Chelmondiston C of E Primary School

Big Ideas Progression in Mathematics

St Edmundsbury and Ipswich Diocesan Multi Academy Trust

Subject Intent: Each child will develop a deep understanding of Maths, equipping them with the skills of calculation, reasoning and problem-solving that they need in life.

Big Ideas: Fluency, Reasoning and Problem-Solving

Progression	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Statements from EYFS document and National Curriculum	**Number and place value** • Have a deep understanding of number to 10, including the composition of each number. (ELG) • Subitise (recognise quantities without counting) up to 5. (ELG) • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. (ELG) • Verbally count beyond 20, recognising the pattern of the counting system. **Addition and Subtraction** • Automatically recall (without reference to rhymes, counting	**Number and place value** • Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. • Count and read numbers to 100 in numerals. • Count and write numbers to 100 in numerals. • Count in multiples of twos, fives and tens from 0. • Identify one more or less than a given number. **Addition and Subtraction** • Represent and use number bonds within 20. • Represent and use subtraction facts within 20. **Fractions** • Recognise, find and name half as one of two equal	**Number and place value** • Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward. • Compare and order numbers from 0 up to 100; use <, > and = signs. • Use place value and number facts to solve problems. **Addition and Subtraction** • Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. • Solve problems using addition and subtraction	**Number and place value** • Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). • Solve number problems and practical problems involving these ideas. **Addition and Subtraction** • Add and subtract numbers mentally, including a three-digit number and ones. • Add and subtract numbers mentally, including a three-	**Number and place value** • Count in multiples of 6, 7, 9, 25 and 1000. • Count backwards through zero to include negative numbers. • Order and compare numbers beyond 1000. • Round any number to the nearest 10, 100 or 1000. **Addition and Subtraction** • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. **Multiplication and Division** • Recall multiplication and division facts	**Number and place value** • Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit. Find the difference between the largest and smallest whole numbers that can be made from using three digits. • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. **Addition and Subtraction** • Add and subtract whole numbers with more than 4 digits, including using	**Number and place value** • Round any whole number to a required degree of accuracy. • Use negative numbers in context, and calculate intervals across zero. **Addition and Subtraction** • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. **Multiplication and Division** • Multiply multi-digit numbers up

	or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. (ELG) **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) **Measurement** • Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. **Properties of shape** • Recognise, create and describe patterns. • Explore characteristics of everyday objects and shapes and use mathematical language to describe them.	parts of an object, shape or quantity. **Measurement** • Compare, describe and solve practical problems for lengths and heights. • Compare, describe and solve practical problems for weights. • Compare, describe and solve practical problems capacity and volume. • Compare, describe and solve practical problems for time. • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. **Properties of shape** • Recognise and name common 2D shapes. • Recognise and name common 3D shapes.	applying his/her increasing knowledge of written and mental methods where regrouping may be required. • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. **Multiplication and Division** • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. • Solve problems involving multiplication and division, using concrete materials and mental methods. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and	digit number and tens. • Add and subtract numbers mentally, including a three-digit number and hundreds. **Multiplication and Division** • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication table. • Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. **Fractions** • Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in	for multiplication tables up to 12 × 12. **Fractions** • Recognise and show, using diagrams, families of common equivalent fractions. • Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. • Round decimals with one decimal place to the nearest whole number. • Solve simple measure and money problems involving fractions and decimals to two decimal places. **Measurement** • Convert between different units of measure [for example, kilometre to metre; hour to minute].	formal written methods (columnar addition and subtraction). • Add and subtract numbers mentally with increasingly large numbers. • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. **Multiplication and Division** • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • Solve problems involving multiplication and division including their knowledge of factors and multiples, squares and cubes. • Solve problems involving	to 4 digits by a two-digit whole number using the formal written method of long multiplication. • Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. **Fractions** • Use written division methods in cases where the answer has up to two decimal places. • Solve problems which require answers to be rounded to

			division facts, including problems in contexts. **Fractions** • Recognise, find, name and write fractions 1/3 1/4 2/4 and 3/4 of a length, shape, set of objects or quantity and demonstrate understanding that all parts must be equal parts of the whole. **Measurement** • Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. **Properties of shape** • Compare and sort common 2-D and 3-D shapes and everyday objects describing similarities and differences. **Position and direction** • Use mathematical vocabulary to describe position, direction and	dividing one-digit numbers or quantities by 10. • Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. • Recognise and show, using diagrams, equivalent fractions with small denominators. **Measurement** • Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). • Add and subtract amounts of money to give change, using both £ and p in practical contexts. • Tell the time from an analogue clock, including using Roman numerals from I to XII, and 12-	**Properties of shape** • Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. • Identify lines of symmetry in 2-D shapes presented in different orientations. **Position and direction** • Plot specified points and draw sides to complete a given polygon. **Statistics** • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	multiplication and division, including scaling by simple fractions and problems involving simple rates. **Fractions** • Compare and order fractions whose denominators are all multiples of the same number. • Read and write decimal numbers as fractions [for example, 0.71 = 71/10]. • Read, write, order and compare numbers with up to three decimal places. • Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25. **Measurement**	specified degrees of accuracy. • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. **Measurement** • Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. **Properties of shape** • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. **Position and direction** • Draw and translate simple shapes on the

			movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). **Statistics** • Ask and answer questions about totalling and comparing categorical data.	hour and 24-hour clocks. • Write the time using an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. **Properties of shape** • Identify right angles and identify whether angles are greater or less than a right angle. • Recognise that two right turns make a half turn, three make three quarters and four a complete turn. **Statistics** • Interpret and present data using bar charts, pictograms and tables.		• Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. • Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes. **Properties of shape** • Draw given angles, and	coordinate plane, and reflect them in the axes. **Statistics** • Interpret and construct pie charts and line graphs and use these to solve problems. • Calculate and interpret the mean as an average. **Ratio and proportion** • Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. **Algebra** • Use simple formulae e.g. perimeter of a rectangle or area of a triangle.

						measure them in degrees (o). • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. **Statistics** • Complete, read and interpret information in tables, including timetables.	