year earlier, later first midnight date once, twice how long ago? how long will it be to …? how long will it take to …? how often? always, never, often, half past clock face hour hand, minute hand hours, minutes	Measuring scale further, furthest tape measure half-kilogram gram temperature degree change, costs more, cheaper, costs less, costs the same as how much …? how many …? Total, Bought, sold fortnight 5, 10, 15… minutes past quarter past, quarter to digital/analogue clock/watch, timer seconds	Division approximately millimetre, kilometre, mile distance apart … between … to … from perimeter centigrade century calendar earliest, latest a.m., p.m. roman numerals 12-hour clock time, 24- hour clock time	unit, standard unit metric unit breadth edge, area, covers square centimetre (cm2) mass: big, bigger, small, smaller weight: heavy/light, heavier/lighter, heaviest/lightest measuring cylinder leap year millennium noon date of birth timetable, arrive, depart	Imperial unit square metre (m2), square millimetre (mm2) pint, gallon discount, currency	yard, foot, feet, inch, inches circumference tonne, pound, ounce centilitre cubic centimetres(cm3), cubic metres (m3), cubic millimetres (mm3), cubic kilometres (km3) Greenwich Mean Time, British Summer Time, International Date Line

	last now, soon, early, late quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest new, newer, newest						

Geometry: Property of Shapes	shape, pattern flat round sort, make, build, draw size, bigger, larger, smaller symmetrical pattern, repeating pattern match corner, side rectangle (including square) circle triangle face, edge, corner cube/cuboid pyramid sphere cone	Symmetry symmetrical pattern curved, straight point, pointed Cylinder	surface line symmetry rectangular triangular circular pentagon hexagon octagon triangular prism vertex, vertices	Perimeter pentagonal hexagonal octagonal quadrilateral right-angled parallel, perpendicular prism hemisphere compass point north, south, east, west, N, S, E, W horizontal, vertical, diagonal angle … is a greater/smaller angle than right angle acute angle obtuse angle	line, construct, sketch centre angle, right-angled base, square-based reflect, reflection regular, irregular 2-D, two-dimensional oblong rectilinear equilateral triangle, isosceles triangle, scalene triangle heptagon parallelogram, rhombus, trapezium polygon 3-D, three-dimensional Spherical, cylindrical tetrahedron, polyhedron	circumference, concentric, arc net, open, closed, intersecting, intersection plane kite dodecahedron net, open, closed	radius, diameter congruent, axis of symmetry, reflective symmetry x-axis, y-axis, quadrant octahedron

Geometry: Position & Direction	Position, over, under above, below top, bottom, in outside, inside, around in front, behind front, back middle, edge, corner next to, up, down forwards, backwards, sideways, across next to, close, near, far along, through to, from, towards, away from, movement slide, roll, turn stretch, bend whole turn, half turn	underneath centre journey quarter turn, three quarter turn side, besides, opposite apart, between direction left, right	route higher, lower clockwise, anticlockwise straight line	compass point north, south, east, west, N, S, E, W horizontal, vertical, diagonal angle … is a greater/smaller angle than right angle acute angle obtuse angle	north-east, north-west, south-east, south-west, NE, NW, SE, SW translate, translation rotate, rotation degree, reflection ruler, set square angle measurer, compass	reflex angle	coordinate protractor
Statistics	count, sort group, set list	vote table	tally graph, block graph, pictogram, represent label, title most popular, most common least popular	chart, bar chart, frequency table Carroll diagram, Venn diagram axis, axes diagram	survey, questionnaire, data	pie chart mean (mode, median, range as estimates for this) statistics, distribution	database bar line chart line graph maximum/minimum value outcome
Algebra							formula, formulae equation unknown variable

General	pattern puzzle what could we try next? how did you work it out? Recognise, describe, draw, compare, sort	problem, problem solving mental, mentally explain your thinking	show how you… explain your method describe the pattern describe the rule investigate mental calculation written calculation	greatest value, least value statement Explain your reasoning	justify make a statement		

Long Term Planning

Reception

	Block	Unit Title
Autumn	Understanding Number	Counting and naming numbers
		Ordering numbers: sequencing
	Shapes & Patterns (A)	Exploring and playing with symmetry
		Exploring repetitive patterns
	How Many?	Count how many: match one-to-one
		One more/less up to 12
	Time	Introducing time
	Number & Sets	Partitioning to create number bonds
		Recording number bonds
	Comparison & Measurements	Comparing length
		Comparing measures directly
	Shapes & Patterns (B)	Counting in 2s: odd/even numbers
		Exploring 2-D shapes
Spring	Understanding number	Counting & estimating
		Order and compare numbers
	Position & Time	Where is it?
		Time
	Addition & Subtraction (A)	Partition to create number bonds
		Say the number 1 more/less
	Comparison & Measures	Comparing weights (mass)
		Measuring weights (mass)
	Addition & Subtractions (B)	Count on to add
		Count back to subtract
	Shape	Explore and play with 3-D shapes
Summer	Understanding number	Teen numbers: 10 and some more
		Exploring 100
	Comparing & Measuring	Measuring outside
	Addition & Subtraction	Equivalence
		Bonds to 10
	Shapes & Sorting	Talking about shapes
		Sorting
	Clever Counting	Counting on; 1 more/less
		Clever counting
	Time	Telling the time
	Patterns	Doubling and halving
		Fractions
	Number Games	Number games

* Units are not necessarily taught in this order throughout the term due to mixed-aged classes

Key Stage 1 (Year 1 & 2)

Autumn		Spring		Summer	
Block	Unit Title	Block	Unit Title	Block	Unit Title
Place Value	Counting and estimation	Place Value	2-digit place value	Place Value & Fractions	Place Value
	Teens and pace value in 2-digit numbers		Numbers and quantities		Fractions
	Numbers on a line; compare/order	Addition & Subtraction (A)	Mental addition and subtraction	Addition & Subtraction	Addition
	Count to 100, 1 more/less; ordinals		Adding and subtracting money		Subtractions
Addition & Subtraction (A)	Partition numbers; learn number bond	Money & Time	Add/sub pairs of 2-digit numbers	Multiplication & Division	Multiplication & Division
	Add by counting on in 1s or 10s		Tell the time; units of time	Position & Time	Position & Time
	Counting back; understand + and –	Measures & Data	Compare and measure mass	Revision Menu A	Place Value
Measures	Comparing and measuring lengths		Measure and represent capacity		Fractions
Addition & Subtraction (B)	Reinforce and consolidate number bonds	Addition & Subtraction (B)	Addition		Addition and Subtraction
	Use number facts to add and subtract		Subtraction	Revision Menu A	Multiplication and Division
	Adding and subtracting tens and ones	Multiplication	Clever counting; multiplication		Measures
Time	Tell time to half and quarter hours		Relating multiplication and division		Shape
	Understand units of time			Place Value & Addition	Place Value in 2-digit number
Addition & Subtraction (C)	Using different strategies for addition	Fractions	Fractions		Add/subtract 1-digit numbers using unit patterns
	Coin recognition: find amounts & change	Shape	2-D shapes		Bonds to 10; complements to multiples of 10
Fractions & Multiplication	Understanding halves and quarters		Symmetry		Adding three numbers – number games
	Doubling & halving; odd & even numbers		3-D shapes	Subtraction & using Money	Bridging 10 and counting up subtraction
	Counting in steps of 2 and 5				Finding totals
					Finding change
				Multiplication and Division	Doubling and halving
					Multiplication and division
				Shape, Time & Data	Exploring properties of 3-D shape
					Exploring properties of 2-D shape; turns
					Telling the time
					Units of time, block graphs and pictograms

* Units are not necessarily taught in this order throughout the term due to mixed-aged classes

Lower Key Stage 2 (Year 3 & 4)

Autumn	Block	Unit Title
	Place Value & Money	Numbers on a line; compare and order
		PV in 3-/4-digit nums; amounts of money
		+/- 1, 10, 100 and 1000, and multiples
	Addition & Subtraction (A)	Strategies for adding and subtracting
		Number bonds to 100
		Subtract by counting up: frog
	Multiplication & Division (A)	Rehearsing & understanding times tables
		Partitioning in multiplication and division
	Fractions	Doubling, halving and the concept of a half
		Conceptualising fractions
		Finding fractions of amounts
	Multiplication & Division (B)	Strategies for division
	Addition and Subtraction (B)	+/- near-/multiples of 10, 100, 1000
		Partitioning and column addition
		Formal addition & subtraction algorithms
	Shape	Symmetry and 2D shapes
		Understanding 3D shapes
		Co-ordinates in the first quadrant

Spring	Block	Unit Title
	Place Value	Negative numbers
		Fractions
		Equivalent fractions; +/– fractions
	Addition & Subtraction (A)	Mental addition and subtraction
		3-digit +/– 1-digit numbers
	Measures	Length and data
		Mass and data
	Decimals and Money	x and ÷ with money and 1-place decimals
		Decimals and money on a line
	Multiplication	Times tables
		Partitioning in multiplication
	Addition and Subtraction (B)	Column addition
		Frog and decomposition
	Division	Division
	Time	Telling the time
		Time and data

Summer	Block	Unit Title
	Number & Place Value	Number and Place Value
		Sequences and Roman Numerals
	Addition & Subtraction (A)	Written algorithms
		Finding a difference – whole numbers
	Addition & Subtraction (B)	Money: finding change and differences
		Written addition and subtraction
	Multiplication & Division (A)	Times tables, factors and multiples
		Division
	Multiplication & Division (B)	Using partitioning to double, halve and multiply
		Scaling problems and mental strategies
	Fractions	Fractions
	Decimals	Decimals and Money
		Decimals and Measures
	Measures & Data	Area and Perimeter
		Time
		Line Graphs and Bar Charts
	Shape	Exploring shape properties
		Co-ordinates and 3-D shapes

* Units are not necessarily taught in this order throughout the term due to mixed-aged classes

Upper Key Stage 2 (Years 5 & 6)

Autumn	Block	Unit Title
	Place Value	PV and +/- in 5-digit and 6-digit numbers
		Numbers on a line; round to powers of 10
	Addition & Subtraction (A)	Column addition with whole numbers
		Column addition: decimals and money
		Whole number column subtraction & frog
	Decimals	PV in 2- and 3-place decimal numbers
		Count/add/subtract 0.1, 0.01, 0.001
	Multiplication & Division (A)	Properties of numbers, including primes
		Short multiplication: whole numbers, money
		Mental strategies in division
	Addition &Subtraction (B)	Money: counting up, change, differences
		Subtract numbers with 1 or 2 decimal
		Strategies for +/-; word problems
	Multiplication & Division (B)	Mult/div strategies; rate/scaling problems
		Grid, short, long multiplication problems
	Fractions	Order fractions; fractions of amounts
		Decimal/fraction equivalents
		Add/subtract fractions, using equivalence
	Shape	Quadrilaterals, other polygons and circles
		Find missing angles and draw 2-D shapes
		Sort 3-D shapes; nets and 3-D shapes
		Coordinates: polygons & transformations

Spring	Block	Unit Title
	Place Value	Place Value
		Negative numbers
	Calculations	Use of brackets in calculation
		Addition and subtraction
	Decimals & Fractions	Frog for decimals
		Exploring fractions
		Multiply and divide fractions
	Time &Data	Time and timetables
		Line graphs and pie charts
	Multiplication	Multiples, factors and mental strategies
		Multiplication
	Measures	Units of measurement
		Area, perimeter, scaled shapes
		Finding volumes
	Multiplication & Division	Division
		4-Digit multiplication and division
	Algebra & Ratio	Algebra
		Ratio

Summer	Block	Unit Title
	Revision Menu A	Numbers and place value
		Addition and subtraction
		Decimals, multiplication and division
	Revision Menu B	Fractions, ratio and percentages
		Charts, graphs and algebra
		Area, perimeter and angles
	Top-up Revision Menu	Factors, multiples, primes and squares
		Multiplication and division
		Equivalence in fractions, decimals and percentages
		Data: Pie charts and mean
		Charts, graphs and algebra
		Area, perimeter and angles
	Decimals, Addition & Subtraction	Exploring decimals
		Smashing subtraction
		Accomplished addition
	Number properties & Multiplication	Number properties
		Exploring multiplication
	Division, Fractions & Percentages	Division done
		Calculating with fractions
		Mastering percentages
	Measures, Shape, Data	It's time!
		Line graphs
		Understanding angles

* Units are not necessarily taught in this order throughout the term due to mixed-aged classes