

Our Maths Curriculum

Intention:

Our vision for maths is:

For all our pupils to acquire the confidence, skills, knowledge and understanding of number and associated mathematical concepts to live a fully numerate life either within their everyday life or for their future careers – *Learning to Live*

For all our pupils to have thirst for learning mathematical concepts and be able to ask questions and use their curious, inquisitive minds to seek answers to their own questions – *Living to Learn*



Implementation:

At Hartlip, we use the White Rose Maths Scheme, adapting it when necessary for the needs of our cohorts. Our curriculum provides a rich forum for the acquisition of mathematical vocabulary as well as the daily opportunities for systematic investigations and hands on problem-solving, both individually, in pairs and in groups. The use of manipulatives is key within our curriculum. Pupils have regular opportunities to engage in CPA – concrete, pictorial and abstract forms to support their learning progression. The concrete is not only a method of teaching but a method to model and evidence learning at greater depth and demonstrate and explain their reasoning to others.

Our Maths learning is supplemented by a variety of problem-solving and investigations using sites, such as NRich.

Every week, our pupils engage in an active day where maths is taught through physical activity, providing them with an opportunity for kinaesthetic learning, team working skills, peer support, communication and real-life problem solving.

To see what specific learning is covered and when, please refer to the 'Maths National Curriculum Progression' document.



Maths Curriculum Map

Terms:		Autumn: Our Locality		Spring: Our UK		Summer: Our World	
		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
'Learning to Live, Living to Learn' Concepts and Skills:		<ul style="list-style-type: none"> ➤ Our Christian School Vision ➤ Get Heartsmart ➤ Creativity ➤ Democracy 	<ul style="list-style-type: none"> ➤ People and community ➤ Friendship ➤ Too much selfie isn't healthy ➤ Empathy ➤ Founder's Day 	<ul style="list-style-type: none"> ➤ Resilience ➤ Trust ➤ Don't forget to let love in ➤ Rule of Law 	<ul style="list-style-type: none"> ➤ Forgiveness ➤ Problem-solving ➤ Don't hold on to what is wrong ➤ Tolerance 	<ul style="list-style-type: none"> ➤ Communication ➤ Environment ➤ Thankfulness ➤ Fake is a mistake ➤ Mutual Respect 	<ul style="list-style-type: none"> ➤ Peace ➤ No way through isn't true ➤ Thinking ➤ Individual Liberty ➤ World sporting events
Year	Cycle	Skills, knowledge and objectives					
Yr 1	A&B	Number: Place Value (within 10); Number: Addition & Subtraction (within 10); Geometry: Shape; Number: Place Value (within 20)		Consolidation; Number: Addition & Subtraction (within 20); Number: Place Value (within 20); Measurement: Length & Height; Weight & Volume; Consolidation		Consolidation; Number: Multiplication & Division; Number: Fractions; Geometry: Position & Direction; Number: Place Value (within 100); Measurement: Money; Time	
Yr 2	A&B	Number: Place Value; Number: Addition & Subtraction; Measurement: Money; Number: Multiplication & Division		Number: Multiplication & Division; Statistics: Geometry: Properties of Shape; Number: Fractions		Measurement: Length & Height; Geometry: Position & Direction; Consolidation & Problem-Solving; Measurement: Time; Mass, Capacity & Temperature	
Yr 3/4	A&B	Number: Place Value; Number: Addition & Subtraction; Number: Multiplication & Division		Number: Multiplication & Division; Measurement: Length, Perimeter & Area; Number: Fractions; Yr3 Measurement: Mass & Capacity, Yr4 Number: Decimals		Number: Decimals (Inc. Money); Measurement: Time; Statistics; Geometry: Properties of Shape (Inc. Yr4 Position & Direction)	
Yr 5/6	A&B	Number: Place Value; Number: Four Operations; Number: Fractions		Yr5 Number: Fractions, Yr6 Number: Ratio; Number: Decimals & Percentages; Yr5 Number: Decimals, Yr6 Number: Algebra; Measurement: Converting Units; Perimeter, Area & Volume; Statistics		Geometry: Properties of Shape; Geometry: Position & Direction; Yr6 SATS; Investigations;	

For objectives covered in each unit, refer to 'National Curriculum Progression' document.



Skills and Knowledge Progression Sequence

	Pre-requisite	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key Vocabulary	More than, fewer than, count, sides', 'corners'; 'straight', 'flat', 'round', under, in front, behind, on top	Forwards, Backwards Numeral, More, Less Fact, Number bond : circle, triangle, square, rectangle Length, Height Shorter, Quick, Slow	Fraction, Half 2D shape, 3D shape: cube, cuboid, pyramid, sphere, Longer, Taller Earlier, Later Empty, Full, Half-full O'clock, Half past	Compare, order, Greater than, less than, Place value, quantity, add, subtract, odd, even, Multiply, divide, array Third, quarter, 3-quarters, coins, change, straight, curved, NESW, left, right, Data, information, 2D shape: pentagon, hexagon, octagon, 3D shape: prism, cylinder	Word problem, tenth, denominator, inverse Volume, capacity, mass, equivalent fraction, 12 hour and 24 hour clocks, roman numerals, pictogram, chart, pound, pence, right-angle, full turn, half turn, quarter turn, cm, mm, m, g, kg, ml, l	Multiples, negative number, round, method, hundredth, decimal, whole number, sum, difference, bar chart, decimal place, convert, quadrilateral, symmetry, plot, polygon	Temperature, factor, multiple, cubed, squared, perimeter, area, degrees, interpret, timetable, percentage, numerator	Accuracy. Percentage, mean, average, coordinate, translate, formulae
Number: Place Value Counting, reading and writing numbers	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ Count objects, actions and sounds. ➤ Subitise. ➤ Link the number symbol (numeral) with its cardinal number value. ➤ Count beyond ten. <p>ELG:</p> <ul style="list-style-type: none"> ➤ Have a deep understanding of number to 10, including the composition of each number; 14 ➤ Subitise (recognise quantities without counting) up to 5 	<ul style="list-style-type: none"> ➤ I can count to and past 100, forwards and backwards starting from any number. ➤ I can count and read numbers to 100 in numerals. ➤ I can count and write numbers to 100 in numerals ➤ I can count in jumps of 2, 5 and 10s. ➤ I can read and write numbers from 1 to 20 in numbers ➤ I can read and write numbers from 1 to 20 in words 	<ul style="list-style-type: none"> ➤ I can count forward and backwards in jumps of 2, 3 and 5 from 0 and in 10s from any number ➤ I can find and show numbers using different equipment such as number lines and number squares. ➤ I can read and write numbers to 100 in numerals ➤ I can read and write numbers to 100 in words. ➤ I can recall the multiples of 10 below and above any 2 digit number. 	<ul style="list-style-type: none"> ➤ I can count from 0 in multiples of 4, 8, 50 and 100 and I can find 10 or 100 more or less than a given number. ➤ I can read and write numbers to 1000 in numerals ➤ I can read and write numbers to 1000 in words ➤ I can solve number and word problems. 	<ul style="list-style-type: none"> ➤ I can count in multiples of 6, 7, 9, 25 and 1000. ➤ I can count backwards through 0 to include negative numbers ➤ I can solve number and practical problems that involve large positive numbers. ➤ I can read Roman numerals to 100 and know that the number system has changed to include 0 and place value. 	<ul style="list-style-type: none"> ➤ I can read, write, order and compare numbers to at least 1,000,000 (one million) and say the value of each digit ➤ I can keep multiplying a number by 10 or 100 up to 1,000,000 and count back ➤ I can use negative numbers in context when looking at temperature or money; counting forwards and 	<ul style="list-style-type: none"> ➤ I can read, write, order and compare numbers to at least 10,000,000 (ten million) and say the value of each digit. ➤ I can round any number to a required degree of accuracy ➤ I can use negative numbers in context when looking at temperature or money; counting in jumps forwards and backwards through 0.



	<p>'finger numbers' up to 5. Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</p>	<p>➤ 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</p>	<p>➤ I can count in twos, fives and tens to solve problems</p>				<p>backwards through 0</p> <p>➤ I can read Roman numerals to 1000 and recognise years written in these.</p>
<p>Number: Place Value Comparing and Ordering</p>	<p>➤ 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'.</p>	<p>➤ Compare numbers. ➤ Understand the 'one more than/one less than' relationship between consecutive numbers. ➤ Explore the composition of numbers to 10</p> <p>ELG: ➤ Verbally count beyond 20, recognising the pattern of the counting system</p> <p>➤ Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity</p> <p>➤ Explore and represent</p>	<p>➤ I can identify one more and one less, given a starting number.</p> <p>➤ I can find and show numbers using objects and pictures including number lines and use: equal to, more than, less than (fewer), most, least.</p>	<p>➤ I can compare and order numbers from 0 to 100 using < > and =.</p>	<p>➤ I can compare and order numbers up to 1000.</p>	<p>➤ I can order and compare numbers beyond 1000</p> <p>➤ I can find 1000 more or less than a given number</p>	
<p>Number: Place Value Partitioning and place value</p>	<p>➤</p>	<p>➤ Verbally count beyond 20, recognising the pattern of the counting system</p> <p>➤ Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity</p> <p>➤ Explore and represent</p>	<p>➤ I can partition and combine numbers using apparatus if I need it.</p>	<p>➤ I can find the place value of each digit of a number with tens and units.</p> <p>➤ I can use place value and number facts to answer questions</p> <p>➤ I can partition two-digit numbers into different combinations of tens and ones using apparatus.</p>	<p>➤ I can recognise the place value of each digit of a number with hundreds, tens and units</p>	<p>➤ I can show an understanding of place value including decimals.</p>	



		patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.					
Number: Place Value Rounding and estimating					<ul style="list-style-type: none"> ➤ I can find, show and estimate numbers using objects and pictures. 	<ul style="list-style-type: none"> ➤ I can identify, represent and estimate numbers using different representations including measures. ➤ I can round numbers to the nearest 10, 100 or 1000. 	<ul style="list-style-type: none"> ➤ I can round numbers up to 1,000,000 to the nearest 10, 100, 1000, 10,000 or 100,000.
Number: Place Value Problem-Solving						<ul style="list-style-type: none"> ➤ 	<ul style="list-style-type: none"> ➤ I can solve number and practical problems that involve ordering and comparing numbers to 1 000 000, counting forwards or backwards in steps, negative numbers and rounding. I can solve number and practical problems that involve ordering and comparing numbers to 10 000 000, rounding to a required degree of accuracy, using negative numbers and calculating intervals across zero.
Number: Addition & Subtraction	<ul style="list-style-type: none"> ➤ Automatically recall number bonds for numbers 0–5 and some to 10. 	<ul style="list-style-type: none"> ➤ I can read and understand number statements using +, - and =. ➤ I can write number statements using +, - and =. ➤ I can change calculations to give the same answers, for example $3 + 2 = 5$ so $2 + 3 = 5$. 	<ul style="list-style-type: none"> ➤ I can solve problems with addition and subtraction including those involving numbers, quantities and measures by using objects or pictures. ➤ I can answer simple addition and subtraction 	<ul style="list-style-type: none"> ➤ I can add and subtract numbers in my head, including a three digit number and ones. ➤ I can add numbers with up to three digits using formal column methods. ➤ I can add and subtract numbers 	<ul style="list-style-type: none"> ➤ I can add numbers with up to four digits using formal column methods. ➤ I can use estimating and inverse operations to check my answers. ➤ I can subtract numbers with up to four digits using 	<ul style="list-style-type: none"> ➤ I can add and subtract numbers with more than 4 digits using written methods ➤ I can add and subtract 2- and 3-digit numbers in my head. ➤ I can use rounding to check answers to calculations and 	<ul style="list-style-type: none"> ➤ I can mentally calculate using a mix of the four operations. ➤ I can solve problems with more than one step and operation and explain why I used them. ➤ I can solve addition and subtraction



			<ul style="list-style-type: none"> ➤ I can show that addition is the opposite of subtraction, for example if $3 + 2 = 5$, then $5 - 2 = 3$ ➤ I can remember most of the number bonds for 10 and link the connected facts. ➤ I can use number bonds up to 20. ➤ I can use subtraction facts up to 20. ➤ I can add one digit and two digit numbers to 20. ➤ I can subtract one digit and two digit numbers to 20. ➤ I can answer problems that use addition and subtraction, including missing number problems, using objects and pictures. 	<p>questions in my head as well as by writing them down.</p> <ul style="list-style-type: none"> ➤ I can recall all number bonds to 10, use these to work out bonds to 20, and link other related facts. ➤ I can use addition and subtraction facts to 20 quickly and workout similar facts to 100. ➤ I can add and subtract a two digit number and a one digit number mentally and when using objects, number lines and pictures ➤ I can add and subtract a two digit number and tens mentally and when using objects, number lines and pictures. ➤ I can add and subtract 2 two digit numbers mentally and when using objects, number lines and pictures ➤ I can add and subtract 3 one digit numbers mentally and when using 	<p>in my head, including a three digit number and tens</p> <ul style="list-style-type: none"> ➤ I can subtract numbers with up to three digits using formal column methods. ➤ I can add and subtract numbers in my head, including a three digit number and hundreds ➤ I can estimate the answer to a calculation and use this and inverse operations to check answers. ➤ I can solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. 	<p>formal column methods.</p> <ul style="list-style-type: none"> ➤ I can solve two step addition and subtraction problems using different methods and explain why I used them 	<p>determine levels of accuracy</p> <ul style="list-style-type: none"> ➤ I can solve addition and subtraction problems needing more than one step and I can work out which operation and method is the most suitable 	<p>word and practical problems.</p> <ul style="list-style-type: none"> ➤ I can use estimation to check answers to calculations and determine an appropriate degree of accuracy
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				<p>objects, number lines and pictures.</p> <ul style="list-style-type: none"> ➤ I can show that adding 2 numbers I can be done in any order but subtraction I cannot. ➤ I can show that subtraction is the opposite of addition and use this to check my work ➤ I can remember doubles and halves up to 20 ➤ I can use estimation to check that my answers to a calculation make sense ➤ I can solve missing number problems using addition and subtraction. 				
<p>Number: Multiplication & Division</p>			<ul style="list-style-type: none"> ➤ I can answer multiplication questions using objects, pictures and other equipment. ➤ I can answer division questions using objects, pictures and other equipment. 	<ul style="list-style-type: none"> ➤ I can remember and use multiplication and division facts for the 2, 5- and 10-times tables and recognise odd and even numbers ➤ I can answer multiplication and division problems within the tables using \times, \div and $=$. ➤ I can show that multiplying 2 numbers I can be done in any order 	<ul style="list-style-type: none"> ➤ I can recall and use multiplication and division facts for the 3, 4- and 8-times tables. ➤ I can calculate multiplication and division problems, both mentally and in writing, using the times tables, including two-digit numbers times one-digit numbers ➤ I can solve problems, including missing number problems, involving 	<ul style="list-style-type: none"> ➤ I can recall times tables facts up to 12x12. ➤ I can use place value and number facts to multiply and divide mentally, including multiplying by 1 and 0; dividing by 1; and multiplying together 3 numbers. ➤ I can use factor pairs in mental calculations. ➤ I can multiply two digit and three-digit numbers by a one-digit number using a 	<ul style="list-style-type: none"> ➤ I can find multiples and factors of a number and I can identify factors common to 2 different numbers. ➤ I can use vocabulary relating to prime numbers, prime factors and composite numbers. ➤ I can work out if any given number up to 100 is a prime number and I can recall prime numbers up to 19 	<ul style="list-style-type: none"> ➤ I can multiply numbers of up to 4 digits by a two-digit number using a formal written method. ➤ I can divide numbers of up to 4 digits by a two-digit number using a formal written method of long division, showing remainders, fractions or rounding as appropriate



				<p>but division I cannot.</p> <ul style="list-style-type: none"> ➤ I can answer questions involving multiplication and division mentally and with objects. ➤ I can answer questions involving multiplication and division using arrays and repeated addition. ➤ I can use multiplication facts for 2, 5 and 10 to make deductions outside known multiplication facts. ➤ I can solve multiplication and division word problems with more than one step ➤ I can rewrite addition statements as simplified multiplication statements. 	<p>multiplication and division, including factors and ratio.</p>	<p>formal written method.</p> <ul style="list-style-type: none"> ➤ I can solve problems involving multiplication and addition, including the distributive law such as $3x(12+14) = 3x12+3x14$. 	<ul style="list-style-type: none"> ➤ I can multiply numbers with up to 4 digits by a one- or two-digit number using formal written methods. ➤ I can mentally multiply and divide numbers using the times tables ➤ I can divide numbers with up to 4 digits by a one-digit number using formal written methods and I can explain remainders ➤ I can multiply and divide whole and decimal numbers by 10, 100 and 1000 ➤ I can identify and use square numbers and their notation. ➤ I can solve problems involving multiplication and division including using factors and multiples, squares and cubes ➤ I can identify and use cube numbers and their notation. ➤ I can solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the 	<ul style="list-style-type: none"> ➤ I can divide numbers of up to 4 digits by a two-digit number using a formal written method of short division, showing remainders, fractions or rounding as appropriate ➤ I can mentally calculate using a mix of the four operations and increasingly large numbers. ➤ I can identify common factors, multiples and prime numbers. ➤ I can use the order of importance of the four operations when answering questions. ➤ I can solve addition and subtraction multi-step problems, deciding which operations and methods to use and explain why they were suitable. ➤ I can solve problems involving addition, subtraction, multiplication and division. ➤ I can use estimating to check answers and problem solving
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							meaning of the equals sign. ➤ I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	
Number: Fractions			➤ I can find and name 1/2 (half) of an object, shape or amount. ➤ I can find and name 1/4 (quarter) as one of four equal parts of an object, shape or amount.	➤ I can find, name and write fractions of a length, shape, set of objects or amount, including 1/3, 1/4, 2/4, and 3/4. ➤ I can write simple fractions facts such as $1/2$ of 6 = 3 and $2/4 = 1/2$.	➤ I can count up and down in tenths and know that tenths are made from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. ➤ I can write and find fractions of a set of data and I can recognise fractions with small denominators. ➤ I can find and use fractions of numbers such as $1/4$ of 8 = 2 and $3/4$ of 8 = 6 ➤ I can identify and show equivalent fractions ➤ I can add fractions with the same denominator within one whole. ➤ I can subtract fractions with the same denominator within one whole. ➤ I can compare and order fractions with	➤ I can recognise and show, using diagrams, families of common equivalent fractions. ➤ I can count up and down in hundredths and know that dividing an object by 100 creates hundredths and by 10 creates tenths. ➤ I can solve problems involving fractions to calculate quantities and fractions to divide quantities. ➤ I can add and subtract fractions with the same denominator. ➤ I can find and write decimal equivalents using tenths and hundredths. ➤ I can find and write decimal equivalents to $1/4$, $1/2$ and $3/4$	➤ I can compare and order fractions whose denominators are all multiples of the same number. ➤ I can find and name equivalent fractions of a given fraction including tenths and hundredths. ➤ I can write equivalent fractions of a given fraction including tenths and hundredths. ➤ I can identify mixed numbers and improper fractions and convert from one to another such as $2/5 + 4/5 = 6/5 = 1\ 1/6$. ➤ I can add and subtract fractions whose denominators are all multiples of the same number. ➤ I can multiply fractions by whole	➤ I can use common factors and multiples to simplify fractions and express fractions in the same denomination. ➤ I can compare and order fractions including those > 1. ➤ I can add and subtract fractions with different denominators and mixed numbers. ➤ I can multiply simple pairs of proper fractions, writing the answer in the simplest form such as $1/4 \times 1/2 = 1/8$. ➤ I can divide proper fractions by whole numbers such as $1/3 \div 2 = 1/6$. ➤ I can link a fraction with division and work out decimal fractions such as knowing that 7 divided by 21 is the same as $7/21$ and that this is equal to



					<p>the same denominator</p> <ul style="list-style-type: none"> ➤ I can solve fraction problems. ➤ I can write $1/10$ as 0.1 and $3/10$ as 0.3 	<ul style="list-style-type: none"> ➤ I can divide one- and two-digit numbers by 10 and 100 and I can explain the effect this has on place value. ➤ I can round decimals using tenths to the nearest whole number. ➤ I can compare numbers with the same number of decimal places up to two decimal places ➤ I can solve simple money and measure problems involving fractions and decimals to two decimal places 	<p>numbers using objects and pictures.</p> <ul style="list-style-type: none"> ➤ I can read and write decimal numbers as fractions such as $0.71 = 71/100$ ➤ I can identify and use thousandths and I can explain how they relate to tenths and hundredths and their decimal equivalents. ➤ I can round numbers with two decimal places ➤ I can read, write, order and compare numbers with up to three decimal places. ➤ I can solve problems involving numbers with up to three decimal places. ➤ I can identify the percent symbol % and how it relates to parts per hundred, hundredths and decimals. ➤ I can solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those fractions with a denominator of a 	<p>$1/3$, and 0.378 is $3/8$ as a simple fraction</p> <ul style="list-style-type: none"> ➤ I can explain the place value of any digit in a number with up to 3 decimal places and multiply or divide these by 10, 100 or 1000. ➤ I can multiply numbers less than 10 with up to 2 decimal places by whole numbers. ➤ I can use written division methods for numbers with up to two decimal places. ➤ I can solve problems which require answers to be rounded to specified degrees of accuracy. ➤ I can use equivalences between simple fractions, decimals and percentages to help me solve problems
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							multiple of 10 or 25.	
<p>Measurement: Mass, length, capacity/ volume, temperature</p>	<ul style="list-style-type: none"> ➤ Make comparisons between objects relating to size, length, weight and capacity. 	<ul style="list-style-type: none"> ➤ Compare length, weight and capacity 	<ul style="list-style-type: none"> ➤ I can solve problems for length and height by telling which objects are longer or shorter/ taller or shorter ➤ I can solve problems for mass and weights by telling which objects are heavier or lighter. ➤ I can solve problems for capacity and volume by telling if a container is empty, half full or full and if there is more in one container than another. ➤ I can measure weight or mass and write these measurements down. ➤ I can measure capacity or volume and write these measurements down 	<ul style="list-style-type: none"> ➤ I can choose the right units to measure length, height, mass, temperature or capacity. I can read to the nearest unit and do this on rulers or scales. ➤ I can compare amounts using these signs: >, < or =. ➤ I can read scales in divisions of ones, twos, fives and tens. ➤ I can read scales where not all numbers on the scale are given and work out points in between. 	<ul style="list-style-type: none"> ➤ I can measure, compare, add and subtract: lengths (m/cm and mm); mass (kg/g); volume and capacity (l/ml). 	<ul style="list-style-type: none"> ➤ I can convert different units of measurement. e.g. I can convert kilometres into metres or hours into minutes 	<ul style="list-style-type: none"> ➤ I can use all four operations to solve problems involving measure such as length, mass, volume, money, using decimal notation, including scaling. ➤ I can convert between different forms of metric measurement e.g. Kilometre and metre; centimetre and millimetre, gram and kilogram, Litre and millilitre ➤ I can understand and compare equivalences between metric units and common imperial units. These might include: inches, pounds or pints ➤ I can estimate volume by using 1cm³ blocks to build cuboids (including cubes) and capacity by using water and different containers. 	<ul style="list-style-type: none"> ➤ I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three places if I need to. ➤ I can use, read, write and convert between standard units. I can convert measurement of length, mass, volume and time from a smaller unit to a larger unit and vice versa. I can do this using decimal notation up to the three decimal places. ➤ I can convert between miles and kilometres. ➤ I can calculate, estimate and compare volumes of cubes and cuboids using standard units, including cubic centimetres (cm³), cubic metres (m³). I can extend this to other units e.g. mm³ and km³.
<p>Measurement: Telling time</p>			<ul style="list-style-type: none"> ➤ I can tell what the time is in hours and half past the hour. I can draw 	<ul style="list-style-type: none"> ➤ I can tell the time to 5 minutes. I can tell when it is quarter past or quarter to an 	<ul style="list-style-type: none"> ➤ I can tell the time on a clock face. I can do this if it uses the Roman 	<ul style="list-style-type: none"> ➤ I can read, write and compare time between analogue 	<ul style="list-style-type: none"> ➤ I can solve problems where I need to convert between units of time. 	



			<p>these on a clock face.</p> <ul style="list-style-type: none"> ➤ I can measure time in hours, seconds or minutes and write these measurements down. 	<p>hour. I can draw these on a clock.</p> <ul style="list-style-type: none"> ➤ I can read the time on a clock to the nearest quarter of an hour ➤ I can tell you how many minutes are in an hour and how many hours are in a day 	<p>numerals from I to XII and I can use 12-hour or 24 hour clocks</p> <ul style="list-style-type: none"> ➤ I can write the time on a clock face. I can do this if I use Roman numerals from I to XII and I can use 12-hour or 24 hour clocks. ➤ I can estimate and read the time to the nearest minute. I can record time in seconds, minutes and hours. I can use the words o'clock, a.m., p.m., morning, afternoon, noon and midnight 	<p>and digital 12-hour and 24-hour clocks.</p>		
<p>Measurement: Periods/passing of time</p>			<ul style="list-style-type: none"> ➤ I can talk about dates using the days of the week, weeks, months and years ➤ I can tell when things happened by using these words: before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening. ➤ I can solve problems for time. I can tell if something is quicker or slower. I can tell if something happened earlier or later. 	<ul style="list-style-type: none"> ➤ I can put different events in order and compare them. 	<ul style="list-style-type: none"> ➤ I can tell you the number of seconds in a minute and how many days there in a month, a year, and in a leap year. ➤ I can compare how much time is taken by different events or tasks. 	<ul style="list-style-type: none"> ➤ I can solve problems where I need to convert units of time such as hours to minutes, minutes to seconds, years to months or weeks to days. 		



<p>Measurement: Money</p>			<ul style="list-style-type: none"> ➤ I can tell how much different coins or notes are worth 	<ul style="list-style-type: none"> ➤ I can use the £ sign and p sign. I can use notes and coins to make a particular amount. ➤ I can find different ways for coins to add up to an amount. ➤ I can add and subtract money and give change. 	<ul style="list-style-type: none"> ➤ I can add and subtract money giving change, using pounds and pence. I can do this with real coins and notes. 	<ul style="list-style-type: none"> ➤ I can estimate, compare and calculate different measures, including money in pounds and pence. 		
<p>Measurement: Perimeter & Area</p>					<ul style="list-style-type: none"> ➤ I can measure the perimeter of simple 2-D shapes 	<ul style="list-style-type: none"> ➤ I can measure and calculate the perimeter of a rectilinear figure (Including squares) in centimetres and metres ➤ I can find the area of rectilinear shapes by counting squares. 	<ul style="list-style-type: none"> ➤ I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ➤ I can calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²), square metres (m²) and estimate the area of irregular shapes. 	<ul style="list-style-type: none"> ➤ I can recognise that shapes with the same areas I can have different perimeters and vice versa. ➤ I can calculate the areas of parallelograms and triangles ➤ I can recognise when it is possible to use formulae to find the areas or volumes of shapes.
<p>Geometry: Properties of shape</p>	<ul style="list-style-type: none"> ➤ Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language 	<ul style="list-style-type: none"> ➤ Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can ➤ Select, rotate and manipulate shapes 	<ul style="list-style-type: none"> ➤ I can recognise and name common 2-D shapes such as rectangles, squares, circles and triangles. ➤ I can recognise and name common 3-D shapes such as cuboids, cubes, 	<ul style="list-style-type: none"> ➤ I can notice and explain the properties of 2-D shapes e.g. the number of sides and line symmetry. ➤ I can notice and explain the properties of 3-D shapes e.g. the 	<ul style="list-style-type: none"> ➤ I can draw 2-D shapes and make 3-D shapes using modelling materials. ➤ I can recognise 3-D shapes in different orientations. I can recognise angles as properties of shape. 	<ul style="list-style-type: none"> ➤ I can compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes ➤ I can identify acute and obtuse angles. I can compare and 	<ul style="list-style-type: none"> ➤ I can identify 3-D shapes, including cubes and other cuboids, from 2-D representations ➤ I can estimate and compare acute, obtuse and reflex angles. I know that 	<ul style="list-style-type: none"> ➤ I can draw 2-D shapes using dimensions and angles I am given ➤ I can recognise, describe and build simple 3-D shapes, including making nets



	<p>language: 'sides', 'corners'; 'straight', 'flat', 'round'.</p> <ul style="list-style-type: none"> ➤ 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. 	<p>to develop spatial reasoning skills.</p>	<p>pyramids and spheres.</p>	<p>number of edges, vertices and faces.</p> <ul style="list-style-type: none"> ➤ I can name some 2-D and 3-D shapes in pictures or in a group and know some of their properties. ➤ I can spot 2-D shapes on the surface of 3-D shapes such as a circle on a cylinder and a triangle on a pyramid. ➤ I can compare and sort common 2-D and 3-D shapes and everyday objects 	<ul style="list-style-type: none"> ➤ I know that angles are a description of a turn ➤ I can spot right angles. I can spot when angles are greater or less than a right angle. ➤ I know that two right angles make a half-turn, three make three quarters of a turn and four make a full turn ➤ I can spot horizontal and vertical lines and pairs of perpendicular and parallel lines. 	<p>order angles up to two right angles by size.</p> <ul style="list-style-type: none"> ➤ I can identify lines of symmetry in 2-D shapes presented in different orientations. ➤ I can complete a simple symmetric figure with respect to a specific line of symmetry. ➤ I know what a straight angle is and that some angles are greater than this 	<p>angles are measured in degrees</p> <ul style="list-style-type: none"> ➤ I can draw given angles and measure them in degrees. ➤ I can identify angles at a point and one whole turn ➤ I can identify angles at a point on a straight line and 1/2 a turn (total 180°). ➤ I can identify other multiples of 90°. ➤ I can use the properties of rectangles to find related facts, missing lengths and missing angles ➤ I can tell the difference between regular and irregular polygons. I can do this using reasoning about equal sides and angles. 	<ul style="list-style-type: none"> ➤ I can compare and classify geometric shapes based on their properties and sizes. I can also find unknown angles in any triangles, quadrilaterals or regular polygons. ➤ I can illustrate and name parts of circles, including radius, diameter and circumference. I know that the diameter is twice the radius. ➤ I can recognise angles where they meet at a point, are on a straight line or are vertically opposite. I can then find any missing angles.
<p>Geometry: Position and Direction</p>	<ul style="list-style-type: none"> ➤ Understand position through words alone – for example, "The bag is under the table," – with no pointing. Describe a familiar route. Discuss routes and locations, 	<ul style="list-style-type: none"> ➤ Continue, copy and create repeating patterns. 	<ul style="list-style-type: none"> ➤ I can talk about whole, half, quarter and three quarter turns. I can then use this to explain movement, direction and position. 	<ul style="list-style-type: none"> ➤ I can order mathematical objects in patterns and sequences. ➤ I can use mathematical vocabulary to describe position, direction and movement. This could include movement in a straight line. 		<ul style="list-style-type: none"> ➤ I can plot positions on a 2-D grid as positive number of coordinates. ➤ I can describe movements between positions as translations of a given unit to the left/right and up/down. ➤ I can plot points I am given and draw 	<ul style="list-style-type: none"> ➤ I can identify, describe and represent the position of a shape following a reflection or translation. I can use mathematical vocabulary to explain this and I know that the shape has not changed. 	<ul style="list-style-type: none"> ➤ I can describe positions in all four quadrants on a full coordinate graph. ➤ I can draw and translate simple shapes on the coordinate plane and reflect these in the axis.



	using words like 'in front of' and 'behind'.					sides to complete a given polygon		
Statistics	<ul style="list-style-type: none"> ➤ 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...' 			<ul style="list-style-type: none"> ➤ I can read and draw simple pictograms, tally charts, block diagrams and simple tables. ➤ I can ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. ➤ I can ask and answer questions about totalling and comparing grouped data. 	<ul style="list-style-type: none"> ➤ I can interpret and present data using bar charts, pictograms and tables. ➤ I can solve one-step and two-step questions e.g. "How many more?" and "How many fewer?" using information presented in scaled bar charts, pictograms and tables. 	<ul style="list-style-type: none"> ➤ I can interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time charts. ➤ I can solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	<ul style="list-style-type: none"> ➤ I can solve comparison, sum and difference problems using information presented in a line graph. ➤ I can complete, read and interpret information in tables, including timetables. 	<ul style="list-style-type: none"> ➤ I can interpret and construct pie charts and line graphs. I can use these to solve problems ➤ I can calculate and interpret the mean as an average
Ratio and Proportion								<ul style="list-style-type: none"> ➤ I can solve problems that involve the relative sizes of two things where the missing number I can be found by multiplying or dividing by whole numbers. ➤ I can solve problems involving the calculation of



								<p>percentages. I can also use percentages for comparisons.</p> <ul style="list-style-type: none"> ➤ I can solve problems involving shapes where the scale factor is known or I can be found. ➤ I can solve problems involving unequal sharing and grouping. I can use my knowledge of fractions and multiples to do this
Algebra								<ul style="list-style-type: none"> ➤ I can use simple formulae. ➤ I can create and describe linear number sequences ➤ I can record missing number problems algebraically. ➤ I can find pairs of numbers which complete an equation with two unknowns. ➤ I can create a list of possibilities of the combination of two variables.

Bold statements are Key Stage End Points/Key Objectives