YEAR 1 - YEAR 6 CURRICULUM OVERVIEW

MATHEMATICS

		Autumn			Spring			Summer		
		Fluency	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**
YEAR 1	**Place Value**	Read and write numbers to 20. Identify and represent numbers using objects and pictorial representations.	Recognises and can explain that the ones digit changes in two-digit numbers.	Identify missing numbers.	Within 50, identify and represent numbers using objects and pictorial representations. Count across 50, forwards and backwards.	Count forwards and backwards from any given numbers.		Within 100, partition two-digit numbers.	Explain thinking verbally, in pictures or using equipment	Use knowledge of number bonds to 100 to solve problems.
	Addition & Subtraction	Add and subtract one-digit numbers.	Prove their understanding using pictorial or concrete resources.	Apply addition and subtraction knowledge to solve problems.	Recall number bonds to and within 10. Add and subtract two-digit numbers to 20.	Use number bonds to and within 10 to calculate bonds within 20.				
	Multiplication & Division				Count in multiples of 2, 5 and 10.	Demonstrate the commutativity of multiplication / division facts for 2 and 10.	Solve problems involving multiplication facts for 2 and 10.			
	Fractions							Identify ½ or ¼ of a number or shape.	Know that all parts must be equal parts of a whole.	Recognise fractions in everyday scenarios.
	Position & Direction							Describe position, direction and movement.	Use positional vocabulary to explain the location of objects.	Answer questions using directional vocabulary.
	Properties of Shapes				Recognise and name 2D and 3D shapes.	Identify similarities and differences in shapes.	Sort shapes based on their properties.			
	Length & Height				Describe lengths and heights.	Compare lengths and heights.	Solve practical problems involving lengths and heights.			
	Weight & Volume				Describe mass/weight.	Compare mass/weight.	Solve practical problems involving mass/weight.			
	Money				Recognise and know the value of different notes and coins.	Compare coins.	Solve addition and subtraction problems using notes and coins.			
	Time							Read the clock to half an hour.	Use language relating to time and dates.	Sequence events in chronological order.

YEAR 2		Autumn			Spring			Summer		
		Fluency	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**
	Place Value	Read and write numbers to 100.	Compare and order numbers up to 100.	Count in steps of 2, 3 and 5, forwards and backwards.						
	Addition & Subtraction	Add and subtract two-digit numbers.	Use the inverse operation to check calculations.	Solve missing number problems.						
	Multiplication & Division				Recall multiplication and division facts for 2, 5 and 10.	Use mathematical statements including x, ÷ and =.	Solve problems using multiplication and division facts for 2, 5 and 10.			
	Fractions				Identify ¼, 1/3, ½, 2/4, ¾ of a number or shape	Recognise equivalent fractions.	Find fractions of an amounts and compare.			
	Position & Direction							Describe movement in a straight line and distinguish between rotation as a turn.	Describe turns in terms of right angles for quarter, half and three-quarter turns.	Give/follow directions.
	Properties of Shapes				Identify the number of sides, vertices, edges, faces and lines of symmetry.	Compare and sort 2D and 3D shapes based on number of sides, vertices, edges, faces and lines of symmetry.	Identify a given shape from its properties.			
	Length & Height							Use m and cm to measure length/height.	Choose and use appropriate units to estimate and measure length/height.	
	Weight & Volume								Compare and order mass and volume using <, > and =.	
	Money				Use different coins to make the same amount.	Select coins under criteria.	Solve everyday problems involving money.			
	Time							Tell the time to five minutes including quarter past/to.	Know the number of minutes in an hour and number of hours in a day.	Compare and sequence intervals of time.
	Statistics							Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	Sort categories by quantity.	Ask and answer simple questions based on charts.

YEAR 3		Autumn			Spring			Summer		
		Fluency	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**
	Place Value	Recognise the place value of any digit in a three-digit number. Read and write numbers up to 1,000.	Compare and order numbers up to 1,000.							
	Addition & Subtraction	Add and subtract numbers mentally. Add numbers up to three-digits using columnar addition. Subtract numbers with up to three-digits using columnar subtraction.	Use calculations to check answers.	Apply written methods to solve addition and subtraction problems.						
	Multiplication & Division	Recall and use multiplication and division facts for 3-, 4- and 8-times tables.		Solve problems using 3-, 4- and 8- times tables.	Begin to use written methods to multiply two-digit numbers by one-digit (involving known times tables).	Explain the process of grid multiplication and the significance of each number.	Solve problems multiplying two-digits by one-digit.			
	Fractions							Count up and down in tenths. Recognise equivalent fractions with small denominators. Add fractions with the same denominator within one whole.	Compare and order unit fractions with the same denominator. Show equivalent fractions using diagrams.	Find unit fractions of given amounts
	Position & Direction							Describe movement and turns.	Describe the shortest route.	Give directions to move objects on grids.
	Properties of Shapes							Recognise angles as a property of a shape or description of a turn. Identify right angles and how many make full/half/quarter turn. Identify angles greater than and less than a right angle. Identify horizontal and vertical lines and pairs of parallel and perpendicular lines. Recognise 3D shapes in different orientations.	Use vocabulary to describe properties of shapes. Compare angles.	Label angles and lines in different shapes. Describe 3D shapes.

	Length & Height				Measure the perimeter of simple 2D shapes. Measure length.	Draw the same type of shape with different perimeters.	Add and subtract length. Use given measures to calculate perimeter.			
	Weight & Volume							Use g and kg to measure mass. Use ml and l to measure capacity/volume.	Explain which unit of measure is most appropriate.	Measure, compare, add and subtract mass and capacity/volume.
	Money							Add and subtract amounts of money to give change.	Identify whether to use £ or p.	Add and subtract money in practical contexts.
	Time							Estimate and read the time to the nearest minute. Know the number of seconds in a minute, days in each month, year and leap year.	Compare the duration of events.	Tell the time from analogue clocks (including Roman numerals), 12-hour and 24-hour clocks.
	Statistics				Use information presented in scaled bar charts and pictograms and tables.	Represent presented data in different ways.	Solve one and two step problems based on charts and tables.			

YEAR 4		Autumn			Spring			Summer		
		Fluency	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**
	Place Value	Round numbers to the nearest 10/100/1,000. Count backwards through zero to include negative numbers. Read Roman numerals to 100.	Compare and order numbers beyond 1,000. Know that, over time, the numeral system changed to include the concept of zero and place value.	Apply knowledge of rounding to solve problems. Add and subtract using negative numbers.						
	Addition & Subtraction	Add and subtract numbers with up to four digits using columnar methods.	Decide where appropriate to use mental or written methods.	Solve problems involving increasingly larger numbers.						
	Multiplication & Division	Recall multiplication and division facts for times tables up to 12x12.	Identify factor pairs.	Solve problems involving known times tables.	Multiply two- and three-digit numbers by a one-digit number using a formal written layout. Divide two- and three-digit numbers by a one-digit number using a formal written layout.	Use calculations to support using the inverse operation to check calculations.	Apply written methods to solve problems.			
	Fractions				Count up and down in hundredths. Recognise and show families of common equivalent fractions. Add and subtract fractions with the same denominator. Recognise and write decimal equivalents of any number of tenths and hundredths.	Explain 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. Solve simple measure and money problems involving fractions and decimals to two decimal places.			
	Position & Direction							Describe positions on a 2D grid in the first quadrant. Describe movements between positions as translations. Plot specific points.	Explain the significance of each digit in coordinates and the importance of their order.	Use plotted points and draw sides to complete polygons.
	Properties of Shapes							Identify acute and obtuse angles. Know the properties of polygons (including quadrilaterals and triangles). Identify symmetry in 2D shapes.	Order and compare angles up to two right angles by size. Compare and classify geometric shapes.	Complete simple symmetric figures using a line of symmetry.

	Length & Height				Measure and calculate the perimeter of a rectilinear figure. Find the area of shapes by counting squares.	Explain the difference between perimeter and area.	Identify the measurement of missing sides using the perimeter.			
	Weight & Volume									
	Money				Convert pounds and pence.	Give an answer using the fewest notes/coins.	Estimate and calculate different amounts of money in pounds and pence.			
	Time				Read, write and convert time between analogue and digital 12- and 24-hour clocks.	Identify errors when converting between analogue and digital times, explaining corrections.	Solve problems converting from hours to minutes; minutes to seconds; years to months; weeks to days.			
	Statistics							Interpret and present data using appropriate graphical methods.	Describe presented data using mathematical vocabulary (sum and difference)	Solve comparison sum and difference problems using presented data.

YEAR 5		Autumn			Spring			Summer		
		Fluency	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**
	Place Value	Read and write numbers up to at least 1,000,000. Count forwards and backwards in steps of powers of 10 from any given number up to 1,000,000. Read Roman numerals to 1,000 and recognise years written in Roman numerals.	Order, compare and determine the value of each digit of numbers to at least 1,000,000. Identify mistakes made involving place value of increasingly larger numbers.	Identify missing digits using information presented.						
	Addition & Subtraction	Add and subtract whole numbers with more than four digits using formal written methods.	Solve calculations with missing numbers.	Identify required information and perform appropriate calculation to solve problems.						
	Multiplication & Division	Multiply and divide whole and decimal numbers by 10, 100 and 1,000. Identify multiples and factors, including common factors of two numbers. Identify prime numbers. Recognise and use square and cube numbers.	Identify different ways to solve multiplication problems (eg. 69x41 could be 69x40 + 69)	Solve problems requiring multiple steps.	Multiply numbers up to four-digits by a one- or two-digit number using a short or long multiplication. Divide numbers up to four-digits by one-digit using short division.	Interpret remainders appropriately for the context of the question.	Apply written methods to solve problems.			
	Fractions	Identify, name and write equivalent fractions of a given fraction. Recognise mixed number and improper fractions. Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	Compare and order fractions whose denominators are all multiples of the same number.	Convert mixed number and improper fractions.	Multiply proper fractions and mixed number fractions by whole numbers. Know percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of 10 or 25. Read and write decimals as fractions. Round decimals with two decimal places to the nearest whole.	Understand that per cent relates to 'number of parts of 100'.	Solve problems converting between fractions, decimals and percentages.			
	Position & Direction							Identify, describe and represent the position of a shape following a reflection or translation.	Use appropriate language to describe the movement of a shape on a grid.	Plot and translate/reflect shapes on grids.

	Properties of Shapes							Identify angles at a point and whole turn. Identify angles on a straight line and half turn. Draw and measure angles in degrees. Identify regular and irregular polygons.	Use the properties of rectangles to deduce related facts and find missing lengths and angles.	Calculate missing angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
	Length & Height				Measure and calculate the perimeter of rectilinear shapes in cm and m. Calculate the area of rectangles using standard units.	Estimate the area of irregular shapes.	Find missing measurements and use these to calculate perimeter and area.			
	Weight & Volume							Convert between different units of metric measures. Understand approximate equivalents between metric and common imperial units.	Estimate volume and capacity.	Solve problems requiring a conversion of measurements and give the answer in the required measure.
	Money							Use written methods to add, subtract, multiply and divide sums of money.		
	Time							Convert units of time. Use timetables.	Choose the best way to record answers (hours/minutes/hours and minutes)	Calculate and compare durations. Complete timetables.
	Statistics				Complete, read and interpret information in tables and timetables.	Choose the appropriate intervals when drawing axis to present information in graphs.	Solve comparison, sum and difference problems using information presented in a line graph.			

		Autumn			Spring			Summer		
		Fluency	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**	**Fluency**	**Reasoning**	**Problem Solving**
YEAR 6	**Place Value**	Read, write and order numbers up to 10,000,000. Round any number to a required degree of accuracy. Use negative numbers in context.	Compare numbers up to 10,000,000, explain the value of each digit.	Solve problems involving estimating using rounding to support.						
	Addition & Subtraction	Carry out written methods using increasingly larger numbers and decimal numbers.	Choose the most appropriate operations and methods to use, explaining why.	Solve muti-step problems in context.						
	Multiplication & Division	Multiply multi-digit numbers up to four-digits by a two-digit number using long multiplication. Divide numbers up to four-digits by a two-digit number using long division. Identify common factors, common multiples and prime numbers. Multiply numbers with two decimal places by whole numbers. Use written division in cases where the answer has two decimal places.	Identify missing digits in calculations. Interpret remainders as whole numbers, fractions or by rounding as appropriate for the context.	Use the appropriate method to solve problems.						
	Fractions	Use common factors to simplify fractions. Add and subtract fractions with different denominators.	Record answers in their simplest form.	Use equivalences between simple fractions, decimals and percentages in different contexts.	Multiply simple pairs of proper fractions. Divide proper fractions by whole numbers. Associate a fraction with division and calculate decimal fraction equivalents.	Record answers in their simplest form.	Solve problems involving find the whole number.			
	Position & Direction							Describe positions on the full coordinate grid.	Identify and correct mistakes, explaining misconceptions.	Draw and translate shapes on the coordinate plane and reflect them in the axes.

	Properties of Shapes							Calculate the area of parallelograms and triangles. Recognise that shapes with the same areas can have different perimeters and vice versa. Calculate the volume of shapes. Draw 2D shapes accurately. Illustrate and name parts of circles.	Estimate and compare the volume of cuboids. Compare and classify geometric shapes based on their properties.	Describe and complete nets of 3D shapes. Use knowledge of circumference, diameter and radius to perform calculations.
	Length & Height							Use read and convert between standard units of measure. Convert between metres and miles.	Choose the most appropriate unit of measure to record an answer.	Solve problems requiring a conversion of measurements and give the answer in the required measure.
	Weight & Volume							Use read and convert between standard units of measure.	Choose the most appropriate unit of measure to record an answer.	Solve problems requiring a conversion of measurements and give the answer in the required measure.
	Money									Solve problems in context involving money.
	Time							Convert units of time from a smaller unit to a larger unit and vice versa.	Choose the most appropriate unit of measure to record an answer.	Solve problems requiring a conversion of measurements and give the answer in the required measure.
	Statistics							Interpret and construct pie charts and line graphs. Calculate the mean.	Choose the most appropriate way to present data.	Use pie charts to solve problems.
	Algebra				Generate and describe linear sequences. Use simple formula.	Enumerate possibilities of combinations of two numbers.	Find pairs of numbers which satisfy an equation with two unknowns.			

	Ratio & Proportion				Identify that a ratio is made up of parts.	Explain whether ratios have been applied correctly.	Solve problems involving the relative sizes of two quantities where missing values can be found by using multiplication and division facts. Solve problems involving similar shapes where scale factor is known or can be found. Solve problems involving the calculation of percentages and use for comparison.			