Christ Church CE (c) Primary School

# Maths Curriculum: Skills Progression

| | Reception | Year One | Year Two | Year Three | Year Four | Year Five | Year Six |
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| **Number and Place Value** | • Count objects, actions and sounds<br>• Link the number symbol (numeral) with its cardinal number value.<br>• Subitise.<br>• Verbally count beyond 20, recognising the pattern of the counting system (ELG)<br>• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity<br>• Explore and represent patterns within numbers up to 10, including evens and odds. (ELG)<br><br>**<u>CC - transition</u>**<br>• I can recognise numbers to 20.<br>• I can place numbers to 20 in order.<br>• I can begin to write numbers to 20. | • I can count to and across 100, forward and backward, beginning with 0 or 1, or from any given number.<br>• I can count in multiples of 2s, 5s and 10s<br>• I can count, read and write numbers to 100 in numerals<br>• I read and write numbers from 1 to 20 in numerals and words<br>• I can identify and order ordinal numbers<br>• I can identify and represent numbers using objects and pictorial representations including the number line<br>• I can use the language of: equal to, more than, less than (fewer), most, least<br>• I can recognise the place value (HTO) of 2-digit and 3-digit numbers.<br>• Given a number, I can identify one more or one less. | • I count in steps of 10, 2, 3, 4 and 5 from 0, and in tens from any number, forward and backward.<br>• I read and write numbers to at least 100 in numerals and in words.<br>• I recognise the place value of each digit in a 2-digit and 3-digit number (hundreds, tens, ones).<br>• I can identify and represent numbers using different representations, including the number line.<br>• I compare and order numbers from 0 up to 100; using < > and = signs.<br>• I use place value and numbers facts to solve problems. | • I can find 10 or 100 more, or less, than a given number.<br>• I read and write numbers to 1,000 in numerals and words.<br>• I recognise the place value of each digit in a three-digit number (hundreds, tens, ones)<br>• I count from 0 in multiples of 6, 4, 8, 50 and 100.<br>• identify, represent and estimate numbers using different representations<br>• | • I count in multiples of 7, 9, 11, 12, 25 and 1000.<br>• I compare and order numbers beyond 1000.<br>• I round any number to the nearest 10, 100 or 1000.<br>• I count backwards through zero to include negative numbers<br>• I find 1000 more or less than a given number.<br>• I can identify, represent and estimate numbers using different representations.<br>• I can solve number and practical problems that involve all of the above and with increasingly large positive numbers. | • I read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.<br>• I count forward or backwards in steps of powers of 10 for any given number up to 1,000,000.<br>• I count up and down in thousandths; recognise that thousandths arise from dividing an object into 1000 equal parts and in dividing numbers or quantities by 1000.<br>• I interpret negative numbers in context, count forwards and backwards with positive and negative numbers, including through zero.<br>• I round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 or 100000.<br>• I read Roman numerals to 1000 and recognise years written in Roman numerals.<br>• I can solve number problems and practical problems that involve all previously taught number content. | • I can read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.<br>• I can round any whole number to the required degree of accuracy.<br>• I can use negative numbers in context and calculate intervals across zero.<br>• I can solve number and practical problems involving place value, rounding and negative numbers.<br>•<br>I can perform mental calculations, including with mixed operations and large numbers.<br>• I can use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.<br>• I can identify the value of each digit in numbers given to three decimal places.<br>• I can multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.<br>• I can solve problems which require answers to be rounded to specified degrees of accuracy. |

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| **Addition and Subtraction** | • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity<br>• Automatically recall number bonds for numbers 0–5 and some to 10. (ELG)<br>• Explore and represent patterns within numbers up to 10<br><br>**CC transition**<br>• I can add and subtract by counting on or back to find the answer.<br>• Begin to make links between number bonds to 10 with number bonds to 20. | • I can read, write and interpret mathematical statements involving + - = signs.<br>• I can represent and use number bonds and related subtractions facts within 20.<br>• I can add and subtract 1-digit and 2-digit numbers to 20, including zero.<br>• I can solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.<br>• I can begin to use partitioning to add and subtract. | • I recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100.<br>• I add and subtract numbers using concrete objects, pictorial representation and mentally, including: 2-digit numbers and ones; 2-digit numbers and tens; two 2-digit numbers; adding three 1-digit numbers.<br>• I understand that addition of any two numbers can be done in any order (commutative) and subtraction of one number from another cannot.<br>• I recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.<br>• I can solve problems with addition and subtraction:<br>- using concrete objects and pictorial representation, including those involving numbers, quantities and measures<br>- applying their increasing knowledge of mental and written methods. | • I add and subtract numbers mentally, including: 3-digit number and ones; 3-digit numbers and tens; 3-digit numbers and hundreds.<br>• I add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction.<br>• I solve word problems including missing number problems, number facts, place value and more complex addition and subtraction.<br>• I estimate the answer to a calculation and use the inverse operations to check my answers.<br>• I add and subtract measures (length, mass and volume) with up to 3 digits, using formal written methods of columnar addition and subtraction. | • I add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction, where appropriate.<br>• I estimate and use inverse operations to check answers to a calculation<br>• I solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. | • I add and subtract numbers mentally with increasingly large numbers.<br>• I add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).<br>• I use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.<br>• I solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | • I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. |

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| **Multiplication and Division** | • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally (ELG)<br><br>**CC - transition**<br>• I can count in multiples of 10. | • I can group and share small quantities<br>• I can begin to recognise multiplication facts for the 10x table.<br>• I can make connections between arrays, number patterns, and counting in twos, fives<br>• I can begin to make links between counting in 2's and 5's and the related multiplication facts<br>• I can solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of my teacher. | • I recall and use multiplication and division facts for the 2, 3, 5 and 10 multiplication tables, including recognising odd and even numbers.<br>• I calculate mathematical statements for multiplication and division within the multiplication tables and write them using the x ÷ and = signs.<br>• I can solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and division facts, including problems in contexts.<br>• I understand and can show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.<br>• I recognise that division is the inverse of multiplication and use to check calculations. | • I recall and use the multiplication and division facts for the 3, 4, 6 and 8 tables.<br>• I write and calculate mathematical statements for multiplication using known multiplication tables, including 2-digit x 1-digit, using mental and progressing to formal written methods.<br>• I write and calculate mathematical statements for division using known multiplication tables, including 2-digit x 1-digit, using mental and progressing to formal written methods.<br>• I count up and down in tenths; recognise that tenths arise from dividing an object into ten equal parts and in dividing numbers or quantities by 10.<br>• I write and calculate mathematical statements for multiplication and division using known multiplication tables, including use of money and length<br>• I have developed efficient mental methods, for example, using commutativity and associativity.<br>• I can connect tenths to place value, decimal measures and to division by 10.<br>• I practise formal methods of multiplication and division, including a high focus on reasoning. | • I recall multiplication and division facts for tables up to 12x12.<br>• I recognise and use factor pairs and commutativity in mental calculations.<br>• I multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout.<br>• I use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1.<br>• I find the effect of multiplying a number with up to 2 decimal places by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.<br>• I divide 2-digit and 3-digit numbers by a 1-digit number using formal written layout with no remainder.<br>• I multiply three numbers together.<br>• I can solve problems involving multiplying and adding, including the use of the distributive law to multiply 2-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. | • I multiply and divide numbers mentally drawing upon known facts.<br>• I multiply numbers up to 4-digits by a 1-digit or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.<br>• I divide numbers up to 4-digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.<br>• I multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.<br>• I identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.<br>• I know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers and establish whether a number up to 100 is prime and recall prime numbers up to 19.<br>• I recognise and use square numbers and cube numbers, and the notation for squared2 and cubed3.<br>• I solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding | • I can multiply multi-digit numbers up to 4-digits by a 2-digit whole number using the formal written method of long multiplication.<br>• I can divide numbers up to 4-digits by a 2-digit number using the formal written method of short division, where appropriate, interpreting remainders according to the context.<br>• I can solve multiplication and division multi-step problems in contexts, deciding which operations and methods to use and why.<br>• I can identify common factors, common multiples and prime numbers.<br>• I can multiply one-digit numbers with up to two decimal places by whole numbers.<br>• I can use written division methods in cases where the answer has up to two decimal places. |

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| | | | | • I can solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. | | of the equals sign.<br>• I solve problems involving multiplication and division using knowledge of factors and multiples, squares and cubes.<br>• I solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates. | |
| **Fractions (in. decimals and percentages)** | **CC – transition**<br>• I can recognise that a half is two equal parts.<br>• I can share an amount into 2 equal parts using concrete objects. | • I can recognise, find and name a half as one of two equal parts of an object, shape or quantity.<br>• I can recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.<br>• I can find 'fractions of' discrete and continuous quantities by solving problems using shapes, objects and quantities. | • I recognise, find, name and write fractions 1/3, 1/4, 2/4, 1/2, 3/4 of a length or quantity.<br>• I write simple fractions and recognise the equivalence of 2/4 and 1/2. | • I recognise and show, using diagrams, equivalent fractions with small denominators.<br>• I recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.<br>• I compare and order unit fractions, and fractions with the same denominators.<br>• I add and subtract fractions with the same denominator within one whole.<br>• Pupils connect tenths to place value, decimal measures and to division by 10. | • I recognise and show, using diagrams, families of common equivalent fractions.<br>• I can make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities.<br>• I add and subtract fractions with the same denominator.<br>• I count up and down in hundredths; recognise that hundredths arise from dividing an object into one 100 equal parts and in dividing numbers or quantities by 100.<br>• I find the effect of dividing a 1-digit or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.<br>• I recognise and write decimals equivalents of any number of tenths or hundredths.<br>• I recognise and write decimal equivalents to ¼, | • I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents<br>• I read, write, order and compare numbers with up to three decimal places.<br>• I read and write decimal numbers as fractions, e.g. 0.71 = 71/100.<br>• I round decimals with two decimal places to the nearest whole number and to one decimal place.<br>• I identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.<br>• I can solve problems involving number up to 3 decimal places<br>• I recognise mixed numbers and improper fractions, convert from one form to the other and write mathematical statements.<br>• I compare and order fractions whose | • I can compare and order fractions, including fractions >1.<br>• I can use common factors to simplify fractions; use common multiples to express fractions in the same denomination.<br>• I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.<br>• I can multiply simple pairs of proper fractions, writing the answer in the simplest form.<br>• I can divide proper fractions by whole numbers.<br>• I associate a fraction with division to calculate decimal fraction equivalents, for simple fractions<br>• I can recall and use equivalences between simple fractions, decimals and percentages, including different contexts.<br>• I can solve problems |

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| | | | | | ½ and ¾.<br>• I compare numbers with the same number of decimal places up to two decimal places.<br>• I round decimals with one decimal place to the nearest whole number<br>• I compare numbers with the same number of decimal places up to two decimal places.<br>• I can solve problems including increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions and where the answer is a whole number. | denominators are all multiples of the same number.<br>• I can add and subtract fractions with the same denominator and denominators that are multiples of the same number<br>• I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams<br>• I recognise the percent 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.<br>• I can solve problems, which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and fractions with a denominator of a multiple of 10 or 25. | involving the calculation of percentages of whole numbers or measures such as 15% of 360 and the use of percentages for comparison. |

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| **Measures** | • Compare length, weight and capacity.<br><br>**CC – transition**<br>• Begin to use non-standard units to measure length and weight | • I can sequence events in chronological order using language (e.g. before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening).<br>• I can recognise and use language relating to dates, including days of the week, weeks, months, years.<br>• I can measure and begin to record the following: length and heights, mass/weight, capacity and volume.<br>• I can compare, describe and solve practical problems for: lengths and heights and mass/weight, capacity and volume.<br>• I can tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.<br>• I can compare, describe and solve practical problems for time.<br>• I can recognise and know the value of different denominations of coins and notes. | • I recognise and use symbols for pounds (£) and pence (p); combine amounts to make particular values.<br>• I find different combinations of coins that equal the same amounts of money.<br>• I solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.<br>• I tell and write the time to quarter past/to the hour and draw the hands on a clock face to show these times.<br>• I compare and sequence intervals of time.<br>• I compare and sequence intervals of time.<br>• I 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.<br>• I know the number of minutes in an hour and the number of hours in a day.<br>• I choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit, using rulers and scales.<br>• I compare and order lengths and record the results using >, < and =.<br>I choose and use | • I use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight.<br>• I know the numbers of seconds in a minute and the number of days in each month, year and leap year.<br>• I read 12-hour and 24-hour clocks.<br>• I record and compare time in terms of seconds, minutes, hours.<br>• I estimate and read time with increasing accuracy to the nearest minute; Tell and write the time from an analogue clock<br>• I compare durations of events, for example to calculate time taken by particular events or tasks.<br>• I estimate and read time with increasing accuracy to the nearest minute; Tell and write the time from an analogue clock, including using Roman numerals from I to XII.<br>• I measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/ capacity (l/ml).<br>• I measure the perimeter of simple 2D shapes. | • I read, write and convert time between analogue and digital 12- and 24-hour clocks.<br>• I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days<br>• I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days<br>• I measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m.<br>• I convert between different units of measure (e.g. km to m; hr to min).<br>• I can estimate, compare and calculate different measures, including money in pounds and pence<br>• I find the area of rectilinear shapes by counting squares. | • I measure and calculate the perimeter of composite rectilinear shapes in cm and m.<br>• I 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.<br>I estimate volume (e.g. using 1 cm3 blocks to build cuboids, including cubes) and capacity (e.g. using water).<br>• I convert between different units of metric measure (e.g. km/m; cm/m; cm/mm; g/kg; l/ml).<br>• I solve problems involving converting between units of time.<br>• I understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.<br>• Use all four operations to solve problems involving measure using decimal notation including scaling. | • I 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 three decimal places<br>• I can solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate.<br>• I can convert between miles and km.<br>• I can recognise that shapes with the same areas can have different perimeters and vice versa.<br>• I can calculate the area of parallelograms and triangles.<br>• I can calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3 and m3, and extending to other units such as mm3 and km3.<br>• I can recognise when it is possible to use formulae for area and volume of shapes. |

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| | | | appropriate standard units to estimate and measure: mass (kg/g); temperature (°C); capacity (l/ml) to the nearest appropriate unit, using thermometers and measuring vessels.<br>• I compare and order mass/volume/capacity and record the results using >, < and =. | | | | |
| **Geometry** | • Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can<br>• Select, rotate and manipulate shapes to develop spatial reasoning skills<br>• Continue, copy and create repeating patterns<br><br>**<u>CC – transition</u>**<br>• I can recognise and name common 2D and 3D shapes | • I can recognise and name common 2D shapes, including squares, circles and triangles.<br>• I can describe position, direction and movement, including half, quarter and three-quarter turns.<br>• I can recognise and name common 3D shapes, including: cuboids, cubes, pyramids and spheres | • I identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.<br>• I compare and sort common 2D and 3D shapes and everyday objects.<br>• I order and arrange combinations of mathematical objects in patterns and sequences.<br>• I identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.<br>• I identify 2D shapes on the surface of 3D shapes.<br>• I use mathematical vocabulary to describe position, direction and movement, including movement in a straight | • I make 3D shapes using modelling materials; recognise 3D shapes in different orientations; and describe them.<br>• I draw 2D shapes.<br>• I identify horizontal and vertical lines and pairs of perpendicular and parallel lines.<br>• I recognise angles are a property of shape or a description of a turn.<br>• I identify right angles, recognise that two right angles make a half-turn, three make three quarters and four a complete turn<br>• I identify whether angles are greater than or less than a right angle. | • I compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.<br>• I identify lines of symmetry in 2D shapes presented in different orientations.<br>• I complete a simple symmetric figure with respect to a specific line of symmetry.<br>• I describe positions on a 2D grid as coordinates in the first quadrant.<br>• I describe movements between positions as translations of a given unit to the left/right and up/down.<br>• I plot specified points and draw sides to complete a given polygon. | • I know angles are measured in degrees;<br>• I estimate and compare acute, obtuse and reflex angles.<br>• I identify angles at a point on a straight line and ½ a turn (total 180$^{o}$); and I identify angles at a point and one whole turn (total 360$^{o}$); I identify other multiples of 90$^{o}$;<br>• I draw given angles, and measure them in degrees.<br><br>I identify 3D shapes, including cubes and other cuboids, from 2D representations.<br>• I use the properties of rectangles to deduce related facts and find missing lengths and | • I can describe positions on the full coordinate grid, (all four quadrants).<br>• I can draw and translate simple shapes on the coordinate plane, and reflect them in the axes.<br>• I can compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.<br>• I can draw 2D shapes using given dimensions and angles<br>• I can 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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| | | | line distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). | | • I identify acute and obtuse angles, and compare and order angles up to two right angles by size.<br>• I compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. | angles.<br>• I distinguish between regular and irregular polygons based on reasoning about equal sides and angles.<br>• I 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. | • I can illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.<br>• I can recognise, describe and build simple 3D shapes, including making nets. |
| **Statistics** | | | • I interpret and construct: pictograms; tally charts; block diagrams and simple tables.<br>• I ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.<br>• I ask and answer questions about totalling and compare categorical data | • I interpret and present data using: bar charts; pictograms and tables.<br>• I solve 1-step and 2-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts, pictograms and other graphs. | • I interpret and present discrete and continuous data using appropriate graphical methods, including: bar charts and time graphs.<br>• I solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | • I complete, read and interpret information in: tables, including timetables<br>• I solve comparison, addition and difference problems using information presented in a line graph. | • I can interpret and construct pie charts and line graphs and use these to solve problems.<br>• I can calculate and interpret the mean as an average. |