EYFS

Autumn		Spring		Summer	
AUTUMN 1	**AUTUMN 2**	**SPRING 1**	**SPRING 2**	**SUMMER 1**	**SUMMER 2**
EYFS- Nursery					
Calendar activity is completed every morning with children as a chance to consolidate understanding of sequence of time					
Introduction of number rhymes and stories using Number blocks as a foundation for understanding the composition of number Chanting numbers Introduction to daily calendar Identifying quantities on fingers Use of language such as 'more/less' Introduction to shape through the block area	Recognition of numbers 1-5 then 10 (variety of representations/written forms/number blocks) Through key skills groups introduce and develop 1:1 counting skills (using number blocks) Introduction of correct names of shapes (explicitly taught during carpet sessions) in block and construction areas 2 whole class carpet sessions a week dedicated to number	Christmas Measuring/ Shapes	Making comparisons with numbers Exploring composition of numbers to 5 (through use of fingers and number blocks able to make up numbers in different ways e.g. 4 is 2 and 2 or 3 and 1) Naming 2D shapes	Focus on language of measure – linked to theme of growing plants Continuation of composition of numbers and naming 2D shapes Counting games in small maths groups	Recognising and describing repeated patterns Begin to subitise with numbers to 3 and then 5 (focus groups and teacher modelling) 1:1 correspondence when counting (focus groups and modelling embedded throughout daily routine e.g. counting children, fruit, toys etc) Continued exploration of composition of numbers with objects Begin to introduce cardinality of counting (e.g. when counting, the final number said tells us how many in a group)	Begin to subitise with numbers to 3 and then 5 (with dice, real life objects e.g. fruit) 1:1 correspondence when counting (focus groups and modelling embedded throughout daily routine e.g. counting children, fruit, toys etc) Cardinality of counting (e.g. when counting, the final number said tells us how many in a group) Recapping any gaps in learning

EYFS- Reception

Calendar activity is completed every morning with children as a chance to consolidate understanding of sequence of time

Reintroduction to the calendar; daily practice of counting and number rhymes Baseline Recap of coverage in Nursery (including subitising to 5), identifying gaps in learning around number recognition, 1:1 correspondence and cardinality of counting (e.g. when counting, the final number said tells us how many in a group) Comparing quantities using mathematical language (more, less, is the same as) Reciting numbers to 10 both forwards and backwards (counting rhymes, songs, number lines, 'spot the mistake') Naming and describing some 2D shapes (e.g. using language of sides, corners, straight)	Composition of numbers to 5 ('story of each number' e.g. how many ways can you make/see 2: 4-2, 1+1, a pair of socks) including practising recall of number bonds to 5 (including subtraction facts Reciting numbers to 10 both forwards and backwards (counting rhymes, songs, number lines, 'spot the mistake') Matching numerals with quantities to 5 and then 10 (teacher modelled and focus group) Introduction of even and odd numbers (practical, use of objects) Introduction of 1 more/1 less to 5 (using counting and real-life objects, number lines)	Christmas Measurement (length, height and mass: measuring /comparing presents and following recipes e.g. making biscuits)/ Repeated patterns (recognising and describing)	Recap from autumn: subitising to 5, counting forwards and backwards to 10, 1 more/1 less to 5, odd and even numbers Composition of numbers to 10 ('story of each number' e.g. how many ways can you make/see 2: 4-2, 1+1, a pair of socks) Counting to 10 and beyond (counting rhymes, songs, number lines, 'spot the mistake') Comparing quantities using mathematical language (more, less, is the same as) Continued focus on 1 more/1 less, extending to 10 when children are ready	Recap from spring 1: 1 more/1 less, counting beyond 10 and composition of numbers to 10 Introduction of doubling and halving to 5 (teacher modelled then in focus groups using objects) Continued focus on 1 more/1 less to 10, including introduction to mathematical symbols (e.g. add +, takeaway – and 'is the same as' =) Measures (tall/long/short) in science linked to growing	Recap from spring: counting, 1 more/1 less, doubling and halving Measures in science linked to growing (tracking height of plants, comparing size of babies/children) Subitise larger numbers through partitioning (e.g. 6 is made up of 3 and 3) Number bonds to 5 including subtraction facts Doubling and halving to 10 Introduction to adding as counting 2 groups together and taking away as removing objects from a larger group and linking to prior knowledge of mathematical symbols	Consolidation of mathematical concepts taught across year Counting and exploring numbers to 20 Doubling and halving facts Exploration of odd and even numbers, with particular reference to the patterns in the numbers and sharing Practice of instant recall of number bonds to 10, including subtraction facts Recap 2D shapes and introduce 3D shapes using some informal language (e.g. corners, flat, round)

Curriculum overview is flexible and loose to allow for children's interests to take the lead.

Maths is threaded through different areas of the continuous provision to encourage children to explore maths during their child initiated learning.

The calendar is completed every day to provide children with opportunities to chant numbers and identify quantities on their fingers, also exploring numbers above 10

Nursery cover 2 explicit Maths teaching a week through whole class carpet sessions and smaller maths groups introduced in Spring term.

Reception alternate between a writing and maths focus each week, maths is continuously available in the environment and spontaneous interactions with number and space are covered through quality interactions.

Number block flashcards and resources such as unifix cubes are used to support the understanding of the composition of number, other resources such as numicon are also available.

Number time carpet sessions are introduced in Spring 2 in Reception as an extra 10 minute focus on number and composition

Mathematical language is used throughout the year and environment by all adults

Year 1	Autumn		Spring		Summer	
	Number: Place Value • Continue to count from any number to 100. • Count and read numbers to 100 in numerals. Understands that the position a digit is placed in a number determines its value. • Order numbers correctly to 30. • Identify numbers using objects and use the language of: more than, less than (fewer), most, least. • Read and write numerals and number words from 1-10.	**Number: Addition and Subtraction** • Understand the vocabulary related to addition (+), subtraction (–) and equals (=) signs. • Represent and use number bonds and related subtraction facts within 10. • Add two 1-digit numbers. • Solve one-step problems that involve addition and subtraction, using concrete objects.	**Number: Place Value** • Continue counting forwards and backwards to 100 from any given number. • Write numbers to 100 in numerals. • Say a number that is 1 more or 1 less to 50. • 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 numerals and number words from 11- 20.	**Number: Addition and Subtraction** • Use the correct vocabulary when reading and interpreting a simple number sentence. • Represent and use number bonds and related subtraction facts within 15. • Add a one-digit number to a two-digit number within 20. • Subtract a one-digit number from a 2- digit number within 20. • Solve one-step problems that involve addition and subtraction, using pictorial representations. • Begin to work out the value of a missing number.	**Number: Place Value** • Count to and across 100, forwards and backwards from any given number. • Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s • Given a number, identifies 1 more and 1 less. • Identify and represent numbers using objects and pictorial representations.	**Number: Fractions** • Recognise, find and name a half of an object, shape or quantity. • Recognise, find and name a quarter as 1 of 4 of an object, shape or quantity. **Geometry** • Recognise and name common 2-D shapes. • Recognise and name common 3-D shapes. • Describe position, direction and movement, including whole, half, quarter and three-quarter turns.
	Geometry: Properties of Shape • Explore the characteristics of everyday 2D objects and shapes and use mathematical language to describe them. • Explore the characteristics of everyday 3D objects and shaped and use mathematical language to describe them. • Recognise, create and describe patterns.	**Measurement** • Use everyday language to talk about size, weight, capacity, position, distance, time and money. • Compare quantities and objects and solve problems. • Use everyday language to talk about size, weight, capacity, position, distance, time	**Number: Multiplication and Division** • Know doubles to double 10. Recognise a pattern counting in 10s. • Group objects in 2s, 10s and 5s for counting. **Number: Fractions** • Recognise, find and name a half as 1 of 2	**Measurement** • Begin to use the correct mathematical language for measurement when comparing quantities and objects. • Use and compare different types of quantities and measures using non-standard units. • Say the days of the week in order. Begin to name	**Measurement** • Measure and begin to record, compare, describe and solve practical problems for: lengths and heights, mass/weight, capacity and volume, time.	**Number: Four Operations** • Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. • Represent and use number bonds and related subtraction facts within 20.

	<u>Number: Multiplication and Division</u> • Recognise a pattern counting in 2s. • Know doubles to 5.	and money. • Know that each day has a different name Know what month their birthday is in. • Begin to recognise and use the vocabulary of time.	equal parts of an object, shape or quantity. • Understands that halving involves partitioning an object, shape or quantity into two equal parts. • Recognise, find and name a quarter as 1 of 4.	some of the months. • Begin to understand that an hour is longer than a minute. • Know a clock has an hour and a minute hand.	• Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. • Recognise and know the value of different denominations of coins and notes.	• Add and subtract one-digit and two-digit numbers to 20, including 0. • Solve one-step problems that involve addition and subtraction. • Solve one-step problems involving multiplication and division.

Year 2

Autumn

Number: Place Value

- Counts backwards in steps of 2s, 5s and 10.
- Understands that a two-digit number is made up of tens and ones.
- Estimates number of objects to 20.
- Compares pairs of numbers up to 100 using the phrase 'greater or less than'.
- Reads numbers to 100.
- Makes use of place value apparatus to partition numbers when solving problems.

Geometry

- Identifies and describes the properties of 2-D shapes, including the number of sides and corners when looking at the shape.
- Identifies and describes the properties of 3-D shapes, including the number of edges, vertices and faces when holding the shape.
- Continues a mathematical repeating pattern or sequence.
- Uses mathematical vocabulary to describe position, direction and movement, including movement in a straight line.

Number: Addition and Subtraction

- Demonstrates an understanding of problems involving addition and subtraction using concrete apparatus or pictorial representations.
- Recalls and uses addition and subtraction facts to 20.
- Adds and subtracts numbers using concrete objects, pictorial representations and mentally.
- Understands that in addition the answer is increased and in subtraction the answer is decreased. Can demonstrate this on a number line.
- Recognise and use the inverse relationship between addition and subtraction and use this to check the answer to calculations.

Number: Multiplication and Division

- Understands that when multiplying they can use repeated addition on a number line and arrays.
- Can use repeated subtraction when dividing and sharing/grouping

Spring

Number: Place Value

- Counts forwards in steps of 3 from 0.
- Counts in steps of 2, 5 and 10 from 0 forwards and backwards.
- Partitions a 2-digit number in different ways (groups of tens and ones) using dienes apparatus, other place value equipment and pictorial representations.
- Identifies, represents and estimates numbers up to 50 using different representations, including the number line.
- Compares and orders numbers up to 100.
- Reads and writes numbers to 20 in words.
- Partitions numbers into tens and ones prior to solving problems when appropriate.

Measurement

- Writes and tells the time to the hour, half past and quarter past and quarter to and draw the hands on a clock face to show these times. Position the hour hand appropriately.
- Chooses and uses appropriate standard units to estimate and measure length/height in any

Number: Addition and Subtraction

- Recalls and uses addition and subtraction facts to 20.
- Adds and subtracts numbers using concrete objects, pictorial representations and mentally, including: a two-digit number and 1s a two-digit number and 10s.
- Understands that numbers can be rearranged in an addition number sentence to make a calculation easier to solve.
- Recognise and use the inverse relationship between addition and subtraction and use this to check the answer to calculations.

Number: Multiplication and Division

- Knows and uses the 2,5 and 10 times tables in order.
- Explores the nature of odd and even numbers in terms of fair and unfair shares.
- Creates an array (no larger than 40 dots) to support multiplication and division and generates all the calculations they

Summer

Number: Place Value (inc money)

- Counts in steps of 2, 3, 5 and 10 from 0, forwards and backwards.
- Recognises the place value of each digit in a two-digit number (tens, ones).
- Identifies, represents and estimates numbers using different representations, including the number line for numbers up to 100.
- Partition any two-digit number into different combinations of tens and ones (e.g. 63 = 60 + 3 or 50 + 13 or 40 + 23 etc).
- Compares and orders numbers from 0 up to 100; use <, > and = signs.
- Reads and writes numbers to at least 100 in numerals and words.
- Uses place value and number facts to solve problems.

Number: Fractions

- Recognises, finds, names and writes fractions ⅓, ¼, $\frac{2}{4}$ and ¾ of a length, shape, set of objects or quantity.
- Writes simple fractions (e.g. ½ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and ½).

Number: Four Operations

- Solves problems with addition and subtraction applying increasing knowledge of mental and written methods.
- Recalls and uses addition and subtraction facts to 20 fluently, and derives and uses related facts up to 100.
- Adds and subtracts numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 1s a two-digit number and 10s, 2 two-digit numbers adding 3 one-digit numbers.
- Recognises and uses the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
- Recalls and uses multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
- Calculates mathematical statements for multiplication and division within the multiplication tables and writes them using the multiplication (×), division (÷) and equals (=) signs.

	Measurement • Demonstrates understanding about how a clock face works and the speed of the hour and minute hands. Explain the position of the hour hands in relation to the numbers when it is half past. • Read the time to o'clock and half past. Begin to tell the time to quarter past and to. • Recognises and knows the value of different denominations of coins and notes. • Finds different combinations of coins that equal the same amounts of money. • Uses appropriate standard units to estimate and measure length/height and distance,(m/cm) (within 100) using rulers tape measures and metre sticks.	using concrete apparatus. • Recognises and uses the multiplication (×), division (÷) and equals (=) signs. • Generates arrays (no larger than 40 dots) to solve multiplication problems. • Makes use of apparatus and generates illustrations to support calculation with problems involving multiplication and division. **Number: Fractions** • Finds and names ½, ¼ and 2/4 of a length, shape, set of objects or quantity. • Finds and writes simple fractions of numbers (E.g. ½ of 4=2, ¼ of 8=2).	direction (m/cm); mass (kg/g); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, measuring vessels with increasing accuracy **Number: Fractions** • Understands how to draw or find ¾ of a length, shape, set of objects. • Explores and explain why 2/4 is equivalent to ½ with the use of objects, shapes and numbers. **Statistics** • Creates simple pictograms where one illustration represents one answer/ response. • Interprets the information provided on simple pictograms. • Understand how the information on a pictogram or tally chart can be used to generate a block diagram. • Is able to ask questions about simple pictograms, tally charts, and tables.	display. • Solves one-step problems involving multiplication and division using objects, pictorial representations and arrays. **Geometry** • Identifies the unknown 2D shape being described based on its properties in terms of sides and corners • Find lines of symmetry on common 2D shapes identify when shapes do not have lines of symmetry. • Identifies the unknown 3D shape being described based on its properties in terms of edges, faces and vertices. • Identifies the 2D shapes that create the faces of the 3D shape. • Uses the terms clockwise and anti-clockwise and left and right with a degree of accuracy.	**Measurement** • Chooses and uses appropriate standard units to estimate and measure: length/height (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml). • Can compare and order lengths, mass, volume/capacity and record the results using >, < and =. • Recognises and uses symbols for pounds (£) and pence (p); combine amounts to make a particular value. • Finds different combinations of coins that equal the same amounts of money • Solves simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. • Writes and tells 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.	• Solves problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. • Shows that addition or multiplication of 2 numbers can be done in any order (commutative) and know that subtraction or division of 1 number from another cannot. **Statistics** • Recognises simple pictograms, tally charts, block diagrams and tables (one image/tally may represent more than one response). • Is able to ask questions about simple pictograms, tally charts, block diagrams and tables.

Year 3	Autumn		Spring		Summer	
	Number: Place Value • Counts in steps of 2, 3, 5 and 10 from any number forward and backwards. • Recognises the place value of each digit in a two- digit number • Compares and orders numbers up to 100 • Identifies, represents and estimates numbers up to 100 using different representations • Reads and writes numbers to at least 100 in numerals and in words. • Solves number problems and practical problems involving the ideas above.	**Number: Addition and Subtraction** • Adds and subtracts numbers mentally, (including: a two-digit number and ones, a two-digit number and tens a two-digit number and hundreds). • Records addition and subtraction in columns to support place value • Uses the inverse relationship between addition and subtraction to check calculations • Solves missing number problems.	**Number: Place Value** • Counts from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. • Starts to recognise the place value of each digit in a three-digit number (hundreds, tens, ones). • Compares numbers up to 1000. • Identifies, represents and estimates numbers up to 500 using different representations, including a number line. • Reads and writes numbers up to 1000 in numerals. • Solves number problems and practical problems involving the ideas above.	**Number: Addition and Subtraction (including money)** • Adds and subtracts numbers mentally (including: a three-digit number and ones a three-digit number and tens). • Adds and subtracts numbers with up to two digits, using formal written methods of columnar addition and subtraction. • Starts to estimate the answer to a calculation and use inverse operations to check answers. • Solves problems, including missing number problems, using number facts and place value. • Adds and subtracts amounts of money to give change, using both £ and p in practical contexts.	**Number: Place Value** • Counts from 0 in multiples of 4, 8, 50 and 100. • Finds 10 or 100 more or less than a given number. • Recognises the place value of each digit in a three-digit number (hundreds, tens, ones). • Compares and orders numbers up to 1000. • Identifies, represents and estimates numbers up to 1000 using different representations. • Reads and writes numbers up to 1000 in numerals and in words. • Solves number problems and practical problems involving the ideas above.	**Number: Four Operations** • Adds and subtracts numbers mentally, (including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds). • Adds and subtracts numbers with up to three digits, using formal written methods of columnar addition and subtraction. • Estimates the answer to a calculation and use inverse operations to check answers on a regular basis. • Solves problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. • Recalls and use multiplication and division facts for the 3, 4 and 8 multiplication tables. • Writes and calculates 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 • Solves problems, including missing number problems, involving multiplication and
	Number: Multiplication and Division • Recalls and use multiplication and division facts for the 2, 5 and 10 multiplication tables • Calculates mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs. • Solves problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication	**Measurement: Time** • Tells and writes the time from an analogue clock to the nearest quarter of an hour • Estimates and reads time with increasing accuracy to the nearest quarter of an hour; record and compare time in terms of hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight. • Knows the number of seconds in a minute and the number of minutes in an hour.	**Measurement** • Measures, compares and estimates lengths (m/cm/mm). • Finds the perimeter of squares and rectangles drawn on squared paper by counting. • Measures the perimeter of squares, rectangles and triangles. • Tells and writes the time from an analogue clock to the nearest five minutes with increasing accuracy.	**Statistics** • Interprets and present data using bar charts, pictograms and tables. • Understands that data needs to be collected with a question or purpose. • Solves one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.	**Geometry: Properties of shape** • Draws 2-D shapes and make 3-D shapes using modelling materials; recognises 3-D shapes in different orientations and describe them. • Recognises that angles are a property of shape or a description of a turn. • Identifies right angles, recognises that two right angles make a half-turn, three make three quarters of a turn and	

	and division facts, including problems in contexts.	• Compares durations of events given in seconds or minutes.	• Knows Roman numerals from I to XII. • Records and compares time in terms of seconds, minutes, hours and o'clock; uses vocabulary such as a.m./p.m., morning, afternoon, noon and midnight. • Knows the number of seconds in a minute, the number of minutes in an hour and the number of days in each month. • Compares durations of events that involve simple conversion.	**Number: Fractions** • Counts in tenths; recognises that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. • Recognises, finds and writes fractions of a discrete set of objects: unit fractions with small denominators. • Recognises and uses fractions as numbers: unit fractions with small denominators • Recognises the equivalence of halves, quarters, fifths and tenths. • Adds fractions with the same denominator within one whole. • Compares and orders fractions with the same denominators and compare unit fractions.	four a complete turn; identifies whether angles are greater than or less than a right angle. • Identifies horizontal and vertical lines and pairs of perpendicular and parallel lines.	division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.
	Number: Fractions • Counts up to 10 in halves and quarters. • Writes simple fractions of numbers for example ½ of 6=3. • Recognises the equivalence of 2/4 and ½. • Recognises that if you add 2 halves together or 4 quarters together they add up to 1. • Compares and orders fractions with the same denominators. • Solves problems that involve all of the above.	**Measurement: Money** • Adds and subtracts simple amounts of money using the support of practical apparatus • Adds and subtracts amounts of money to give change, using practical apparatus if needed.	**Number: Multiplication and Division** • Recalls and use multiplication and division facts for the 3 and 4 multiplication tables. • Writes and calculates mathematical statements for multiplication and division using the multiplication tables that they know (including for two-digit numbers times one-digit numbers) using mental methods. • Solves problems, including missing number problems, involving multiplication	**Geometry** • Draws 2-D shapes and make 3-D shapes using modelling materials with support. • Recognises that angles are a description of a turn and understands the lengths of the lines used to represent angles do not affect the size of the angle. • Identify right angles, recognises that two right angles make a half-turn, three make three quarters of a turn and four a complete turn.	**Number: Fractions** • Counts 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. • Recognises, finds and writes fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. • Recognises and uses fractions as numbers: unit fractions and non-unit fractions with small denominators. • Recognises and shows, using diagrams, equivalent fractions with small denominators. • Adds and subtracts fractions with the same denominator within one whole. • Compares and orders unit fractions, and fractions with the same denominators. • Solves problems that involve all of the above.	**Measurement: Time** • Tells and writes the time from an analogue clock, including using Roman numerals from I to XII. • Estimates and reads time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight. • Knows the number of seconds in a minute and the number of days in each month, year and leap year. • Compares durations of events, for example to calculate the time taken by particular events or tasks.

			and division, including positive integer scaling problems.	• Identifies horizontal and vertical lines and begin to identify parallel lines.	**Measurement: Length, Perimeter, Mass and Capacity** • Measures, compares, adds and subtracts: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). • Measures the perimeter of simple 2-D shapes.

Year 4	Autumn		Spring		Summer	
	Number: Place Value • Counts in multiples of 6s using knowledge of counting in 3s to support. • Count in multiples of 1000s using knowledge of counting in 100s to support. • Reads and writes numbers up to 1000 in numerals and in words noting and taking care where zero appears as a placeholder. • Counts back from 10 to -10 recognizing the symmetry of the numbers either side of zero. • Understands that the value of the digits is ten times greater than the previous place value position. Use place value apparatus to support this. • Compares and orders numbers up to 2000. • Rounds any number to the nearest 10 knowing that 5s round up. • Solves number and practical problems that involve aspects of the above and with increasingly large positive numbers. • Reads Roman numerals to 10 (I to X).	**Number: Addition and Subtraction** • Adds and begins to subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction choosing when these methods are appropriate and when to use informal methods. • Recognises the inverse of a calculation and use this to check answers to a calculation with numbers up to 4 digits. • Rounds the numbers in a calculation and carry out the simplified calculation to generate an estimate. • Solves addition and subtraction one- and two-step problems in contexts, deciding and explaining which operation is required. **Number: Multiplication and Division** • Uses knowledge of the 3 times table to derive then recall and use multiplication and division facts for the 6 times table. • Recall and use multiplication and division facts for the 11 times table. • Uses place value, known and derived facts for 2,3,4,5,8 and 10 and including multiplying by 0 and 1 and dividing by 1.	**Number: Place Value** • Explores and recognise the pattern in the 9 times table. • Counts in multiples of 25. • Reads and writes numbers up to 9999 in numerals and words noting and taking care where zero appears as a placeholder. • Places positive and negative numbers between -100 and 100 in approximately the correct position on an empty number line justifying their decision. • Builds four digit numbers that contain zeros and explain the role the zero plays in the value of the number. • Orders numbers up to 9999 appreciating that the thousands then the hundreds then the tens and then the ones affects the magnitude of a number. • Rounds any number to the nearest 10 or 100 knowing that 50s round up. • Solves number and practical problems that involve aspects of the above and with increasingly large positive numbers and negative numbers to -100.	**Number: Multiplication and Division** • Uses knowledge of other tables to derive multiplication and division facts for the 9 and 12 times tables. • Counts in 7s to support the learning of the 7 times table. • Uses place value, known and derived facts for 2, 3, 4, 5, 6, 8, 9, 10 and 11 including multiplying by 0 and 1 and dividing by 1. • Recognises numbers may have different numbers of factors. • Finds factor pairs all known multiplication tables. • Multiplies two-digit and three-digit numbers by a one- digit number using formal written layout. • Explain the place value within the formal written layout. • Solves problems involving multiplying and adding, including using the distributive laws to multiply numbers (e.g. 18 x 5= (10 + 8) x 5 = (10 x 5) + (8 x 5) = 50 + 40 = 90).	**Number: Place Value** • Counts in multiples of 6, 7, 9, • 25 and 1000. • Finds 1000 more or less than a given number. • Counts backwards through zero to include negative numbers. • Recognises the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). • Orders and compares numbers beyond 1000 • Rounds any number to the nearest 10, 100 or 1000. • Solves number and practical problems that involve all of the above and with increasingly large positive numbers. • Reads 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: Four Operations** • Adds and subtracts numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. • Estimates and uses inverse operations to check answers to a calculation up to 4 digits. • Solves addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. • Recalls multiplication and division facts for multiplication tables up to 12 × 12. • Uses place value, known and derived facts to multiply and divide mentally with numbers up to 12x12, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. • Recognises and uses factor pairs and commutativity in mental calculations. • Multiplies two-digit and three-digit numbers by a one- digit number using formal written layout consistently. • Solves problems involving multiplying and adding, including using the associative and distributive laws to multiply two digit numbers by one digit number. • Solves integer scaling problems and harder correspondence problems.

<table>
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<td rowspan="2"></td>
<td><u>Measurement: Time</u>
• Reads the time to the nearest minute on both analogue and digital clocks.
• Begins to solve simple problems involving converting from hours to minutes.</td>
<td>• Explores and recognises what factor pairs are in known multiplication tables.
• Begins to multiply two-digit numbers a one-digit number using formal written layout.
• Understands and explains using example how multiplication is commutative.
• Understands when a problem involves scaling rather than repeated addition (e.g. recipe adaptation).</td>
<td>• Knows the key Roman numerals up to 100 (I=1, v=5, X=10, L=50 and C=100).</td>
<td>• Solves simple scaling problems using multiplication and division (e.g. triple the amount).</td>
<td><u>Decimals</u>
• Rounds decimals with one decimal place to the nearest whole number.
• Recognises and write decimal equivalents of any number of tenths or hundredths.
• Recognises and write decimal equivalents to ½ ¼ and ¾.
• Compares numbers with the same number of decimal places up to two decimal places.
• Solves simple measure and money problems involving fractions and decimals to two decimal places.</td>
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<tr>
<td><u>Number: Fractions</u>
• Builds models using number rods to derive equivalent fractions with denominators to 10.
• Counts 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 and that this can be written in decimal</td>
<td><u>Geometry: Properties of Shape</u>
• Compares geometric shapes based on their properties identifying similarities and differences using correct mathematical vocabulary to describe them.
• Discusses the size of an angle in comparison to a right angle.
• Identifies lines of symmetry in squares, rectangles, triangles of different type and other quadrilaterals.</td>
<td colspan="2"><u>Fractions and Decimals</u>
• Recognises and show, using diagrams, families of common equivalent fractions.
• Counts up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
• Finds 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.
• Finds which whole numbers a number to one decimal place lies between.
• Solves problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole</td>
<td><u>Geometry: Properties of shape</u>
• Compares and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
• Identifies acute and obtuse angles and compare and order angles up to two right angles by size.
• Identifies lines of symmetry in 2-D shapes presented in different orientations.
• Completes a simple symmetric figure with respect to a specific line of symmetry.

<u>Statistics</u>
• Generates (unit and simple scale stepped) bar charts, line graphs and tables from both given data and data generated (e.g. links with science).
• Interprets and presents discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
• Solves comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</td>
</tr>
</table>

	format (Understands that 0.1 is a tenth of one whole). • Relates fractions to division in the context of problem solving (understands that finding a unit fraction of an amount is the same as dividing by the denominator). • Adds and subtracts fractions with the same denominator within one whole. • Recognises and use fractions as numbers understanding that they are positioned between whole numbers on a number line (knows that ½ is the same as 0.5). • Explains which whole numbers a number with one decimal place is located between. • Understands the fractional relationships in familiar measures and use these to support problem solving. 50p = ½ of a pound. 10p = 1/10 of a pound.	• Knows that a value on the horizontal axis is the x value and a value on the vertical axis is the y value. • Given a point can identify x and y value and write these within a set of brackets.	number. • Adds and subtracts fractions with the same denominator. • Recognises and write decimal equivalents of any number of tenths. • Recognises and write decimal equivalents to ½ and ¼. • Places numbers with one decimal place on an empty number line. Solves simple measure and money problems where there is simple decimal conversion between units of measurement. (e.g. £0.30 = 30p, 20cm = 0.2m).		<u>Geometry: Position and Direction</u> • Knows that a value on the horizontal axis is the x value and a value on the vertical axis is the y value. • Translates a shape in one direction by a number of units and explore how the coordinates change (e.g. 2 places to the right). • Describes 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. • Given a point can identify x and y value and write these within a set of brackets. • Plots specified points on a grid which have been presented as x and y coordinates within brackets (e.g. (3,4)). • Plots specified points and draw sides to complete a given polygon.
		<u>Measurement: Length and Perimeter</u> • Explores the meaning of milli, centi, and kilo in relation to units of measurement. • Measures the perimeter of a simple straight-sided 2d shape using a ruler. • Makes comparisons between different shapes in terms of their relative size and the amount of space that they fill. • Orders three sets of measurements where measurements are of mixed unit (e.g. 3.25m, 58cm and 2m).	<u>Measurement: Money</u> • Converts mixed measures to one unit of measure and then solve a calculation in that format then reconvert. (e.g. £17.56 + 85p = 1756p + 85p = 1841p = £18.41). • Estimates, compares and calculates different measures, including money in pounds and pence.	<u>Measurement: Area</u> • Understands that the area of a shape is how much space it fills and shapes can be described in terms of their area. • Finds the area of rectilinear shapes by counting squares.	

Year 5

Autumn

Number: Place Value

- Reads, writes, orders and compares numbers to at least 1,000,000 and determine the value of each digit.
- Counts forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.
- Interprets negative numbers in context, counts forwards and backwards with positive and negative whole numbers, including through 0.
- Rounds any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.
- Solves number problems and practical problems that involve all of the above.
- Reads Roman numerals to 1,000 (M) and recognises years written in Roman numerals.

Statistics

- From a graph of non-unit scale extract the data and makes a comparative statement about information from two readings.
- Reads and interprets information in tables.
- Solves comparison, sum and difference problems using information presented in a line graph.
- Completes, reads and interprets information in tables, including timetables.

Number: Addition and Subtraction

- Using the language of place value explains their working as they carry out columnar addition and subtraction calculations including those involving bridging and decomposition.
- Adjusts a calculation in order to simplify it using their number facts and rounding.
- Uses inverse operations to check answers to a calculation, including rounding pounds and pence to the nearest 10 pence or pound.
- Solves addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Number: Multiplication and Division

- Finds all factor pairs of a number and find multiples, can define 'factor' and 'multiple'. Understands that factors and multiples are connected ideas: 48 is a multiple of 6 and 6 is a factor of 48.
- Defines a prime number and understand why 1 is not a prime number.
- Carries out expanded multiplication when carrying out multiplication by two digits numbers

Spring

Number: Multiplication and Division

- Identifies multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers.
- Knows and uses the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establishes whether a number up to 100 is prime and recall prime numbers up to 19.
- Multiplies numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.
- Multiplies and divides numbers mentally, drawing upon known facts such as multiplication tables and related division facts and multiplying by multiples of 10.
- Divides 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.
- Multiplies and divides whole numbers and those involving decimals by 10, 100 and 1,000.
- Recognises and uses square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).
- Solves problems involving multiplication and division, including using my knowledge of factors and multiples, squares and cubes.
- Solves problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
- Solves problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Fractions

- Compares and orders (including on a number line) fractions whose denominators are all multiples of the same number.
- Identifies, names and writes equivalent fractions of a given fraction, represented visually, including tenths and hundredths (e.g. on a fraction wall).
- Recognises mixed numbers and improper fractions and convert from one form to the other and write

Summer

Decimals

- Reads and writes decimal numbers as fractions up to hundredths.
- Recognises and uses thousandths and relate them to tenths, hundredths and decimal equivalents.
- Rounds decimals with two decimal places to the nearest whole number and to one decimal place
- Reads, writes, orders and compares numbers with up to three decimal places.
- Solves problems involving number up to three decimal places.

Number: Four Operations

- Adds and subtracts whole numbers with 5 digits, including using formal written methods (columnar addition and subtraction).
- Adds and subtracts numbers mentally with increasingly large numbers, using known skills such as rounding and partitioning.
- Uses rounding and the inverse to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- Solves addition and subtraction multi- step problems in contexts, deciding which operations and methods to use and why.
- Identifies multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers.
- Knows and uses the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- Establishes whether a number up to 100 is prime and recall prime numbers up to 19.
- Multiplies numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.
- Multiplies and divides numbers mentally, drawing upon known facts such as multiplication tables and related division facts and multiplying by multiples of 10.
- Divides 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.
- Multiplies and divides whole numbers and those involving decimals by 10, 100 and 1,000.
- Recognises and uses square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).

	Measurement: Perimeter and Area • Measures and calculates the perimeter of composite rectilinear shapes in centimetres and metres. • Estimates the area of irregular shapes by counting squares and approximating or considering them as a fraction of a rectilinear shape (e.g. the area of a right-angled triangle as half of the oblong or a isosceles triangle on squared paper). • Calculates and compares the area of rectangles (including squares), and including using standard units, square2centimetres (cm) and square metres2(m) and estimate the area of irregular shapes. • Uses all four operations to solve problems for all of the above using decimal notation. **Measurement: Length and Perimeter** • Explores the meaning of milli, centi, and kilo in relation to units of measurement.	greater than 12. • Uses known multiplication facts and place value to mentally calculate beyond the known times tables (e.g. 23x7= (20x7) + (3x7) = 140 + 21= 161). • Divides two-digit and three-digit numbers by a one-digit number, using formal written layout, introducing remainders. • Understands how the digits move and the decimal point stays in the same position when multiplying or dividing by 10 and 100. • Generates square numbers and identify the pattern that squared numbers form in a times table square. Uses the notation of squared (²). • Solves problems involving multiplication and division, including using their knowledge of factors and multiples and squares. • Solves two step problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign (in balancing	mathematical statements > 1 as a mixed number. • Adds and subtracts fractions with the same denominator and denominators that are multiples of the same number. • Multiplies proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. **Decimals and Percentages** • Understands that a number written as a decimal is a fraction over 10 or 100 or 1000 depending on its place value (e.g 0.2 = 2/10). • Recognises and use thousandths and relate them to hundredths. Understands and uses thousandths of a unit in a familiar measure (e.g. grams to kilograms). • Recognises the per cent symbol (%) and understands that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal. • Rounds decimals with two decimal places to the nearest whole numbers. • Reads, writes, orders and compares numbers with up to three decimal places on a number line, initially with the same number of decimal places and moving on to decimals with different numbers of digits. • Solves problems involving number up to three decimal places with the same number of places within one question. • Solves problems that require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5 and 4/5 and those fractions with a denominator of a multiple of 10 or 25.	• Drawing upon their own knowledge, solves problems involving all four operations (or a combination of these) that include scaling by simple fractions and problems involving simple rates. **Geometry: Properties of shape** • Identities 3-D shapes, including cubes and other cuboids, from 2-D representations • Knows angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • Draws given angles and measure them in degrees • Identifies: angles at a point and one whole turn (total 360°); angles on a straight line and ½ a turn (total 180°) and other multiples of 90°. • Uses the properties of rectangles to deduce related facts and find missing lengths and angles • Distinguishes between regular and irregular polygons based on reasoning about equal sides and angles. **Geometry: Position and Direction** • Reflects shapes within the first quadrant in a horizontal or vertical line and explore the new coordinates. • Carries out the translation of a shape by a combination of horizontal and vertical movements within the first quadrant exploring the change to the coordinates following the translation. • Identifies, describes and represents the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

	• Measures the perimeter of a simple straight-sided 2d shape using a ruler. • Makes comparisons between different shapes in terms of their relative size and the amount of space that they fill. • Orders three sets of measurements where measurements are of mixed unit (e.g. 3.25m, 58cm and 2m).	calculations where one calculation is equivalent to another (rather than when the = sign leads to the answer)). • Solves problems involving multiplication and division and problems that require either scaling or repeated addition/subtraction.	<u>Measurement: Volume</u> • Estimates capacity (e.g. using water) for a variety of containers. • Can reference objects of known capacity (e.g. can of drink). • Estimates volume [e.g. using 1cm3 blocks to build cuboids (including cubes)] and capacity [e.g. using water].	<u>Measurement: Converting Units</u> • Explains the relationship between units of metric measures in terms of fractions • Converts between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). • Experiences approximate equivalences between metric units and common imperial units such as inches. • Uses measuring equipment which has both imperial and metric equivalence (e.g. pints/litres, cm/inches, g/lbs). • Understands and uses approximate equivalences between metric units and common imperial units (e.g. inches, pounds and pints)

Year 6	Autumn	Spring	Summer
	Number: Place Value • Given a set of seven digits including zero generates numbers up to seven digits and place them in order of size. • Rounds numbers to the nearest million and ten million • Places positive and negative and positive numbers on a number line at an appropriate distance from zero. • Solves number and practical problems that involve all of the above.	**Number: Fractions, Decimals and Percentages** • Uses common factors to simplify fractions; use common multiples to express fractions in the same denomination. • Compares and orders fractions, including fractions > 1. • Adds and subtracts fractions with different denominators and mixed numbers, using the concept of equivalent fractions. • Multiplies simple pairs of proper fractions, writing the answer in its simplest form [for example, □ x □ = 1/8]. • Divides proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]. • Associates a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]. • Identifies the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. • Multiplies one-digit numbers with up to two decimal places by whole numbers. • Uses written division methods in cases where the answer has up to two decimal places. • Recalls and uses equivalences between simple fractions, decimals and percentages, including in different contexts.	**Number: Place Value** • Reads, writes, orders and compares numbers up to 10 000 000 and determine the value of each digit. • Rounds any whole number to a required degree of accuracy. • Uses negative numbers in context, and calculate intervals across zero. • Solves number and practical problems that involve all of the above.
	Number: Four Operations • Adds and subtracts whole numbers with 5 or more digits, including using formal written methods (columnar addition and subtraction). • Given a word problem decides which operation could be used. • Uses rounding to check answers to calculations • Carries out two step problems mentally including mixed operations. • Knows that the part of the calculation within the brackets must be carried out first. • Multiplies 4 digit numbers by 2 digits using the formal written method of long multiplication. • Given a division calculation which generates a remainder can understand the nature of the remainder in the context of the problem and what to do with it. • Understands the difference between the processes and steps used to carry out long and short division. • Systematically finds all factor pairs of a number.	**Algebra** • Uses simple formulae. • Expresses missing number problems algebraically. • Finds pairs of numbers that satisfy an equation with two unknowns. • Enumerates possibilities of combinations of two variables. **Statistics** • Interprets and constructs pie charts and line graphs and use these to solve problems. • Recognises the formula for calculating the mean. • Calculates and interprets the mean as an average.	**Number: Four Operations** • Solves addition and subtraction multi-step problems in context, deciding which operations and methods to use and why. • Uses estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • Multiplies multi-digit numbers up to 4 digits by a two- digit whole number using the formal written method of long multiplication. • Divides numbers up to 4 digits by a two- digit whole number using the formal written method of long and short division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. • Identifies common factors, common multiples and prime numbers. • Uses their knowledge of the order of operations to carry out calculations involving the four operations.

	<u>Number: Fractions</u> • Identifies that there is a common factor between the numerator and denominator when it can be simplified. • Compares and orders non unit fractions whose denominators are all multiples of the same number. • Recognises that fractions with different denominators cannot be combined without converting them. • Multiplies unit fractions and relate this to division. • Divides unit fractions by whole numbers to establish why the numerator stays the same and the denominator changes. • Recalls and uses some equivalence between simple fractions, decimals and percentages, □, quarters, fifths, tenths, hundredths.	<u>Geometry</u> • Draws 2-D shapes using given dimensions and angles. • Recognises, describes and builds simple 3-D shapes, including making nets. • Compares and classifies geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. • Recognises angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • Illustrates and names parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. • Describes positions on the full coordinate grid (all four quadrants). • Draws and translates simple shapes on the coordinate plane, and reflect them in the axes.	<u>Ratio and Proportion</u> • Solves problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. • Solves problems involving the calculation of percentages and the use of percentages for comparison. • Solves problems involving similar shapes where the scale factor is known or can be found. • Solves problems involving unequal sharing and grouping using knowledge of fractions and multiples.

		<u>Measurement</u> • Solves problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. • Uses, reads, writes and converts between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. • Converts between miles and kilometres. • Recognises that shapes with the same areas can have different perimeters and vice versa. • Recognises when it is possible to use formulae for area and volume of shapes. • Calculates the area of parallelograms and triangles. • Calculates, estimates and compares volume of cubes and cuboids using standard units, including cubic centimetres.	<u>Consolidation/SATs revision</u>