Acre Hall Primary School- Maths Long Term Curriculum Plan

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Verbal Counting 1-3, 1-5 5 to 10 Verbal Counting – beginning correspondence 1-3, 1-5 5 to 10 Including mark making for representing mathematical stories Action Songs and rhymes. Number lines /washing line activities. Using natural materials to count (hands on) Number hunts Number blocks.	Continue to sing word songs to count to 10 verbally Counting – cardinality to 5 One-to-one correspondence and cardinality. Knowing the last number said is the total. Cardinality: Subitise to 3 Composition: Makes a small collection with the same number as another collection.	Pattern: patterns of colour, shape, objects, size etc. Consolidate 1-1 correspondence to 5 through counting how many in the pattern etc. Comparing numbers: Consciously recognizes that two very small collections have the "same number" by intuitively making a correspondence between the items in each collection. At this level, in certain situations, children may also put objects, words, or actions in one-to-one or many-to-one Comparing numbers correspondence or a mixture. Include mark making for mathematical stories throughout the comparing numbers section. Uses one number name for each object when counting	Comparing (Perceptual comparer) Compares collections that are quite different in number (e.g., one is at least twice the number as the other). Compares collections more similar in number but only for very small numbers (1, 2, and sometimes 3). Compares collections using number words "one" and "two. Measurement: (length quantity recogniser) Identifies length/distance as an attribute. May understand length as an absolute descriptor (e.g., all adults are tall), but not as a comparative (e.g., one person is taller than another). May compare non-corresponding parts of shape in determining side length Measurement: (LT – volume quantity recogniser &Volume filler) Spatial reasoning: simple slider turner Develop language: Taller, smaller, shorter, wider, narrower, longer, shorter Fuller, nearly full, empty, emptier, part-full Language: Turn over, flip, move sideways, forward, backward, higher, on top, beneath, underneath, beside etc.	Subitising to 5 Comparing: Matches small (1 to about 4), equal collections consisting of different items, showing that they are the same number Compare by counting: Activities ask children to count two sets (up to 5) that have the same type of objects in them and to *use* the results of the counting to see if they are the same number. To compare quantities using the vocabulary of greater, less, more, fewer and the same	Measurement (length direct comparer) 2D Shapes 3D Shapes To compare objects weight, size, length and capacity
Reception	Recite numbers to 10 forward & backward (including recognition of numeral) Pattern: Pattern making with shapes, beads, small world etc with only a 2 object pattern Numicon: ABABAB, AABBAABB, AABAABAA B ETC Deep understanding of number 1 – 3 (including recognising triangles) Representing/ comparing/ composition of numbers 1- 3 (Include 1p and 2p coin, include circle) Fluency: Subitising upto 5	Deep understanding of number 4 (including recognising squares, rectangles) and 5 (Include 5p coin) Counting strategies to 10: Cardinality and organising objects to count in different ways. Counting strategies: Ordinality – if I had one more/one less how many would there be? (One more/less) Comparing numbers upto - bigger, smaller, shorter, taller. Composition of numbers 1 - Number bonds to 5 3D shapes Fluency: Counting from a given number within 10	Exploring 2D shapes (squares/rectangles) including counting of edges. Patterns Counting beyond 20 Exceeding – counting in 2s, 5s, 10s Deep understanding of number 6 and 7 Fluency: one more, one less/one fewer to 10 Fluency: recognising numerals to 20	Deep understanding of number 8 – 9 Begin to understand 10 Addition and subtraction within 10 using aggregation and partitioning contexts Doubling and halving within 10 Fluency: numbers between 10 and 20 – counting including one more one less Fluency: number bonds to 5 Fluency: Counting forwards and backwards from a number bigger than 10	Deep understanding of number 11 - 20 Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally Even and odd numbers – deeper understanding patterns and relationships between numbers 10 Money Fluency: doubling numbers (0-5) to total within 10 Fluency: counting in 2s, 5s when combining groups Fluency: one more one less than numbers to 20	Deeper understanding of 10 Continue exploring simple addition and subtraction within 10 using aggregation and partitioning contexts Augmentation and reduction (up to 10) for addition and subtraction (being able to count on/back to add or subtract in a real life context) Understanding zero Understanding nominal numbers: e.g. house numbers do not always represent how many houses there are. Phone numbers do not represent a quantity etc. The number is just a name/ label. Fluency: Counting backwards from any number between 10 and 20 Fluency: Language of comparison including time. e.g. lunch time is [ ] than breakfast. Afternoon break comes [ ] home time. Etc. Fluency: doubles Fluency: recognising coins to 10p

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1	Number: Place Value (within 10)	Number: Addition and Subtraction (within 10)	Geometry: Shape	Number: Place value (within 20)	Number: Addition and subtraction (within 20)	Number: place value (within 50)	Measurement: length and height	Measurement: mass and volume	Number: Multiplication and Division	Number: Fractions	Geometry: Position and Direction	Number: Place Value (within 100)	Measurement: Money	Measure-ment: Time
2	Number: Place Value	Number: Addition and Subtraction	Geometry: shape	Measurement: money	Number: multiplication and division		Measurement: length and height	Measurement: mass, capacity and temperature	Number: fractions	Measurement: time	Statistics		Geometry: position and direction Investigation	
3	Number: Place Value	Number: Addition and Subtraction	Number: Multiplication and Division A	Number: multiplication and division B		Measurement: length and perimeter	Number: fractions A	Measurement: mass and capacity	Number: Fractions B	Measurement: money	Measurement: Time	Geometry: shape		Statistics
4	Number: Place Value	Number: Addition and Subtraction	Measurement: area	Number: Multiplication and Division A	Number: multiplication and division B	Measurement: length and perimeter	Number: fractions	Number: Decimals A	Number: Decimals B	Measurement: money	Measurement: time	Geometry: shape	Statistics	Geometry: position and direction
5	Number: Place Value	Number: Addition and Subtraction	Number: Multiplication and Division A	Number: fractions A	Number: Multiplication and Division B	Number: Fractions B	Number: Decimals and Percentages	Measurement: perimeter and area	Statistics	Geometry: shape	Geometry: Position and Direction	Number: decimals	Number: negative numbers	Measurement: converting units	Measurement: volume
6	Number: Place Value	Number: Addition, subtraction, multiplication and division	Number: Fractions A	Number: Fractions B	Measurement: converting units	Number: Ratio	Number: Algebra	Number: Decimals	Number: fractions, decimals and percentages	Measure-ment: area, perimeter and volume	Statistics	Geometry: Shape	Geometry: position and direction	Themed projects, consolidation and problem solving

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Specialist Small Classes

Within the SSC, the teaching of Maths is heavily adapted to meet the individual needs of each child. The vast majority of our pupils are working below age related expectations for Mathematics. Pupils are placed into smaller groups, allowing them to work alongside children who are accessing the curriculum at the same or similar level. Both teachers and support staff are utilised to lead these smaller groups, although all planning and assessments are carried out by qualified teachers. Weekly planning templates differ slightly from those used within mainstream, to reflect the adaptions made for each child and to provide a comprehensive teaching guide for support staff to follow, allowing for quality first teaching. Plentiful opportunities are provided for pupils to explore Maths through the use of practical resources and hands on activities. Repetition and over-learning are embedded within our approach to Maths. Each lesson begins with the 'fluent in five' starter activity, relating to the year group objectives each child is currently working at. During school assessment week, many of our pupils complete the NTS Maths assessments, however, more informal assessments of children's learning are carried out regularly. To record assessments, B-Squared Connecting Steps is used. This system allows us to track pupil attainment and progress in the form of a percentage of year group objectives met. Gaps in learning can clearly be identified using this system. Within the small classes, all pupils are set one piece of Maths homework each week. For those that are able, this task may be set via MyMaths. Additionally, many of our pupils utilise TT Rockstars.

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Mathematics EYFS

At Acre Hall the children can access continuous provision in both the Nursery and Reception classrooms. Continuous provision incorporates all areas of learning and provides children with the opportunity to demonstrate characteristics of effective learning. Children are given the freedom to make independent choices and are encouraged to be active learners and take control of their own learning. We use resources that are open ended to encourage creativity, imagination and high order thinking skills. Within the provision, children are encouraged to participate in math enhancements that link to that days/weeks teaching as part of the subject in focus for that week. We endeavor to cover all relevant mathematics objectives as stated in *'Development Matters (2021)'* throughout the year often progressing the content each term to enable children to meet the Early Learning Goals at the end of reception.

<table>
<tr><td colspan="2">In EYFS, pupils are taught the basics of Maths using our Early Years curriculum for Number, Shape Space and Measures. Aspects of each curriculum area form the foundation of skills and knowledge which link to the Mathematics Curriculum for Key Stage 1 and 2. Maths is taught through a variety of practical adult led and child initiated activities. At Acre Hall in Early Years we take a 'Planning in the moment approach' to promote culture capital and to provide activities that reflect the children's unique interests. This is added to retrospectively throughout the year and maths is incorporated within these interests and explored discretely and/or non-discreetly throughout the day. Regular observations and assessments are recorded using an on-line journal called Arc. This information then contributes to a summative assessment at the end of EYFS using the Early Years Outcomes for Number, Shape Space and Measures.

<u>SEN</u>
Using concrete examples can be helpful for children with SEN who may struggle to understand abstract concepts. For example, using manipulatives such as blocks, counters, or other objects can help children understand mathematical concepts such as addition. Teaching is adapted to meet the needs of the children and in some cases children with SEN may be provided with little but often one to one time with the teacher to explore and/or practice concepts taught. Again, math is provided in continuous provision so children are exposed and encouraged to use math skills independently.</td></tr>
<tr><td><u>Curriculum</u>
<u>EYFS development matters statements</u></td><td><u>Communication & Language</u>
• Learn new vocabulary.
• Ask questions to find out more and to check what has been said to them.
• Articulate their ideas and thoughts in well-formed sentences.
• Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.
• Use new vocabulary in different contexts.

<u>Understanding the world</u>
• Explore collections of materials with similar and/or different properties.
• Talk about what they see, using a wide vocabulary.
• Explore how things work.
• Understand the effect of changing seasons on the natural world around them.

<u>Personal, Social and Emotional Development</u>
• Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them.

<u>Mathematics</u>
• Combine objects like stacking blocks and cups. Put objects inside others and take them out again.
• Take part in finger rhymes with numbers.</td></tr>
</table>

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	• React to changes of amount in a group of up to three items. • Compare amounts, saying 'lots', 'more' or 'same'. Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence. • Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence. • Count in everyday contexts, sometimes skipping numbers – '1-2-3-5'. • Build with a range of resources. • Complete inset puzzles. • Compare sizes, weights etc. using gesture and language - 'bigger/little/smaller', 'high/low', 'tall', 'heavy'. • Notice patterns and arrange things in patterns. • Develop fast recognition of up to 3 objects, without having to count them individually ('subitising). • Recite numbers past 5. • Say one number for each item in order: 1,2,3,4,5. • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). • Show 'finger numbers' up to 5. Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals. • Solve real world mathematical problems with numbers up to 5. • Compare quantities using language: 'more than', 'fewer than'. • Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. • Understand position through words alone – for example, "The bag is under the table," – with no pointing. • Describe a familiar route. Discuss routes and locations, using words like 'in front of' and 'behind' • Make comparisons between objects relating to size, length, weight and capacity. • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. • Combine shapes to make new ones – an arch, a bigger triangle, etc. • Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. • Use informal language like 'pointy', 'spotty', 'blobs', etc. • Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern. • Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' • Count objects, actions and sounds • Subitise. • Link the number symbol (numeral) with its cardinal number value. • Count beyond ten. • Compare numbers. • Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10. • Automatically recall number bonds for numbers 0–5 and some to 10. • Select, rotate and manipulate shapes to develop spatial reasoning skills. • Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.

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	• Continue, copy and create repeating patterns. • Compare length, weight and capacity.
Reception **Early Learning Goals**	**Mathematics** **Number** Children at the expected level of development will: • Have a deep understanding of number to 10, including the composition of each number • Subitise (recognise quantities without counting) up to 5 • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. **Numerical Patterns** Children at the expected level of development will: • Verbally count beyond 20, recognising the pattern of the counting system • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
Books linked to teaching	• 5 Little Ducks • The hungry caterpillar • 10 Little Monkeys • Hickory Dickory Dock • Tangled: A Story About Shapes • A Trapezoid is Not a Dinosaur! • Circle Rolls

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Key Stage 1

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the 4 operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Year One

	Autumn	Spring	Summer
NC Links **Topic** Number: Place Value	• forwards and backwards, beginning with 0 or 1, or from any given number count • identify one more and one less identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • read and write numbers from 1 to 10 in numerals and words.	• read and write numbers from 1 to 10 in numerals and words. • Count to 50 • Partition up to 50 in tens and ones	• read and write numbers to 100 in numerals • count to and across 100
Topic Number: Addition and Subtraction	• Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9	• represent and use number bonds and related subtraction facts within 20 • add and subtract one-digit and two-digit numbers to 20, including zero	

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Topic Geometry: Shape Geometry: Position and Direction	● recognise and name common 2-D and 3-D shapes, including: - 2-D shapes [for example, rectangles (including squares) circles and triangles] - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].		● describe position, direction and movement, including whole, half, quarter and three quarter turns.
Measurement: Length and Height Measurement: Mass and Volume Measurement: Money Measurement: Time		● compare, describe and solve practical problems for: - lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] ● measure and begin to record the following: - lengths and heights ● 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] ● measure and begin to record the following: - mass/weight capacity and volume	● recognise and know the value of different denominations of coins and notes compare, describe and solve practical problems for: time (for example, quicker, slower, earlier, later) ● measure and begin to record the following: time (hours, minutes, seconds)

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			● sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] recognise and use language relating to dates, including days of the week, weeks, months and years ● tell the time to the hour and half past the hour and draw the hands on a clock face to show these times
Number: Multiplication and Division			● solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
Number: Fractions		● count in multiples of twos, fives and tens given a number	● recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise ● find and name a quarter as one of four equal parts of an object, shape or quantity.
Cross curricular Links	**Science Geography History Computing DT Music**	**Science**	Science

Curriculum Driver Links	Aspirational Learners	Adventurers & Explorers	Healthy Advocates	Clear Communicators	Global Citizens
	Growing independence and perseverance in answering key questions.	Take part in group activities for example math puzzles in PE and the outdoors.	Enjoy exploring shapes and learn the value of money.	Share ideas and answer questions in various ways (verbal, written, drawing). Develop mathematical vocabulary.	Understand how to share with others. Learn basic life skills including how to tell the time.

Vocabulary	equal to, more than, less than (fewer), most least, greatest, smallest, same, different, sort, groups digit, value, cube, cylinder, cuboid, pyramid, 2d 3d, face, triangles, squares, rectangles	Add, plus, Subtract, take away Part whole, first, then, now bar model, equal to (=), fact families, part-whole model, number bond, pattern, digit, more/greater, less/smaller, double/half mass weight light heavy heavier full/empty	half quarter fraction equal whole parts shape object quantity, pence, coin, pound, note value, before after, next, hours/minutes/seconds first, today, yesterday/tomorrow

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	Circles, surface	more than, less than capacity volume, long/short longer/shorter, tall/short, length, height double/half, measure	
Progression **Number:** **Place Value**	EYFS: ● Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10. ● Play games that involve moving along a numbered track, and understand that larger numbers are further along the track. ● Distribute items fairly, for example, put 3 marbles in each bag. Recognise when items are distributed unfairly. Year 2: ● Count through the number system. Place value within 100. Compare and order numbers. Add and subtract within 100 ● Reason about the location of larger numbers within the linear number system. Compare and order numbers. Read scales. Begin to experience partitioning and combining numbers within 10. 1NF–1 Develop fluency in addition and subtraction facts within 10. ● Add and subtract across 10. All future additive calculation. Add within a column during columnar addition when the column sums to less than 10 (no regrouping). Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging). ● Recall the 2, 5 and 10 multiplication tables. Carry out repeated addition and multiplication of 2, 5, and 10, and divide by 2, 5 and 10. Identify multiples of 2, 5 and 10. Unitise in tens. Identify odd and even numbers.	
Number: Addition and Subtraction	EYFS: • Understand the cardinal value of number words, for example understanding that 'four' relates to 4 objects. Subitise for up to to 5 items. Automatically show a given number using fingers. • Devise and record number stories, using pictures, numbers and symbols (such as arrows). Year 2: ● Add and subtract within 10. Represent composition and decomposition of numbers using equations.		
Geometry: Shape Geometry: Position and Direction	EYFS: ● See, explore and discuss models of common 2D and 3D shapes with varied dimensions and presented in different orientations (for example, triangles not always presented on their base). ● Select, rotate and manipulate shapes for a particular purpose, for example: • rotating a cylinder so it can be used to build a tower • rotating a puzzle piece to fit in its place. Year 2: ● Describe properties of shape. Categorise shapes. Identify similar shapes. Find the area or volume of a compound shape by decomposing into constituent shapes. Rotate, translate and reflect 2D shapes. Identify congruent shapes.		
Measurement: Length and Height Measurement: Weight and Volume Measurement:	Year 2: ● choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels ● compare and order lengths, mass, volume/capacity and record the results using >, < and = Year 2: (mass, capacity and temp) ● choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels ● compare and order lengths, mass, volume/capacity and record the results using >, < and =		

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Time Measurement: Money	Year 2: ● compare and sequence intervals of time ● tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times ● know the number of minutes in an hour and the number of hours in a day. ● recognise and use symbols for pounds (£) and pence (p) ● combine amounts to make a particular value ● find different combinations of coins that equal the same amounts of money ● solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
Number: Multiplication and Division	Year 2: ● recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs ● show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ● solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
Number: Fractions	Year 2: ● recognise, find, name and write fractions 1/3 , 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity ● write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2 .

Year Two

	Autumn	Spring	Summer
NC Links **Topic** **Number: Place Value**	● recognise the place value of each digit in a two-digit number (tens, ones) ● identify, represent and estimate numbers using different representations, including the number line ● compare and order numbers from 0 up to 100; use <, > and = signs ● read and write numbers to at least 100 in numerals and in words ● use place value and number facts to solve problems • Partition numbers up to 100 • Count in 2, 5, 3 and 10		

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Number: Addition and Subtraction	● solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures ● applying their increasing knowledge of mental and written methods recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 ● add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers ● show that addition of two numbers can be done in any order (commutative)		
Measurement: Money		● recognise and use symbols for pounds (£) and pence (p) ● combine amounts to make a particular value ● find different combinations of coins that equal the same amounts of money ● solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	
Number: Multiplication and Division		● recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers ● calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs ● show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ● solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	
Statistics			● interpret and construct simple pictograms, tally charts, block diagrams and simple tables ● ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ● ask and answer questions about totalling and comparing categorical data

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Geometry: Properties of Shape Geometry: Position and Direction		● identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line ● identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces ● identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D and 3-D shapes and everyday objects	● order and arrange combinations of mathematical objects in patterns and sequences ● use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).
Number: Fractions			● recognise, find, name and write fractions 1/3 , 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity ● write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2. ● make equal parts ● recognise a half ● find a half ● recognise a quarter ● find a quarter ● recognise a third ● find a third ● unit fractions
Measurement: Time			● compare and sequence intervals of time ● tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times ● know the number of minutes in an hour and the number of hours in a day.
Measurement: Mass, Capacity and Temperature		• estimate and measure length/height in any direction (m/cm);mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels ● compare and order lengths, mass, volume/capacity and record the results using >, < and = • choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm);	

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Measurement : Length and Height			mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels • compare and order lengths, mass, volume/capacity and record the results using >, < and =		
Cross curricular Links	**Science Geography Computing History DT Music PE**		Science Geography Computing		Science. Geography, History, DT
Curriculum Driver Links					
	Gain confidence with the number system including using column method to find the answer to subtraction and addition calculations.	Orienteering math enrichment activity outdoors.	Being curios and a good at solving problems.	Develop mathematical vocabulary. Gain a greater understanding of time	Recognising temperature changes across the seasons
Vocabulary	place value, number, equal to, greater than/less than, teen, tens/ones, symbol, more/less, compare, tens frame, part-whole, base 10, number bonds, column, total, sum number sentence, add more than addition'; '+'; 'take away'; 'subtract' 'fact family', '10 more' and '10 less', money'; 'coins'; 'notes'; 'pounds £'; 'pence p'; 'left'; 'buy'; 'spend'; 'how much'; 'value'; 'total';		equal groups'; 'equal parts'; 'same'; 'different'; 'more than'; 'in total'; 'multiplication x'; 'repeated addition'; 'skip counting'; 'number in a group'; 'number of groups'; 'times-table'; 'array'; 'rows'; 'columns'; 'number line' 'tally', 'tally charts', 'pictograms', 'block diagrams' and 'tables' 'prism', 'polygon', 'pentagon', 'hexagon', 'octagon' and 'hemisphere' vertices', 'vertex', 'quadrilateral', 'line of symmetry' and 'curved surface' equal' or 'equivalent'. grouping' and 'sharing' division unit fractions' and 'non-unit fractions'unit fractions' and 'non-unit fractions'wholes', 'parts' equal parts'		clockwise' and 'anti-clockwise' right and left, 24 hours', 'daytime', 'night time', 'quarter to', 'quarter past', 'a quarter of an hour', 'to (e.g. twenty to three)', 'a.m.', 'p.m.', 'duration', 'longer', 'shorter' minute hour second hand analogue intervals o'clock half past grams', 'kilograms', 'millilitres', 'litres', 'temperature', 'thermometer', 'degrees Celsius', 'hottest', 'coldest', 'g', 'kg', 'ml', 'l', 'ºC')
Progression Number: Number and Place Value	Year 1: ● Count within 100, forwards and backwards, starting with any number ● Reason about the location of numbers to 20 within the linear number system, including comparing using < > and = Year 3: ● Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three digit multiples of 10. ● Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning ● Reason about the location of any three digit number in the linear number system, including identifying the previous and next multiple of 100 and 10 ● Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.				

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Number: Addition and Subtraction	Year 1: ● Develop fluency in addition and subtraction facts within 10. ● Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. ● Read, write and interpret equations containing addition ( ), subtraction ( ) and equals ( ) symbols, and relate additive expressions and equations to real-life contexts. Year 3: ● Secure fluency in addition and subtraction facts that bridge 10, through continued practice ● Calculate complements to 100. ● Add and subtract up to three-digit numbers using columnar methods. ● Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction
Measurement: Money	Year 1: ● recognise and know the value of different denominations of coins and notes Year 3: ● add and subtract amounts of money to give change, using both £ and p in practical contexts
Number: Multiplication and Division	Year 1: ● 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 Year 3: ● recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables ● write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods ● solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects
Statistics	Year 1: Topic starts in Year 2. Year 3: ● interpret and present data using bar charts, pictograms and tables ● solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables
Geometry: Properties of Shape Geometry: Position and Direction	Year 1: ● Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. ● Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. Year 3: ● Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations. ● Draw polygons by joining marked points, and identify parallel and perpendicular sides.
Number: Fractions	Year 1: ● recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise ● find and name a quarter as one of four equal parts of an object, shape or quantity. Year 3: ● Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts ● Find unit fractions of quantities using known division facts (multiplication tables fluency) ● Reason about the location of any fraction within 1 in the linear number system. ● Add and subtract fractions with the same denominator, within 1.

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Measurement: Time	Year 1: ● compare, describe and solve practical problems for: time (for example, quicker, slower, earlier, later) ● measure and begin to record the following: time (hours, minutes, seconds) ● sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] recognise and use language relating to dates, including days of the week, weeks, months and years ● tell the time to the hour and half past the hour and draw the hands on a clock face to show these times Year 3: ● tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks ● estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight ● know the number of seconds in a minute and the number of days in each month, year and leap year ● compare durations of events [for example to calculate the time taken by particular events or tasks].
Measurement: Mass, Capacity and Temperature	Year 1: (weight and volume) ● 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] ● measure and begin to record the following:- mass/weight- capacity and volume Year 3: (mass, capacity) ● measure, compare, add and subtract:lengths (m/cm/mm);mass (kg/g); volume/capacity (l/ml

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Lower Key Stage 2

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Year Three

	Autumn	Spring	Summer
NC Links **Topic** **Number: Place Value**	● count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number ● recognise the place value of each digit in a three-digit number (hundreds, tens, ones) ● compare and order numbers up to 1000 identify, represent and estimate numbers using different representations ● read and write numbers up to 1000 in numerals and in words solve number problems and practical problems involving these ideas		
Number: Addition and Subtraction	• add and subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds ● add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction ● estimate the answer to a calculation and use inverse operations to check answers ● solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction		

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Number: Multiplication and Division	● recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables ● write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	● solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	
Measurement: Money			● add and subtract amounts of money to give change, using both £ and p in practical context
Statistics			● interpret and present data using bar charts, pictograms and tables ● solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables
Measurement: Length and Perimeter		● measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) ● measure the perimeter of simple 2-D shapes	
Number: Fractions		● count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 ● recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators	● recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] ● compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above
Measurement: Time			● tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks ● estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight ● know the number of seconds in a minute and the number of days in each month, year and leap year

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			● compare durations of events [for example to calculate the time taken by particular events or tasks].
Geometry: Properties of Shape			● draw 2-D shapes and make 3-D shapes using modelling materials ● recognise 3-D shapes in different orientations and describe them ● recognise angles as a property of shape or a description of a turn ● identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle ● identify horizontal and vertical lines and pairs of perpendicular and parallel lines
Measurement: Mass and Capacity		● measure, compare, add and subtract:lengths (m/cm/mm); mass (kg/g); volume/capacity (l/m	
Cross curricular Links	**Science, Geography, Computing, History, DT, Music, PE**	**Science, Geography, Computing, DT**	Science, History, PE DT

Curriculum Driver Links					
	Growing independence and perseverance. Gain confidence with time tables and fractions knowledge. Making more connections with division and multiplication facts.	Orienteering math enrichment activity outdoors.	Supporting peers in the classroom and sharing ideas respectfully.	Children develop and deepen their subject knowledge and understanding through talk in the classroom. This is planned, designed, modelled, scaffolded and structured to enable them to learn the skills needed to talk effectively.	Use Roman Numerals to record the date.

Vocabulary	'equal to =', 'less than <', 'greater than >', 'order', 'compare', 'place value 'hundreds, 'more', 'less', add', addition', 'subtract', 'subtraction', 'hundreds', 'tens', 'ones', 'left', 'left over', 'greater than', 'less than', 'fewer' and 'more' exchange', 'pattern', 'variation', 'total', 'altogether', 'regroup' and 'partition' place value',	division statement, whole, left over, and remainder. multiplication, division, greater than, less than, equal, remainder, share, partition, compare, equally, least, most, tens (10s), ones (1s), exchange, add, subtract, total, less, more, difference, convert, amount, cost, change, pounds (£), pence (p), bar chart', 'table' and 'pictogram': symbol,	Equivalent, fraction, whole number.) inequality, o'clock, a.m./p.m., morning, afternoon, noon and midnight leap year, midnight, midday, noon, morning, afternoon, evening, night, halfway, Roman numerals, digital, am, pm, 12-hour clock, 24-hour clock, stopwatch, start time, end time, January, February, March, April, May, June, July,

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	'approximate', 'estimate', 'fact family' and 'bar model', and discuss working, multiply, multiplication fact, times table, and array. divide,	altogether, most, least, compare, half way, smallest, between, order, largest, total, column, row, order, length, height, width, long, wide, perimeter, tall, high, ruler, longer, shorter, compare, convert, equivalent, equal, measure partition, split, share, group, combine, representing , 'metres', 'centimetres' and 'millimetres, fractions, denominator, numerator,	August, September, October, November, December, triangle, rectangle, and square horizontal, vertical, perpendicular, parallel, clockwise, and anti-clockwise quadrilateral, parallelogram, rhombus and trapezium, weight, weigh, kilograms (kg), estimate, measure, grams (g), compare, order mass', 'scale', 'interval' 'convert' measurement, scale, measure, interval, amount, order, convert, compare, estimate, more than (>), less than (<), equal to (=).) capacity', 'millilitres', 'litres' and 'equivalent
Number: Number and Place Value	Year 2: ● Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and nonstandard partitioning. ● Reason about the location of any two digit number in the linear number system, including identifying the previous and next multiple of 10. Year 4: ● Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. ● Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and nonstandard partitioning. ● Reason about the location of any four digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each. ● Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.		
Number: Addition and Subtraction	Year 2: ● Add and subtract across 10 ● Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?. ● Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two digit number. ● Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two digit numbers. Year 4: ● add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate ● estimate and use inverse operations to check answers to a calculation ● solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.		
Number: Multiplication and Division	Year 2: ● recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers ● calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs ● show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ● solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. Year 4: ● recall multiplication and division facts for multiplication tables up to 12 × 12 ● use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers ● recognise and use factor pairs and commutativity in mental calculations multiply two-digit and three-digit numbers by a one-digit number using formal written layout solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects		
Measurement: Money	Year 2: ● recognise and use symbols for pounds (£) and pence (p) ● combine amounts to make a particular value ● find different combinations of coins that equal the same amounts of money ● solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change Year 4:		

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	● estimate, compare and calculate different measures, including money in pounds and pence
Statistics	Year 2: ● interpret and construct simple pictograms, tally charts, block diagrams and simple tables ● ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ● ask and answer questions about totalling and comparing categorical data Year 4: ● interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ● solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs
Measurement: Length and Perimeter	Year 2: (length) ● choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm);mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels ● compare and order lengths, mass, volume/capacity and record the results using >, < and = Year 4: ● Convert between different units of measure [for example, kilometre to metre; hour to minute] ● measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
Number: Fractions	Year 2: ● recognise, find, name and write fractions 1/3 , 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity ● write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2 Year 4: ● recognise and show, using diagrams, families of common equivalent fractions ● count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. ● solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number ● add and subtract fractions with the same denominator ● recognise and write decimal equivalents of any number of tenths or hundredths ● solve simple measure and money problems involving fractions and decimals to two decimal places
Measurement: Time	Year 2: ● compare and sequence intervals of time ● tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times ● know the number of minutes in an hour and the number of hours in a day. Year 4: ● Convert between different units of measure [for example, kilometre to metre; hour to minute]
Geometry: Properties of Shape	Year 2: ● identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line ● identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces ● identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D and 3-D shapes and everyday objects Year 4: ● Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant. ● Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. ● Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.

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Measurement: Mass and Capacity	Year 2: ● 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 ruler ,scales, thermometers and measuring vessels ● compare and order lengths, mass, volume/capacity and record the results using >, < and = Year 4: Topic starts in Year 5

Year Four

	Autumn	**Spring**	**Summer**
NC Links **Number: Place Value**	• count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number ● count backwards through zero to include negative numbers ● recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) ● order and compare numbers beyond 1000 ● identify, represent and estimate numbers using different representations ● round any number to the nearest 10, 100 or 1000 ● solve number and practical problems that involve all of the above and with increasingly large positive numbers ● read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value		

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Number: Addition and Subtraction	● add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate ● estimate and use inverse operations to check answers to a calculation ● solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.		
Measurement: Length and Perimeter **Measurement: Area**	● find the area of rectilinear shapes by counting squares	● Convert between different units o measure [for example, kilometre to metre; hour to minute] ● measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	
Number: Multiplication and Division	● recall multiplication and division facts for multiplication tables up to 12 × 12 ● use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers	● recognise and use factor pairs and commutativity in mental calculations multiply two-digit and three-digit numbers by a one-digit number using formal written layout solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	
Number: Fractions		● recognise and show, using diagrams, families of common equivalent fractions ● count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. ● solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number ● add and subtract fractions with the same denominator ● recognise and write decimal equivalents of any number of tenths or hundredths ● solve simple measure and money problems involving fractions and decimals to two decimal places	
Number: Decimals		● recognise and write decimal equivalents of any number of tenths or hundredth ● recognise and write decimal equivalents to 1/4 , 1/2 , 3/4 find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths ● round decimals with one decimal place to the nearest whole number	● compare numbers with the same number of decimal places up to two decimal places ● solve simple measure and money problems involving fractions and decimals to two decimal places

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Measurement: Money			● estimate, compare and calculate different measures, including money in pounds and pence
Measurement: Time			● Convert between different units of measure [for example, kilometre to metre; hour to minute]
Statistics			● interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ● solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs
Geometry: Properties of Shapes **Geometry: Position and Direction**			● compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes ● identify acute and obtuse angles and compare and order angles up to two right angles by size ● identify lines of symmetry in 2-D shapes presented in different orientations ● complete a simple symmetric figure with respect to a specific line of symmetry . ● describe positions on a 2-D grid as coordinates in the first quadrant ● describe movements between positions as translations of a given unit to the left/right and up/down ● plot specified points and draw sides to complete a given polygon
Cross curricular Links	**Science Geography Computing History DT Music PE**	DT, Science	PE Science History Geography
Curriculum Driver Links					

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	Problem solver. Gain an understanding of decimals and confidence in using these. Fluent in all multiplication tables to 12.	Orienteering math enrichment activity outdoors.	Use time, shape and measure in swimming lessons.	Present and share ideas to peers. Explain how to find answers.	Use coordinate skills in map reading.
Vocabulary	ones, thousands, hundreds, tens, counting, compare, order, represent, more than, less than, recombine, partition, numerals rounding', 'round up' and 'round down, add, subtract, sum, total, difference, and exchange. : more than, less than, column method, altogether, strategy, story problem, place value, fact and digit.], width, total, distance, convert, equivalent, centimetre (cm) and metre (m).) kilometre', 'perimeter' and 'rectilinear shape', square, rectangle, length	Area, squared, ones (1s), tens (10s), hundreds (100s), zero (0), times, multiple, sharing, share, times, equal, total, divide, multiply (x), multiplication fact, division fact, lots of, grouping, groups of, times-table, array multiplication, multiply (x), divide (÷), division, group, remainder, share, left over, times-tables, equal, correspondence, combination, repeated addition, whole, one-step, two-step, multi-step, fraction, numerator, denominator, whole, part, fraction wall, fraction strip, simplify, simplest form, greater than (>), equal to, equivalent to, less than (<), tenth.) hundredths', 'improper fractions' and 'mixed numbers, 'regroup', 'partition', 'equivalent' and 'fractions', as well as 'tenths' and 'hundredths' columns integer, one more, one less, greater than (>), less than (<), regroup, partition, equivalent, fraction, tenths column and hundredths column. decimal point, decimal place,		tenth (0·1), hundredth (0·01), digit, whole number, ascending, fraction, equivalent, convert, number bond, rounding up, rounding down, place value, pounds (£), pence (p), notes, coins, change, cheaper, more expensive, rounding, nearest, estimate, over estimate, under estimate, greater than (>), less than (<), seconds, minute, hours, days, weeks, months, years, convert, equal to (=), compare, 12-hour, digital, units of time, analogue, 24-hour, am, pm, line graph', 'discrete data' and 'continuous data' table, bar chart, pictogram, key, compare, altogether, more than, less than, least, most, greatest, smallest, line graph, discrete data, continuous data, equilateral, scalene and isosceles angle translation coordinate quadrant right angle
Progression Number: Number and Place Value	Year 3: ● Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three digit multiples of 10. ● Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning ● Reason about the location of any three digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. ● Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. Year 5: ● Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. ● Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning. ● Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. ● Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts. ● Convert between units of measure, including using common decimals and fractions.				
Number: Addition and Subtraction	Year 3: ● Calculate complements to 100. ● Add and subtract up to three-digit numbers using columnar methods. ● Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction. Year 5: ● add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) ● add and subtract numbers mentally with increasingly large numbers ● use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy				

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	● solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Measurement: Length and Perimeter	Year 3: ● measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) ● measure the perimeter of simple 2-D shapes Year 5: ● convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ● measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ● calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes ● use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
Number: Multiplication and Division	Year 3: ● recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables ● write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods ● solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects Year 5: ● Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size. ● Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors. ● Multiply any whole number with up to 4 digits by any one-digit number using a formal written method. ● Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context
Number: Fractions	Year 3: ● count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one digit numbers or quantities by 10 ● recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators ● recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] ● compare and order unit fractions, and fractions with the same denominators, solve problems that involve all of the above. Year 5: ● Find non-unit fractions of quantities ● Find equivalent fractions and understand that they have the same value and the same position in the linear number system. ● Recall decimal fraction equivalents for 1/2, 1/4, 1/5 and 1/10 and for multiples of these proper fractions.
Number: Decimals	Year 3: Topic starts in Year 4 Year 5: ● read and write decimal numbers as fractions [for example, 0.71 = 100 71] ● recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents ● round decimals with two decimal places to the nearest whole number and to one decimal place ● read, write, order and compare numbers with up to three decimal places ● solve problems involving number up to three decimal places

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Measurement: Money	Year 3: ● add and subtract amounts of money to give change, using both £ and p in practical contexts Year 5: ● use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
Measurement: Time	Year 3: ● tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks ● estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight ● know the number of seconds in a minute and the number of days in each month, year and leap year compare durations of events [for example to calculate the time taken by particular events or tasks]. Year 5: ● solve problems involving converting between units of time.
Statistics	Year 3: ● interpret and present data using bar charts, pictograms and tables ● solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables Year 5: ● interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ● solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs
Geometry: Properties of Shapes Geometry: Position and Direction	Year 3: ● Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations. ● Draw polygons by joining marked points, and identify parallel and perpendicular sides Year 5: ● 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. ● identify 3-D shapes, including cubes and other cuboids, from 2-D representations ● know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles ● draw given angles, and measure them in degrees ● identify: angles at a point and one whole turn (total 360o) angles at a point on a straight line and 1/2 a turn (total 180o) other multiples of 90o ● use the properties of rectangles to deduce related facts and find missing lengths and angles ● distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

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Upper Key Stage 2

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

Year Five

	Autumn	Spring	Summer
NC Links **Number: Place Value**	● read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit ● count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 ● interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero ● round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 ● solve number problems and practical problems that involve all of the above ● read Roman numerals to 1000 (M) and recognise years written in Roman numerals.		
Number: Addition and Subtraction	● add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) ● add and subtract numbers mentally with increasingly large numbers ● use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy		

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	● solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.		
Statistics	● solve comparison, sum and difference problems using information presented in a line graph ● complete, read and interpret information in tables, including timetables.		
Number: Multiplication and Division	● identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers ● know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19	● multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers ● multiply and divide numbers mentally drawing upon known facts ● divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context ● multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 ● recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) ● solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes ● solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign ● solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	
Measurement: Perimeter and Area		● convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ● measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ● calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes	

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		● use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	
Number: Fractions	● compare and order fractions whose denominators are all multiples of the same number ● identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths ● recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 5 2 + 5 4 = 5 6 = 1 5 1 ● add and subtract fractions with the same denominator and denominators that are multiples of the same number ● multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	● add and subtract fractions with the same denominator and denominators that are multiples of the same number • Unit fractions • Non-unit fractions • Reasoning	
Number: Decimals and Percentages			● read and write decimal numbers as fractions [for example, 0.71 = 100 71] ● recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents ● round decimals with two decimal places to the nearest whole number and to one decimal place ● read, write, order and compare numbers with up to three decimal places ● solve problems involving number up to three decimal places ● recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal ● solve problems which require knowing percentage and decimal equivalents of 2 1 , 4 1 , 5 1 , 5 2 , 5 4 and those fractions with a denominator of a multiple of 10 or 25.
Number: negative numbers			• Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

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Geometry: Properties of Shape			● identify 3-D shapes, including cubes and other cuboids, from 2-D representations ● know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles ● draw given angles, and measure them in degrees ● identify: angles at a point and one whole turn (total 360o) angles at a point on a straight line and 1/2 a turn (total 180o) other multiples of 90o ● use the properties of rectangles to deduce related facts and find missing lengths and angles ● distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Geometry: Position and Direction			● identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.
Statistics		● interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ● solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	
Measurement: Converting Units			● convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ● understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints ● solve problems involving converting between units of time ● use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
Measurement: Volume			● estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
Cross curricular Links	**Science, Geography, History**		Geography Science Computing PE DT Art

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Curriculum Driver Links	Aspirational Learners	Adventurers & Explorers	Healthy Advocates	Clear Communicators	Global Citizens
	Develop a deeper understanding of the number system and calculate large sums.	Orienteering enrichment activity to be completed outdoors.		Communicate findings to the class. Use vocabulary regarding prime numbers.	
Vocabulary	ones (1s), tens (10s), hundreds (100s), thousands (1000s), place value, Roman numerals, partition, estimate, round up, round down, greater than (>), less than (<), ten thousands (10,000s), hundred thousand (100,000) positive negative rounding, sequence, rule, : add, subtract, ones (1s), tens (10s), hundreds (100s), thousands (1,000s), ten thousands (10,000s), hundred, thousands (100,000s), total, difference, inverse, round, mentally, estimate, line graph, dual line graph, horizontal axis, vertical axis, axes, scale, data, information, interpret, complete, table two-way table, square, and cube numbers multiple, factor, prime, composite, square, cube numbers multiply (x), multiplication fact, times, divide (¸), division, perimeter, area, centimetres (cm), metres (m), rectilinear shape, distance, measure, convert) scale formula square centimetre square metre	inverse operation, place value total, equal, place value, partition, digit, add, subtract, grid method, column method, represent, factor, multiple, multiply, divide, remainder, equivalent, numerator, denominator, mixed number, convert, sequence, order, multiply (×), multiple, divide (÷), dividend, factor, greater than (>), less than (<), equal to (=), divisor, quotient, expand proper/improper, fraction simplify, percent, percentage, tenths, hundredths, and thousandths. decimal, decimal place, fraction, place value, digits, and decimal point add, subtract, multiply, divide ones, tenths, hundredths, thousandths difference, group, share, compare, represent column, place value, exchange mass, weight, length, width, cost, height	angle, turn whole turn, half turn, quarter turn acute angle, right angle, obtuse angle, refl ex angle degrees (°) 90 degrees 180 degrees, 360 degrees interior angle protractor parallel perpendicular angle, interior angle grid regular, irregular polygon, quadrilateral 2D, 3D viewpoint, refl ection, translation mirror line coordinate, horizontal coordinate, vertical coordinate horizontal axis, vertical axis, line graph', 'discrete data' and 'continuous data' table, bar chart, pictogram, key, compare, altogether, more than, less than, least, most, greatest, smallest, line graph, discrete data, continuous data, mass, capacity, length, time, quantity metric units, gram, kilogram, millilitre, litre, millimetre, centimetre, metre, kilometre imperial units, ounce (oz), pound (lb), stone (st), pint (pt), gallon, inch (in), foot (f), yard (yd) second, minute, hour, day, week, month, year convert, equal to, equivalent, approximately, per, measure, remainder, multiple timetable, 24-hour, digital, duration, volume, capacity, solid, liquid, container cube, cuboid, triangular, prism 3D shapes, objects calculate, estimate, compare, count, accurately, order, amount, irregular, prediction, exact unit (cm) cubes, units of measurement, measure less, more, less than (<), more than (>), largest, smallest, least, greatest, equal space inside height, length, width, size, tall layer, slice multiple, total,
Progression **Number: Number and Place Value**	Year 4: ● Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100 ● Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning. ● Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each. ● Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts. ● Divide 100 and 1,000 into 2, 4, 5 and 10 equal parts. Find unit fractions of quantities using known division facts (multiplication tables fluency).				

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	● Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10 or 100) Year 6: ● Solve multiplication problems that have the scaling structure, such as 'ten times as long'. Understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal fraction ● Compare and order numbers, including those with up to 2 decimal places. Add and subtract using mental and formal written methods. ● Compare and order numbers, including those with up to 2 decimal places. Estimate and approximate to the nearest 1 or 0.1. ● Read scales on graphs and measuring instruments.
Number: Addition and Subtraction	Year 4: ● count in multiples of 6, 7, 9, 25 and 1000 ● find 1000 more or less than a given number ● count backwards through zero to include negative numbers ● recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) order and compare numbers beyond 100 ● identify, represent and estimate numbers using different representations ● round any number to the nearest 10, 100 or 1000 ● solve number and practical problems that involve all of the above and with increasingly large positive numbers read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. Year 6: ● Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number). ● Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. ● Solve problems with 2 unknowns ● Solve problems involving ratio relationships.
Statistics	Year 4: ● interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ● solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs Year 6 ● interpret and construct pie charts and line graphs and use these to solve problems ● calculate and interpret the mean as an average.
Number: Multiplication and Division	Year 4: ● Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. ● Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. ● Understand and apply the distributive property of multiplication. Year 6: ● solve problems involving addition, subtraction, multiplication and division ● use their knowledge of the order of operations to carry out calculations involving the four operations ● multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication ● divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context ● divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context ● perform mental calculations, including with mixed operations and large number
Measurement: Perimeter and Area	Year 4: ● Convert between different units of measure [for example, kilometre to metre; hour to minute] ● measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres ● find the area of rectilinear shapes by counting squares

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	Year 6: ● recognise that shapes with the same areas can have different perimeters and vice versa ● recognise when it is possible to use formulae for area and volume of shapes ● calculate the area of parallelograms and triangles ● calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].
Number: Fractions Number: Decimals and Percentages Number: negative numbers	Year 4 : ● Reason about the location of mixed numbers in the linear number system. ● Convert mixed numbers to improper fractions and vice versa ● Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers. Year 6: ● Recognise when fractions can be simplified, and use common factors to simplify fractions. ● Express fractions in a common denomination and use this to compare fractions that are similar in value. ● Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.
Geometry: Properties of Shape	Year 4 ● compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes ● identify acute and obtuse angles and compare and order angles up to two right angles by size ● identify lines of symmetry in 2-D shapes presented in different orientations ● complete a simple symmetric figure with respect to a specific line of symmetry. Year 6: ● draw 2-D shapes using given dimensions and angles ● recognise, describe and build simple 3-D shapes, including making nets ● compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons ● illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius ● recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
Geometry: Position and Direction	Year 4: ● describe positions on a 2-D grid as coordinates in the first quadrant ● describe movements between positions as translations of a given unit to the left/right and up/down ● plot specified points and draw sides to complete a given polygon Year 6: ● describe positions on the full coordinate grid (all four quadrants) ● draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
Statistics	Year 4: ● interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ● solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs Year 6: ● interpret and construct pie charts and line graphs and use these to solve problems ● calculate and interpret the mean as an average.

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Measurement: Converting Units Measurement: Volume	Year 4: ● Convert between different units of measure [for example, kilometre to metre; hour to minute] ● measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Year 6: ● calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]. ● solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate ● 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 three decimal places ● convert between miles and kilometres

Year Six

	Autumn	Spring	Summer
NC Links **Number: Place Value**	● read, write, order and compare numbers up to 10 000 000 and determine the value ● of each digit ● round any whole number to a required degree of accuracy ● use negative numbers in context, and calculate intervals across zero		
Number: Addition, Subtraction, Multiplication and Division	● multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication ● divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context ● divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context ● perform mental calculations, including with mixed operations and large number ● identify common factors, common multiples and prime numbers ● use their knowledge of the order of operations to carry out calculations involving the four operations ● solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why		

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	● solve problems involving addition, subtraction, multiplication and division ● use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.		
Number: Fractions	● use common factors to simplify fractions; use common multiples to express fractions in the same denomination ● compare and order fractions, including fractions > 1 ● add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions ● multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 4 1 × 2 1 = 8 1] ● divide proper fractions by whole numbers [for example, 3 1 ÷ 2 = 6 1] ● associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 8 3] ● recall and use equivalences between simple fractions, decimals and percentages, including in different contexts		
Geometry: Position and Direction Geometry: Properties of Shape			● describe positions on the full coordinate grid (all four quadrants) ● draw and translate simple shapes on the coordinate plane, and reflect them in the axes. ● draw 2-D shapes using given dimensions and angles ● recognise, describe and build simple 3-D shapes, including making nets ● compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons ● illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius ● recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

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Number: Decimals		● identify 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 ● multiply one-digit numbers with up to two decimal places by whole numbers ● use written division methods in cases where the answer has up to two decimal places ● solve problems which require answers to be rounded to specified degrees of accuracy ● recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	
Number: Percentages		● recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	
Number: Algebra		● use simple formulae generate and describe linear number sequences ● express missing number problems algebraically ● find pairs of numbers that satisfy an equation with two unknowns ● enumerate possibilities of combinations of two variables	
Measurement: Converting Units Measurement: Area, Perimeter and Volume	● solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate ● 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 three decimal places convert between miles and kilometres	● recognise that shapes with the same areas can have different perimeters and vice versa ● recognise when it is possible to use formulae for area and volume of shapes ● calculate the area of parallelograms and triangles ● calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].	

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Number: Ratio		● solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts ● solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison ● solve problems involving similar shapes where the scale factor is known or can be found ● solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.			
Statistics		● interpret and construct pie charts and line graphs and use these to solve problems ● calculate and interpret the mean as an average.			
Cross curricular Links	**Science Geography Computing History DT Music PE**	DT Science		DT Science Computing	
Curriculum Driver Links					
	Develop an understanding of ratio and algebra.	Orienteering enrichment activity to be completed outdoors.		Children work together to solve problems. Communicate findings to the class. Use vocabulary regarding algebra.	Prepare for secondary school and contribute to society.
Vocabulary	ones (1s), tens (10s), hundreds (100s), thousands (1,000s), ten thousands (10,000s), hundred thousands (100,000s), millions (1,000,000s), ten million (10,000,000) place value partition/partitioned/ partitioning interval estimate compare/comparison/comparing order/ordering less than (<), greater than (>), equal to (=) rounding/rounded/round, negative, positive odd, even accurate/accurately, exactly, approximate, remainder inverse grid method fraction, simplify, numerator, denominator, product, approximation , divide, division, short division, long division factor, multiple, divisor, dividend, whole, part numerator, denominator, common denominator equivalent simplify, simplest form factor, highest common factor, lowest common multiple,	hundredths, thousandths factor, multiple, product group, share numerator, denominator convert, simplify, equivalent divisor, dividend, quotient, remainder, per cent (%), percentage parts, whole decimal fraction, equivalent fraction, tenth, hundredth, half, quarter less than (<), greater than (>) divide (÷), share, multiply (×) convert, compare, order, simplify, pattern, growing pattern sequence rule term algebra, algebraic expression formula, formulae substitute generalise operation calculation, calculate equation inverse solution, perimeter, distance, area, space, volume centimetres (cm), metres (m), square centimetres (cm2), square metres (m2), cubic centimetres (cm3), cubic metres (m3) rectangle, square, triangle, rectilinear shape, sides, length, millimetres (mm), centimetres (cm), metres (m), kilometres (km), grams		equilateral, oblong, shape, irregular, hexagon, identical, similar, parallelogram perimeter, metre (m), distance, length, long horizontal, vertical halfway, line, properties, value, reason negative, positive translation, reflection, original, le , down, up, right, mirror, away, diagonal degrees, measurement, length angle, obtuse, acute, reflex, right angle, interior protractor, baseline, crosshairs, scale vertex, edge, face parallel properties triangle, isosceles, equilateral, scalene regular, polygon, quadrilateral, parallelogram, kite, rhombus, trapezium diameter, radius, circumference, concentric, centre perimeter pyramid, tetrahedron, cylinder, prism, cuboid, cube, average, mean, set, share pie chart, segment, whole, section, degree, angle, right angle tally chart, bar chart fraction, percentage	

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	compare order, ascending, descending less than, greater than proper fraction, improper fraction mixed number convert, plotting, coordinates, quadrant, point, axis, x-axis, y-axis, grid, x-coordinate, y-coordinate vertices, vertex	(g), kilograms (kg), millilitres (ml), litres (l) inches (in), feet ( ), ounces (oz), pounds (lbs), pints, miles, gallons, yards digits, decimal conversion table, conversion graph. metric, imperial, length, mass, volume, capacity, distance measure, convert, equal, equivalent, approximate, smaller (unit), larger (unit), for every, ratio, ratio, ratio notation, 1 : 2 proportion part, whole, total group fraction unequal, equal simplest form, simplify for every x there are y similar enlarge, enlargement scale, map scale, scale factor	line graph, axis/axes, estimate, accurate, interpret, increase, above, below, zero (0), value, x-axis, y-axis, minus (–), between, plot, point, vertical, horizontal, construct, convert/conversi on, straight, equivalent, predict, curve more, equal, even, size, total, share, great(er/est),
Progression **Number: Number and Place Value**	Year 5: ● read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit ● count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 ● interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero ● round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 ● solve number problems and practical problems that involve all of the above ● read Roman numerals to 1000 (M) and recognise years written in Roman numerals.		
Number: Addition, Subtraction, Multiplication and Division	Year 5: ● add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) ● add and subtract numbers mentally with increasingly large numbers ● use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy ● solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers ● know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 ● multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers ● multiply and divide numbers mentally drawing upon known facts ● divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context ● multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 ● recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) ● solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes ● solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign ● solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates		
Number: Fractions	Year 5: (fractions) ● compare and order fractions whose denominators are all multiples of the same number ● identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths ● recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 5 2 + 5 4 = 5 6 = 1 5 1 ● add and subtract fractions with the same denominator and denominators that are multiples of the same number ● multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams ● read and write decimal numbers as fractions [for example, 0.71 = 100 71] ● recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents ● recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal ● solve problems which require knowing percentage and decimal equivalents of 2 1 , 4 1 , 5 1 , 5 2 , 5 4 and those fractions with a denominator of a multiple of 10 or 25.		
Geometry: Position and Direction	Year 5: ● 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 . ● identify 3-D shapes, including cubes and other cuboids, from 2-D representations ● know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles		

Acre Hall Primary School- Maths Long Term Curriculum Plan

Geometry: Properties of Shape	● draw given angles, and measure them in degrees ● identify: angles at a point and one whole turn (total 360o) angles at a point on a straight line and 1/2 a turn (total 180o) other multiples of 90o ● use the properties of rectangles to deduce related facts and find missing lengths and angles ● distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Number: Decimals	Year 5: ● read and write decimal numbers as fractions [for example, 0.71 = 100 71] ● recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents ● round decimals with two decimal places to the nearest whole number and to one decimal place ● read, write, order and compare numbers with up to three decimal places ● solve problems involving number up to three decimal places ● solve problems which require knowing percentage and decimal equivalents of 2 1 , 4 1 , 5 1 , 5 2 , 5 4 and those fractions with a denominator of a multiple of 10 or 25.
Number: Percentages	Year 5: ● recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal ● solve problems which require knowing percentage and decimal equivalents of 2 1 , 4 1 , 5 1 , 5 2 , 5 4 and those fractions with a denominator of a multiple of 10 or 25.
Number: Algebra	Year 5: Topic starts in Year 6.
Measurement: Converting Units **Measurement: Area, Perimeter and Volume**	Year 5: ● convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ● measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ● calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes ● use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. ● convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ● understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints # ● solve problems involving converting between units of time ● use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. ● estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
Number: Ratio	Year 5: Topic starts in Year 6.
Statistics	Year 5: ● solve comparison, sum and difference problems using information presented in a line graph ● complete, read and interpret information in tables, including timetables.