Maths Curriculum Overview

EYFS

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core	Place Value	Place Value	Place Value	Place Value	Place Value	Place Value
Theme/s	Addition and Subtraction Measurement – Time	Addition and Subtraction Measurement – Time	Addition and Subtraction Geometry	Addition and Subtraction Geometry	Addition and Subtraction Multiplication and Division Measure	Addition and Subtraction Multiplication and Division Measure
Why?	For children to match, sort and compare amounts and to be able to recognise and represent 1 to 5. Children will be able to find one more or one less than a given amount. Children will begin to use mathematical vocabulary to explain their understanding. For children to begin to make sense of the world around them and begin to see and use maths in their everyday lives. Children will begin to use mathematical vocabulary to explain their understanding.		For children to recognise and represent numbers 0 and 4-10. Children will begin to use mathematical vocabulary to explain their understanding. Children begin to combine two groups and make bonds to 10. For children to continue to make sense of the world around them and continue to see and use maths in their everyday lives. Children will explore 3D shape, capacity, length, weight and time in real life.		For children to recognise and represent numbers to 20 and beyond. Children will continue to use mathematical vocabulary to explain their understanding. For children to continue to make sense of the world around them and continue to see and use maths in their everyday lives. Children will explore the relationships between number and shapes and begin to use positional language to describe where objects are in relation to other objects.	
Skills	• To match identical objects. • To sort objects into groups. • To compare sets of items. • To compare the size of objects. • Identify representations of 1,2 and 3. • Begin to subitise collections of up to 3 objects. • Match the number names to numerals and quantities. • Count up to 3 objects in different arrangements using one to one correspondence. • To understand the cardinality of numbers up to 3. • To begin mark making to represent 1, 2 and 3. • To understand as we count numbers get bigger and as we count back they get smaller. • To understand that numbers are made up of smaller numbers. • To count on and back to 4 and 5. • Subitise to 4 and 5. • Match the number names to numerals and quantities to 4. • To continue to learn the cardinality of number. • To recognise one more and less up to 5.		• Understand 0. • To compare quantities. • Understand all numbers are made up of smaller numbers. • Represent numbers up to 10 in different ways. • Begin to subitise numbers up to 10. • Know that a pair is two. • Combine 2 groups. • Develop 1:1 correspondence up to 10. • Explore number bonds to 10. • To compare quantities, capacity and weights. • Estimate weight. • To understand full empty and nearly full, half full and nearly empty. • Describe length and height • Order and sequence important times • Recognise regular events that happen on the same day. • Explore and manipulate 3D shapes. • Explore more complex patterns (ABB AAB AABB etc)		• Identify numbers to 20 and beyond. • To count on beyond 10. • To add more to a group. • To subtract from a group. • To build doubles using real objects. • To recognise and make equal groups. • To share equally. • To understand that some quantities will share equally and some will not. • To engage in problem solving. • To develop critical thinking skills. • Explore and investigate relationships between numbers and shapes. • To complete jigsaw and shape puzzles. • Match arrangements of shapes. • Begin to use positional language. • Know that shapes can be combined and separated to make new shapes. • To use positional language to describe where real objects are in relation to other objects. • To understand that maps are plans to represent places.	

Year 1

Maths	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Theme/s	Place Value within 10 Addition and Subtraction within 10	Addition and Subtraction within 10 Geometry- Shape	Place Value within 20 Addition and Subtraction within 20	Place Value within 50 Measurement – Length and Height Measurement - Mass and Volume	Multiplication and Division Fractions Position and Direction	Place Value – Within 100 Money Time
Why?	Place value is taught first at the beginning of the year because it is the foundation of mathematics. Children need to understand the value of the digits and what a number is made up of before moving on to addition and subtraction. Children use numbers within 10 before moving onto numbers within 20 so that they are secure with smaller numbers and are able to make links.	Shape is taught after addition and subtraction as a break from number. Then children move on to looking at place value in numbers within 20 and begin to make links.	After securing their understanding of numbers within 20, children move on to adding and subtracting within 20. Children then move onto learning about numbers within 50.	Children learn about measurement in the Spring term to consolidate their understanding of place value and addition and subtraction.	When children are secure in their understanding of place value and addition and subtraction, they move onto learning about multiplication and division. When multiplication and division has been taught, children move onto position and direction.	When children have consolidated their understanding of numbers within 50, children then move on to numbers within 100. Time is the last 'topic' taught in Year one, however, this is also referred to throughout the year.
Skills	**Place Value within 10.** •I can count to ten forwards and backwards beginning with 0 or 1 or from any given number. •I can count, read and write numbers to 10 in numerals and words. •When given a number, I can identify one more and one less. •I can 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. **Addition and Subtraction within 10.** •I can represent and use number bonds and related subtraction facts within ten •I can read, write and interpret mathematical statements involving addition, subtraction and equals signs. •I can add and subtract one-digit numbers to 10 including 0. •I can solve one step problems that involve addition and subtraction using concrete objects and pictorial representations and missing number problems.	**Addition and Subtraction cont.** •I can represent and use number bonds and related subtraction facts within ten •I can read, write and interpret mathematical statements involving addition, subtraction and equals signs. •I can add and subtract one-digit numbers to 10 including 0. •I can solve one step problems that involve addition and subtraction using concrete objects and pictorial representations and missing number problems. **Geometry - Shape** •I can recognise and name common 2-D shapes including, for example, rectangles (including squares) circles and triangles. •I can recognise and name common 3D shapes including cuboids, cubes, pyramids and spheres.	**Place Value within 20** •I can count to twenty forwards and backwards beginning at 0 or 1, from any given number. •I can count, read and write numbers to 20 in numerals and words. •When given a number, I can identify one more or one less. •I can 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. **Addition and Subtraction within 20** • I can represent and use number bonds and related subtraction facts within twenty • I can read, write and interpret mathematical statements involving addition, subtraction and equals signs. • I can add and subtract one-digit numbers to 20 including 0. • I can solve one step problems that involve addition and subtraction using concrete objects and pictorial representations and missing number problems.	**Place Value within 50** • I can count to 50 forwards and backwards, beginning with 0 or 1, or from any number. • I can count, read and write numbers to 50 in numerals. • When given a number, I can identify one more or one less. • I can 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. • I can count in multiples of twos, fives and tens. **Length and Height** •I can measure and begin to record lengths and heights. •I can compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half). **Mass and Volume** •I can measure and begin to record mass/weight, capacity and volume. •I can compare, describe and solve practical problems for 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].	**Multiplication and Division** •I can count in multiples of twos, fives and tens. •I can 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. **Fractions** •I can recognise, find and name a half as one of two equal parts of an object, shape or quantity. •I can recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. •I can compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half) •I can compare, describe and solve practical problems for: 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]. Position and Direction •I can describe position, direction and movement, including whole, half, quarter and three quarter turns.	**Place Value within 100** •I can count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. •I can count, read and write numbers to 100 in numerals. •When given a number, I can identify one more and one less. •I can identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than, most, least. **Measurement - Money** •I can recognise and know the value of different denominations of coins and notes. **Time** •I can sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. •I can recognise and use language relating to dates, including days of the week, weeks, months and years. •I can tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. •I can compare, describe and solve practical problems for

						time [for example, quicker, slower, earlier, later]. •I can measure and begin to record time (hours, minutes, seconds.

Year 2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Theme/s	Place Value Addition and Subtraction	Addition and Subtraction Geometry - Shape	Money Multiplication and Division	Length and height Mass, capacity and temperature	Fractions Time	Statistics Position and Direction
Why?	Place value is taught first at the beginning of the year because it is the foundation of mathematics. Children need to understand the value of the digits and what a number is made up of before moving on to addition and subtraction. Children are building on the knowledge of numbers to 100 from year 1 and consolidating their understanding.	Children learn how to add 2-digit numbers within 100. Children learn a range of mental and written strategies and begin to work efficiently. Shape is taught to help children to have an understanding of the world around them. They begin to see and use shape in their everyday lives.	Money is taught to help consolidate their understanding of place value and addition and subtraction. Children then move onto multiplication and division when they are secure in their understanding of addition and subtraction.	Measurement is taught to help consolidate addition and subtraction and place value. It also helps children use maths in their everyday lives.	When multiplication and division is secure, this knowledge is used in the topics of fractions and time.	Statistics and position and direction is taught to help children understand the world around them.
Skills	**Place Value** •I can read and write numbers to at least 100 in numerals and words. •I can recognise the place value of each digit in a two digit number (tens, ones) . I can identify, represent and estimate numbers using different representations including the number line. •I can compare and order numbers from 0 up to 100; use < > and = signs. •I can use place value and number facts to solve problems •I can count in steps of 2, 3 and 5 from 0 and in tens from any numbers forwards and backwards. **Addition and Subtraction** •I can recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 •I can add and subtract numbers using concrete objects, pictorial representations and mentally including a two-digit number and ones; a two digit numbers and tens; two 2-digit numbers; adding 3 one-digit numbers. •I can show that the addition of numbers can be done in any order (commutative) and subtraction of one number from another cannot.	**Addition and Subtraction** •I can solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of written methods. •I can recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. **Shape** •I can identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. •I can identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. •I can identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid.] •I can compare and sort common 2-D and 3-D shapes and everyday objects.	**Money** •I can recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. •I can find different combinations of coins that equal the same amounts of money. • I can solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. **Multiplication and Division** •I can recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers. •I can calculate mathematical statements for multiplication within the multiplication times tables and write them using the multiplication, and equals sign. •I can solve problems involving multiplication using materials, arrays, repeated addition, mental methods and multiplication facts including problems in context. •I can show that the multiplication of two numbers can be done in any order (commutative).	**Measurement: Length and Height** •I can 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. •I can compare and order lengths, mass, volume/capacity and record the results using >, < and = **Mass Capacity and Temperature** •I can 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. •I can compare and order lengths, mass, volume/capacity and record the results using >, < and =.	**Fractions** •I can recognise, find, name and write fractions 1/2 , 1/3 , 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity. •I can write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and ½. **Time** •I can 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. •I know the number of minutes in an hour and the number of hours in a day. •I can compare and sequence intervals of time.	**Statistics** •I can interpret and construct simple pictograms, tally charts, block diagrams and simple tables. •I can ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. •I can ask and answer questions about totalling and comparing categorical data. **Position and Direction** •I can 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). •I can order and arrange combinations of mathematical objects in patterns and sequences.

Year 3

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Theme/s	Place Value Addition and Subtraction	Addition and Subtraction Multiplication and Division	Multiplication and Division Measurement: Length and Perimeter	Fractions Measurement: Capacity and Mass	Money Time	Shape Statistics
Why?	Place value is taught first at the beginning of the year because it is the foundation of mathematics. Children need to understand the value of the digits and what a number is made up of before moving on to addition and subtraction. Children are building on the knowledge of numbers to 100 from year 2 and building on this.	Addition and Subtraction is taught after the children's understanding of Place Value is secure. Multiplication and division builds on knowledge of addition and subtraction and Place Value.	Multiplication and division builds on knowledge of addition and subtraction and Place Value. Length and perimeter are taught now to help consolidate previous topics.	When teaching fractions, knowledge of multiplication and division is important.	Money is taught to consolidate addition and subtraction skills. Time is taught after multiplication and fractions as these skills are used in this topic.	Skills are built on from Year 2 in both topics.
Skills	**Place Value** •I can identify represent and estimate numbers using different representations •I can find 10 or 100 more or less than a given number •I can recognise the place value of each digit in a three-digit number (hundreds tens and ones) •I can compare and order number up to 1000 •I can read and write numbers up to 1000 in numerals and in words. •I can solve number problems and practical problems involving these ideas. •I can count from 0 in multiples of 4, 8, 50 and 100 Addition and Subtraction •I can add and subtract mentally, including three-digit numbers and ones, a three-digit number and tens and a three-digit number and hundreds. •I can add and subtract numbers with up to three digits using formal written methods of columnar addition and subtraction I can estimate the answer to a calculation and use inverse operations to check answers. •I can solve problems including missing number problems using number facts, place value and more complex addition and subtraction.	**Addition and Subtraction** •I can add and subtract mentally, including three-digit numbers and ones, a three-digit number and tens and a three-digit number and hundreds. •I can add and subtract numbers with up to three digits using formal written methods of columnar addition and subtraction •I can estimate the answer to a calculation and use inverse operations to check answers. I can solve problems including missing number problems using number facts, place value and more complex addition and subtraction. Multiplication and Division •I can count from 0 in multiples of 3, 4, 8, 50 and 100 •I can recall and use multiplication and division facts for the 3, 4, and 8 times tables. •I can write and calculate mathematical statements for multiplication and division using the multiplication tables I know, 2, 3, 4, 5, 8, 10 •I can 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 objectives.	**Multiplication and Division** •I can count from 0 in multiples of 3, 4, 8, 50 and 100 •I can recall and use multiplication and division facts for the 3, 4, and 8 times tables. •I can write and calculate mathematical statements for multiplication and division using the multiplication tables I know, 2, 3, 4, 5, 8, 10 including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. •I can 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 objectives. **Length and Perimeter** •I can measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). •I can measure the perimeter of simple 2- D shapes.	**Fractions**: •I can recognise and show, using diagrams, equivalent fractions with small denominators. •I can compare and order unit fractions, and fractions with the same denominators. •I can add and subtract fractions with the same denominator within one whole •I can solve problems that involve all of the above. **Measurement: Capacity and Mass** •I can measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	**Money** •I can add and subtract amounts of money to give change, using both £ and p in practical contexts **Time** •I can tell and write the time from an analogue clock, including using Roman numerals from I to XII and 12-hour and 24-hour clocks. •I can estimate and read time with increasing accuracy to the nearest minute. •I can record and compare time in terms of seconds, minutes and hours. •I can use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. •I know the number of seconds in a minute and the number of days in each month, year and leap year. •I can compare durations of events [for example to calculate the time taken by particular events or tasks].	**Properties of shape** •I can recognise angles as a property of shape or a description of a turn. •I can 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. •I can identify horizontal and vertical lines and pairs of perpendicular and parallel lines. •I can draw 2-D shapes and make 3-D shapes using modelling materials. •I can recognise 3-D shapes in different orientations and describe them. **Statistics** •I can interpret and present data using bar charts, pictograms and tables. •I can 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.

Year 4

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Theme/s	Place Value Addition and Subtraction	Area Multiplication and Division	Multiplication and Division Measurement – Length and perimeter	Fractions Decimals	Decimals Money Time	Statistics Properties of Shape Position and direction
Why?	Place value is taught first at the beginning of the year because it is the foundation of mathematics. Children need to understand the value of the digits and what a number is made up of before moving on to addition and subtraction. Children are building on the knowledge of numbers to 1000 from year 3 and building on this.	Area and Multiplication and Division are taught in the same half term as these topics relate to each other.	Multiplication and division builds on skills learnt in previous year. A secure understanding of addition and subtraction is essential.	Fractions are taught when children have a secure understanding of multiplication and division as these skills are necessary to understand fractions.	Decimals are taught when children have a secure understanding of fractions.	Statistics is taught after the four operations to consolidate these skills. Properties of shape are taught now as a continuation from Year 3 to build on skills.
Skills	**Place Value** •I can count in multiples of 6, 7, 9, 25 and 1000 •I can find 1000 more or less than a given number •I can recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones). •I can order and compare numbers beyond 1000 •I can identify, represent and estimate numbers using different representations •I can round any number to the nearest 10, 100 and 1000 •I can solve number and practical problems that involve all of the above with increasingly large positive numbers • I can count backwards through zero to include negative numbers. **Addition and Subtraction** • Add and subtract numbers with up to 4 digits using the formal written method 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.	**Area** •I can find the area of rectilinear shapes by counting squares. **Multiplication and Division** •I can recall and use multiplication and division facts for multiplication tables up to 12 x 12. •I can count in multiples of 6, 7, 9. •I can use place value, known and derived facts to multiply and divide mentally including multiplying by 0 and 1 dividing by 1 and multiplying together three numbers. •I can solve problems involving multiplying and adding including the distributive law to multiply two-digit numbers by one-digit numbers. •I can solve integer scaling problems and harder correspondence problems such as n objects are connected to m objects	**Multiplication and Division** •I can recall and use multiplication and division facts for multiplication tables up to 12 × 12. •I can 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. •I can recognise and use factor pairs and commutativity in mental calculations. •I can multiply two-digit and three-digit numbers by a one digit number using formal written layout. •I can 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. **Length and Perimeter** •I can measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m. •I can convert between different units of measure (For example Km to m).	**Fractions** •I can recognise and show, using diagrams, families of common equivalent fractions. •I can count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. •I can 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. •I can add and subtract fractions with the same denominator. **Decimals** •I can recognise and write decimal equivalents of any number of tenths or hundredths. •I can find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths •I can solve simple measure problems involving fractions and decimals to two decimal places. •I can convert between different units of measure [for example, kilometre to metre].	**Decimals** •I can recognise and write decimal equivalents of any number of tenths or hundredths. •I can find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths •I can solve simple measure problems involving fractions and decimals to two decimal places. •I can convert between different units of measure [for example, kilometre to metre]. **Money** •I can estimate, compare and calculate different measures, including money in pounds and pence. •I can solve simple measure and money problems involving fractions and decimals to two decimal places. **Time** •I can read, write and convert time between analogue and digital 12- and 24-hour clocks. •I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	**Statistics** •I can interpret and present discrete data using appropriate graphical methods including bar charts and line graphs. •I can solve comparison sums and difference problems using information presented in pictograms, bar tables and other charts. **Properties of Shape** •I can identify acute and obtuse angles and compare and order angles up to two right angles by size. •I can compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. •I can identify lines of symmetry in 2-D shapes presented in different orientations. •I can complete a simple symmetric figure with respect to a specific line of symmetry. **Position and Direction** •I can describe positions on a 2-D grid as coordinates in the first quadrant. •I can plot specified points and draw sides to complete a given polygon. •I can describe movements between positions as translations of a given unit to the left/ right and up/ down.

Year 5

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Theme/s	Place Value Addition and Subtraction	Multiplication & Division Fractions	Multiplication and division Fractions	Percentages and Decimals. Perimeter and area Statistics	Shape Position and direction Decimals	Negative Numbers Converting Units Volume
Why?	Place value is taught first at the beginning of the year because it is the foundation of mathematics. Children need to understand the value of the digits and what a number is made up of before moving on to addition and subtraction. Children are building on the knowledge of numbers to 10,000 from year 4 and building on this.	Multiplication and division builds on skills learnt in previous years. A secure understanding of addition and subtractions is essential. Fractions are taught once the children have a secure understanding of multiplication and division so that they can use this knowledge and build on it.	Multiplication and division builds on skills learnt in previous years. A secure understanding of addition and subtractions is essential. Fractions are taught once the children have a secure understanding of multiplication and division so that they can use this knowledge and build on it.	Perimeter and area is taught in between the multiplication and division blocks as this is a good opportunity to consolidate their understating before moving on to bigger numbers. Percentages and decimals are then taught after fractions so that children can begin to make links between these representations.	Decimals are then taught after fractions so that children can begin to make links between these representations.	At the end of the school year children focus on the above topics to complete the curriculum.

Skills	Place Value •I can read, write, order and compare numbers at least to 1,000,000 and determine the value of each digit. •I can count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000 •I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero •I can round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 •I can solve number problems and practical problems that involve all of the above •I can read Roman numerals to 1 000 (M) and recognise years written in Roman numerals. **Addition and Subtraction** •I can add and subtract numbers mentally with increasingly large numbers •I can add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). •I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • I can solve addition and subtraction multi- step problems in contexts, deciding which operations and methods to use and why.	**Multiplication and Division** •I can multiply and divide numbers mentally drawing upon known facts •I can identify multiples and factors including finding all factor pairs of a number, and common factors to two numbers. •I can recognise and use square numbers and cube numbers and the notation for square and cubed. •I can solve problems using multiplication and division including using their knowledge of factors and multiples, squares and cubes. •I know and use the vocabulary of prime numbers, prime factors, and composite (non-prime) numbers. •I can establish whether a number up to 100 is prime and recall prime numbers up to 19. **Fractions** •I can compare and order fractions whose denominators are multiples of the same number. •I can identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths. •I can 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] •I can add and subtract fractions with the same denominator and denominators that are multiples of the same number.	**Multiplication and Division** •I can multiply up to a 4-digit number by a 2-digit number. I can divide a 4-digit number by a 1-digit number. •I can multiply or divide whole numbers by 10, 100 or 1000. **Fractions** •I can add and subtract fractions with the same denominator and denominators that are multiples of the same number. •I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. •I can read and write decimal numbers as fractions [for example 0.71 = 71 100] •I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	**Length and Perimeter** •I can measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m. •I can convert between different units of measure (For example Km to m). **Decimals and Percentages** •I can read, write, order and compare numbers with up to three decimal places. •I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. •I can round decimals with two decimal places to the nearest whole number and to one decimal place. •I can solve problems involving numbers up to three decimal places. •I can recognise the percent symbol (%) and understand that percent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal. •I can solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25. **Statistics** •I can interpret and present discrete data using appropriate graphical methods including bar charts and line graphs •I can solve comparison sum and difference problems using information presented in pictograms, bar tables and other charts.	**Properties of Shape** •I can identify 3D shapes, including cubes and other cuboids, from 2D representations. •I can use the properties of rectangles to deduce related facts and find missing lengths and angles. •I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles. •I know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. •I can draw given angles, and measure them in degrees. •I can identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) other multiples of 90° **Position and Direction** •I can 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. **Decimals** •I can recognise and write decimal equivalents of any number of tenths or hundredths. •I can find the effect of dividing a one- or two-digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths •I can solve simple measure problems involving fractions and decimals to two decimal places. • I can convert between different units of measure [for example, kilometre to metre].	**Converting Units** •I can convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml] •I can understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. •I can solve problems involving converting between units of time. **Volume** •I can estimate volume [for example using 1cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]. •I can use all four operations to solve problems involving measure.

Year 6

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Place Value Theme/s	Four Operations	Fractions Converting units	Ratio Algebra Decimals	Fractions, decimals and percentages Area, perimeter and volume Statistics	Shape Position and direction	Themed projects, consolidation and problem solving
Why?	Place value is taught first at the beginning of the year because it is the foundation of mathematics. Children need to understand the value of the digits and what a number is made up of before moving on to addition and subtraction. Children are building on the knowledge of numbers to 100,000 from year 5 and building on this.	Fractions are taught once the children have a secure understanding of multiplication and division so that they can use this knowledge and build on it.	Decimals are then taught after fractions so that children can begin to make links between these representations. Children move onto Algebra when they have a secure understanding of the four operations and fractions.	Fractions, decimals and percentages are taught as a block so that children can see the relationship between each representation.	Shape and position and direction is taught alongside SATS revision and practice as this should be consolidation from previous years.	Children spend time on projects and open-ended investigations to help consolidate their understanding of the KS2 maths curriculum.

Skills	Place Value •I can read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. •I can round any whole number to a required degree of accuracy. •I can use negative numbers in context and calculate intervals across zero. •I can solve number and practical problems that involve all of the above. **Four Operations** •I can solve addition and subtraction multi-step problems in contexts deciding which operations and methods to use and why. •I can multiply mulit-digit numbers up to 4 digits by a 2-digit number using the formal written method of long multiplication. •I can divide numbers up to 4-digits by a 2-digit number using the formal written method of short division, and interpret remainders as a whole number remainders, fractions or by rounding as appropriate for the context. •I can divide numbers up to 4-digits by a 2-digit number using the formal written method of short division interpreting remainders according to the context. •I can perform mental calculations including mixed operations and large numbers. •I can identify common factors, common multiples and prime numbers. •I can use their knowledge of the order of operations to carry out calculations involving the four operations • I can solve problems involving addition and subtraction multiplication and division. •I can use estimation to check answers to calculations and determine in the context of a problem an appropriate degree of accuracy.	**Fractions** •I can use common factors to simplify fractions, use common multiples to express fractions in the same denomination. •I can compare and order fractions including fractions > 1. •I can generate and describe linear number sequences (with fractions) • I can add and subtract fractions with different denominations and mixed numbers using the concept of equivalent fractions. •I can multiply the simplest pairs of proper fractions, writing the answer in its simplest form. •I can divide proper fractions by whole numbers. •I can associate a fraction with division and calculate decimal fraction equivalents or a simple fraction. •I can recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. **Converting Units** •I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. •I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal points. •I can convert between miles and kilometres.	**Ratio** •I can solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. •I can solve problems involving similar shapes where the scale factor is known or can be found. •I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. **Algebra** •I can use simple formulae. •I can generate and describe linear number sequences. •I can express missing number problems algebraically. •I can find pairs of numbers that satisfy an equation with two unknowns. •I can enumerate possibilities of combinations of two variables. **Decimals** •I can identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. •I can multiply 1-digit numbers with up to 2 decimal places by whole numbers. Use written division methods in cases where the answer has up to 2 decimal places. •I can solve problems which require answers to be rounded to specified degrees of accuracy.	**Percentages** •I can solve problems involving the calculation of percentages [for example, of measures such as 15% of 360] and the use of percentages for comparison. •I can recall and use equivalences between simple fractions, decimals and percentages including in different contexts. **Perimeter, Area and Volume** •I can recognise that shapes with the same areas can have different perimeters and vice versa. •I can recognise when it is possible to use formulae for area and volume of shapes. •I can calculate the area of parallelograms and triangles. •I can calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3, m3 and extending to other units (mm3, km3). **Statistics** •I can illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. •I can interpret and construct pie charts and line graphs and use these to solve problems. •I can calculate the mean as an average.	**Properties of Shape** •I can recognise that shapes with the same areas can have different perimeters and vice versa. •I can recognise when it is possible to use formulae for area and volume of shapes. •I can calculate the area of parallelograms and triangles. •I can calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3, m3 and extending to other units (mm3, km3). **Position and Direction** •I can describe the positions on the full coordinate grid (all four quadrants) •I can draw and translate simple shapes on the coordinate plane and reflect them in the axes.	Investigations