



CHAT Curriculum Map for Mathematics

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
NUMBER						
Number and place value	<ul style="list-style-type: none"> • Number formation • Counting to and across at least 100 • Count, read and write to 100 in numerals (inc counting in 2s, 5s and 10s) • One more and/or one less than a given number 	<ul style="list-style-type: none"> • Count in steps of 2,3,5 from 0. • Count in tense form any number forwards and backwards. • Recognise place value in 2 digit numbers H,T,U • Identify, represent and estimate numbers using different representations including a number line. • Compare and order numbers from 0-100 using $<$, $>$ and $=$. • Read and write numbers to 100 100 in numerals and in words. • Use place value and number 	<ul style="list-style-type: none"> • Count from 0 in multiples of 4, 8, 50 and 100. • Find 10 or a 100 more or less than a given number. • Recognise place value of HTU. • Compare and order numbers up to 1000. • Estimate numbers using different representations. • Read and write numbers up to 1000 in numerals and in words. • Solve number and practical problems involving these ideas. 	<ul style="list-style-type: none"> • Count in multiples of 6, 7, 9, 25 and 1000. • Find 1000 more or less of a given number. • Count backwards through zero to include negative numbers. • Recognise the place value of each digit in four digit in four-digit number (TH, H,T, U) • Order and compare numbers beyond 1000. • Identify, represent and estimate numbers using different representations. • Round any 	<ul style="list-style-type: none"> • Read, write, order and compare numbers to at least 100 000 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 	<ul style="list-style-type: none"> • 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. • Solve number and practical problems that involve all of the above.

		facts to solve problems.		<p>number to the nearest 10, 100 or 1000.</p> <ul style="list-style-type: none"> 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. 	<p>nearest 10, 100, 1000, 10 000 and 100 00.</p> <ul style="list-style-type: none"> 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. 	
Addition and subtraction	<ul style="list-style-type: none"> Mental recall of number bonds to at least 20 Read, write and interpret addition and subtraction sums to at least 20 Solve one-step problems that involve + and -, using concrete objects and pictorial representations and missing 	<ul style="list-style-type: none"> Mental recall of addition and subtraction facts fluently to 20. Derive and use related facts to 100. Add and subtract TU +U, TU+T TU+TU U+U+U using concrete objects, pictorial representations and mentally. Solve number problems with 	<ul style="list-style-type: none"> Add and subtract HTU + U, HTU+T and HTU+H mentally. Add and subtract up to 3 digits using formal written methods e.g. columns. Estimate the answer to a calculation and use the inverse operation to check answers. Solve problems 	<ul style="list-style-type: none"> 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 calculations. Solve addition 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.

	<p>number problems such as $7 = \square - 9$</p>	<p>addition and subtraction using concrete objects, pictorial representations.</p> <ul style="list-style-type: none"> • Solve quantity problems with addition and subtraction using concrete objects, pictorial representations • Solve measure problems with addition and subtraction using concrete objects, pictorial representations • Solve problems applying, increasing knowledge of mental and written methods. • Show that addition of two numbers can be commutative • Understand subtraction of one number to another is non-commutative • Recognise and use the inverse 	<p>including missing number problems using number facts, place value and more complex addition and subtraction.</p>	<p>and subtraction two-step problems in context, deciding which operations and methods to use and why.</p>	<p>calculations and determine, in the context of a problem, levels of accuracy.</p> <ul style="list-style-type: none"> • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. 	
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		<p>relationship between addition and subtraction.</p> <ul style="list-style-type: none"> To use inverse to check calculations. To use inverse to solve missing number problems. 				
Multiplication and division	<ul style="list-style-type: none"> Solve one-step problems involving \times and \div, by calculating the answer using concrete objects, pictorial representations and arrays 	<ul style="list-style-type: none"> Recall and use multiplication facts for 2,5 and 10 times tables including odd and even numbers. Recall and use division facts for 2,5 and 10 times tables, including odd and even numbers. Calculate and write mathematical statements using \times, \div and $=$ Show that multiplication of two numbers is commutative Show that division of two numbers is non- 	<ul style="list-style-type: none"> Recall and use multiplication and division for 3,4 and 8 times tables. Write multiplication stories for $T \times U$ for times tables they know progressing to formal written methods. Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in 	<ul style="list-style-type: none"> Recall multiplication and division facts for multiplication tables up to 12×12. Use place value, known and derived facts for multiplication 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- 	<ul style="list-style-type: none"> Identify multiples and factors, including all factor pairs of a number and common factors of two numbers. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is a prime and recall prime numbers up to 19. Multiply numbers too 4 digits by a one- or two-digit 	<ul style="list-style-type: none"> Multiply multi-digit numbers up to 4 digits by two-digit whole number using the formal written method of long multiplication. Divide numbers up to 4 digits by two-digit whole number using the formal written method of long division, and interpret remainders as a whole number remainders, fractions, or by rounding, as appropriate for the context. Divide numbers

		<p>commutative.</p> <ul style="list-style-type: none"> Solve problems using multiplication and division using materials arrays, repeated addition, mental methods and multiplication and division facts including problems in contexts. 	<p>which n objects are connected to m objects.</p>	<p>digit and three-digit numbers by a one-digit number using formal written layout.</p> <ul style="list-style-type: none"> Solve problems involving multiplying and adding, including using 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. 	<p>number using a formal written method, including long multiplication for two-digit numbers.</p> <ul style="list-style-type: none"> 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) 	<p>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.</p> <ul style="list-style-type: none"> Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and prime numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations.
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Fractions (inc. decimals and percentages)	<ul style="list-style-type: none"> • Recognise, find and name halves and quarters of objects, shapes and quantities 	<ul style="list-style-type: none"> • Recognise, find, name and write a third, a quarter, a half and three quarters of a 	<ul style="list-style-type: none"> • Count up and down in tenths; recognise that tenths arise from dividing an 	<ul style="list-style-type: none"> • Recognise and show, using diagrams, families of common 	<ul style="list-style-type: none"> • Compare and order fractions • Identify, name and write equivalent 	<ul style="list-style-type: none"> • Use common factors to simplify fractions; use common

	<ul style="list-style-type: none"> • Begin to add and subtract halves and quarters 	<p>length, shape, size of objects or a quantity.</p> <ul style="list-style-type: none"> • Write simple fractions of amounts e.g. half 6 equals 3 • Recognise the equivalence of two quarters and a half. 	<p>object into 10 equal parts and in dividing one digit numbers or quantities by 10.</p> <ul style="list-style-type: none"> • Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominations. • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominations. • Recognise and show, using diagrams, equivalent fractions with small denominators. • Add and subtract fractions with the same denominator within one whole. 	<p>equivalent fractions.</p> <ul style="list-style-type: none"> • 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 equivalent of any number of tenths or hundredths. • Recognise and 	<p>fractions of a given fraction, represented visually including tenths and hundredths.</p> <ul style="list-style-type: none"> • 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$] • 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 	<p>multiples to express fractions in the same denomination.</p> <ul style="list-style-type: none"> • 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, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] • Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] • Associate a fraction with division and calculate decimal equivalents [for example, 0.375]
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					<p>percentages as a fraction with denominator 100, and as a decimal.</p> <ul style="list-style-type: none"> Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25. 	<p>fractions, decimals and percentages, including in different contexts.</p>
Ratio and proportion				•	•	<ul style="list-style-type: none"> Solve problems involving the relative sizes of two quantities where missing values can be founded 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

						<p>of percentages for comparison.</p> <ul style="list-style-type: none"> • 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.
Algebra				•	•	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Measure, record, compare, 	<ul style="list-style-type: none"> • Choose and use appropriate 	<ul style="list-style-type: none"> • Measure, compare, add 	<ul style="list-style-type: none"> • Convert between different units of 	<ul style="list-style-type: none"> • Convert between different units of 	<ul style="list-style-type: none"> • Solve problems involving the

	<p>describe and solve problems involving length, mass, capacity and time</p> <ul style="list-style-type: none"> • Use vocabulary such as long/er, short/er, heavy, light, quick, slow, full and empty • Recognise and know the value of different denominations of coins and notes • Sequencing events in chronological order • Use vocabulary relating to dates • Tell the time to the hour and half past 	<p>standard units to estimate and measure length and height in any direction (m/cm); mass (kg/g); temperature (C°); capacity (l/ml) to the nearest appropriate unit using appropriate apparatus.</p> <ul style="list-style-type: none"> • Compare and order lengths, mass, volume capacity and record the results using <, > and +. • Recognise and use symbols, pounds and pence; combine amounts to make a particular value. • Find different combinations of coins that equal the same amount of money. • Solve simple problems 	<p>and subtract lengths, mass and volume.</p> <ul style="list-style-type: none"> • Measure the perimeter of simple 2D shapes. • Add and subtract amounts of money and give change. • Tell and write the time from an analogue clock. • Estimate and read time with increasing accuracy to the nearest minute. • Know the number of seconds in a minute, the number of days in each month, year and leap year. • Compare duration of events e.g. calculate the time taken by particular events or tasks. 	<p>measure (km to m,, hour to minute)</p> <ul style="list-style-type: none"> • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and meters. • Find the area of rectilinear shapes by counting squares. • Estimate, compare and calculate different measures, including money in pounds and pence. • Read, write and convert time between analogue and digital 12-24-hour clocks. • Solve problems involving converting from hours to minutes; minutes to seconds; years 	<p>metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <ul style="list-style-type: none"> • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. • 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 	<p>calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</p> <ul style="list-style-type: none"> • Use, read write and converting measurements of length, mass, volume and time from a smaller unit of measure to 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
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		<p>involving addition and subtraction of money of the same unit giving change.</p> <ul style="list-style-type: none"> • Compare and sequence intervals of time. • Tell and write the time to 5 mins and draw the hands on a clock face to show these times. • Know the number of minutes in a n hour and the number of hours in a day. 		<p>to months; weeks to days.</p>	<p>standards units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.</p> <ul style="list-style-type: none"> • Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes) and capacity [for example using water] • 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. 	<p>area of parallelograms and triangles.</p> <ul style="list-style-type: none"> • 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}.
GEOMETRY	<ul style="list-style-type: none"> • Recognise and name common 2D and 3D 	<ul style="list-style-type: none"> • Identify and describe the properties of 2D 	<ul style="list-style-type: none"> • Draw 2D shapes and make 3D shapes using 	<ul style="list-style-type: none"> • Compare and classify geometric 	<ul style="list-style-type: none"> • Identify 3-D Shapes including cubes and other 	<ul style="list-style-type: none"> • Draw 2-D shapes using given dimensions and

	<p>shapes</p> <ul style="list-style-type: none"> • Begin to use vocabulary such as side, edge, face, corner to describe the properties of 2D and 3D shapes • Describe position, direction and movement, including whole, half, quarter and three-quarter turns 	<p>shapes including sides and vertical lines of symmetry.</p> <ul style="list-style-type: none"> • Identify and describe the properties of 3D shapes including edges, vertices and faces. • Identify 2D shapes on the surface of 3D shapes. • Compare and sort common 2D and 3D 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 	<p>modelling materials.</p> <ul style="list-style-type: none"> • Recognise 3D shapes in different orientations and describe them. • Recognise angles as properties of shape or as a description of a turn. • Identify right angles and recognise that two right angles make half a turn. • Identify horizontal and vertical lines and parallel pairs of perpendicular and parallel lines. 	<p>shapes, including quadrilaterals and triangles, based on their properties and sizes.</p> <ul style="list-style-type: none"> • Identify acute, 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 	<p>cuboids, from 2D representations</p> <ul style="list-style-type: none"> • 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 (360°) -angles at a point on a straight line and a $\frac{1}{2}$ a turn (total 180°) - other multiples of 90° • 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 	<p>angles.</p> <ul style="list-style-type: none"> • 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. • Describe
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		distinguishing between rotation as a turn and in terms of right angles (clockwise, anticlockwise)		left/right and up/down. <ul style="list-style-type: none"> Plot specified points and draw sides to complete a given polygon. 	sides and angles.	positions on the full coordinate grid (all four quadrants) <ul style="list-style-type: none"> Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
STATISTICS		<ul style="list-style-type: none"> Interpret and construct pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions counting the number of objects in each category and sorting categories by quantity. Ask and answer questions about totalling and comparing categorical data. 	<ul style="list-style-type: none"> Interpret and present data using bar charts, pictograms and tables. Solve one step and two step questions. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables, including timetables. 	<ul style="list-style-type: none"> Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.