

St. Luke's C of E (Aided) Primary School



Mathematics Progression in Knowledge 2022-2023

SEPTEMBER 2022

Progression in Knowledge and Applied Skills from Foundation Stage 2 to Year 6

	Foundation Stage 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value:	<p>To know how to match and sort objects.</p> <p>To know how compare amounts.</p> <p>To know and explore patterns.</p> <p>To know how to represent 1, 2 and 3.</p> <p>To know how to compare 1, 2 and 3.</p> <p>To know the composition of 1, 2 and 3.</p> <p>To know and represent numbers to 5.</p> <p>To know and represent one more or less.</p> <p>To know and understand zero.</p> <p>To know and compare numbers to 5.</p> <p>To know the composition of 4 and 5.</p> <p>To know and represent 6, 7 and 8.</p> <p>To know how to make pairs.</p> <p>To know how to count to 9 and 10.</p> <p>To know how to compare numbers to 10.</p> <p>To know how to count patterns beyond 10.</p> <p>To know odd and even.</p>	<p>Within 10:</p> <p>To know how to sort objects.</p> <p>To know how to count objects.</p> <p>To know how to represent objects.</p> <p>To know how to represent numbers to 10.</p> <p>To know how to count forwards.</p> <p>To know how to count backwards.</p> <p>To know how to count one more.</p> <p>To know how to count one less.</p> <p>To know how to create groups that are one to one.</p> <p>To know how to compare objects.</p> <p>To know less than, greater than and equal to.</p> <p>To know how to compare numbers.</p> <p>To know how to order objects.</p> <p>To know how to order numbers.</p> <p>To know the ordinal numbers.</p> <p>To know how to use a number line.</p> <p>Within 20:</p> <p>To know the numbers 11 to 20.</p> <p>To know tens and ones.</p> <p>To know how to count one more or one less.</p> <p>To know how to compare groups of objects.</p> <p>To know how to compare numbers.</p> <p>To know how to order groups of objects.</p>	<p>To know how to count objects to 100.</p> <p>To know how to read and write numbers in numerals and words.</p> <p>To know how to represent numbers to 100.</p> <p>To know tens and ones using a part-whole model.</p> <p>To know how to add tens and ones.</p> <p>To know how to use a place value chart.</p> <p>To know how to compare objects.</p> <p>To know how to compare numbers</p> <p>To know how to order objects and numbers.</p> <p>To know how to count in 2s, 5s and 10s.</p> <p>To know how to count in 3s.</p>	<p>To know hundreds.</p> <p>To know numbers to 1000.</p> <p>To know hundreds, tens and ones.</p> <p>To know how to use a number line to 1,000.</p> <p>To know how to find 1, 10 and 100 more or less.</p> <p>To know how to compare objects.</p> <p>To know how to compare numbers.</p> <p>To know how to order numbers.</p> <p>To know how to count in 50s.</p>	<p>To know how to round to the nearest 10.</p> <p>To know how to round to the nearest 100.</p> <p>To know how to count in 1,000s.</p> <p>To know thousands, hundreds, tens and ones.</p> <p>To know how to partition.</p> <p>To know how to use a number line to 10,000.</p> <p>To know how to find 1,000 more or less.</p> <p>To know how to compare 4-digit numbers.</p> <p>To know how to order numbers.</p> <p>To know how to round to the nearest 1,000.</p> <p>To know how to count in 25s.</p> <p>To know negative numbers.</p> <p>To know Roman numerals.</p>	<p>To know numbers to 10,000.</p> <p>To know how to round to the nearest 10, 100 and 1,000.</p> <p>To know numbers to 100,000.</p> <p>To know how to round numbers within 100,000.</p> <p>To know how to count in 10s, 100s, 1,000s, 10,000s and 100,000s.</p> <p>To know how to compare and order numbers to one million.</p> <p>To know negative numbers.</p> <p>To know Roman numerals.</p>	<p>To know numbers to 1,000,000.</p> <p>To know numbers to 10,000,000.</p> <p>To know how to read and write numbers to 10,000,000.</p> <p>To know the powers of 10.</p> <p>To know how to place numbers up to 10,000,000 on a number line.</p> <p>To know how to compare and order integers.</p> <p>To know how to round any integer.</p> <p>To know and identify negative numbers.</p>

		<p>To know how to order numbers.</p> <p>Within 50: To know numbers to 50. To know how to count forwards and backwards within 50. To know tens and ones. To know how to represent numbers to 50. To know how to find one more and one less. To know how to compare objects with 50. To know how to order numbers with 50. To know how to count in 2s. To know how to count in 5s.</p> <p>Within 100: To know how to count to 100. To know how to count forwards and backwards within 100. To know how to partition numbers. To know how to compare numbers. To know how to order numbers. To know how to find one more and one less.</p>					
Addition and	To know how to combine	Within 10:	To know fact families to	To know how to add and	To know how to add and	To know how to add	To know how to add and

Subtraction	<p>two amounts. To know number bonds to 10. To know how to build number bonds beyond 10. To know how to add. To know how take away.</p>	<p>To know parts and wholes. To know how to use the part whole model. To know the addition symbol. To know addition fact families. To know number bonds within 10. To know number bonds to 10. To know how to compare number bonds. To know how to add. To know how to find a part. To know how to subtract. To know fact families. To know how to compare addition and subtraction statements.</p> <p>Within 20: To know how to add by counting on. To know how to add ones using number bonds. To know how to find and make number bonds. To know how to add by making 10. To know how to subtract. To know related facts. To know how to compare number sentences.</p>	<p>20. To know how to check calculations. To know how to compare number sentences. To know number bonds to 20. To know related facts. To know number bonds to 100. To know how to add and subtract ones. To know how to find 10 more and 10 less. To know how to add and subtract 10s. To know how to add by making 10. To know how to add a 2-digit and 1-digit number. To know how to subtract a 1-digit number from a 2-digit number. To know how to add two 2-digit numbers. To know how to subtract a 2-digit number from a 2-digit number. To know number bond to 100. To know how to add three 1-digit numbers.</p>	<p>subtract multiples of 100. To know how to add and subtract 3-digit and 1-digit numbers. To know how to add 3-digit and 1-digit numbers. To know how to subtract a 1-digit number from 3-digit numbers. To know how to add and subtract 3-digit and 2-digit numbers. To know how to add 3-digit and 2-digit numbers. To know how to subtract a 2-digit number from 3-digit numbers. To know how to add and subtract 100s. To know how to spot a patten. To know how to solve addition and subtraction problems. To know how to add two 3-digit numbers. To know how to subtract a 3-digit number from a 3-digit number. To know how to estimate answers. To know how to check answers.</p>	<p>subtract 1s, 10s, 100s and 1,000s. To know how to add two 4-digit numbers. To know how to subtract two 4-digit numbers. To know how to subtract efficiently. To know how to estimate answers. To know how to check answers.</p>	<p>whole numbers with more than 4-digits. To know how to subtract whole numbers with more than 4 digits. To know how to round to estimate and approximate. To know how to use inverse operations. To know how to solve multi-step addition and subtraction problems.</p>	<p>subtract integers.</p>
Multiplication and Division	<p>To know how to double. To know how to share.</p>	<p>To know how to count in 10s.</p>	<p>To know equal groups. To know how to make</p>	<p>To know how to multiply using equal groups.</p>	<p>To know how to multiply by 10.</p>	<p>To know multiples. To know factors.</p>	<p>To know the common factors.</p>

	To know how to group.	To know how to make equal groups. To know how to add equal groups. To know how to make arrays. To know how to double.	equal groups. To know how to add equal groups. To know how to write multiplication sentences using the x symbol. To know multiplication sentences from pictures. To know how to use arrays. To know the 2 times-table. To know the 5 times-table. To know the 10 times-table. To know how to divide by 2. To know odd and even numbers. To know how to divide by 5. To know how to divide by 10.	To know how to multiply by 3. To know how to divide by 3. To know the 3 times-tables. To know how to multiply by 4. To know how to divide by 4. To know the 4 times-tables. To know how to multiply by 8. To know how to divide by 8. To know the 8 times-tables. To know how to compare statements. To know related calculations. To know how to multiply 2-digits by 1-digit. To know how to divide 2-digits by 1-digit. To know how to divide with remainders. To know how to scale. To know how many different ways.	To know how to multiply by 100. To know how to divide by 10. To know how to divide by 100. To know how to multiply by 1 and 0. To know how to divide by 1 and itself. To know how to multiply and divide by 6. To know the 6 times-tables and division facts. To know how to multiply and divide by 9. To know the 9 times-table and division facts. To know how to multiply and divide by 7. To know the 7 times-table and division facts. To know the 11 and 12 times-table. To know how to multiply by 3 numbers. To know factor pairs. To know how to multiply efficiently. To know written methods. To know how to multiply 2-digit by 1-digit. To know how to multiply 3-digits by 1-digit. To know how to divide 2-digits by 1-digit. To know how to divide 3-digits by 1-digit. To know how to solve correspondence problems.	To know common factors. To know prime numbers. To know square numbers To know cube numbers To know how to multiply by 10, 100 and 1,000. To know how to divide by 10, 100 and 1,000. To know multiples of 10, 100 and 1,000. To know how to multiply 4-digits by 1-digit. To know how to multiply 2-digits. To know how to multiply 2-digits by 2-digits. To know how to multiply 3-digits by 2-digits. To know how to multiply 4-digits by 2-digits. To know how to divide 4-digits by 1-digit. To know how to divide with remainders.	To know the common multiples. To know the rules of divisibility. To know the prime numbers to 100. To know square and cube numbers. To know how to multiply up to a 4-digit number by a 2-digit number. To know how to solve multiplication problems. To know how to use short division. To know how to divide using factors. To know how to divide whole numbers up to 4-digits by a 2-digit number using the formal written method. To know how to solve division problems. To know how to solve multi-step problems. To know the order of operations. To know how to solve mental calculations and how to estimate. To know how to reason from known facts.
Fractions		To know how to make a half.	To know how to make equal parts.	To know unit and non-unit fractions.	To know what a fraction is.	To know equivalent fractions.	To know how to simplify and find equivalent

		<p>To know how to make a whole.</p> <p>To know how to find a half.</p> <p>To know how to make a quarter.</p> <p>To know how to find a quarter.</p>	<p>To know how to recognise a half.</p> <p>To know how to find a half.</p> <p>To know how to recognise a quarter.</p> <p>To know how to find a quarter.</p> <p>To know how to recognise a third.</p> <p>To know how to find a third.</p> <p>To know unit fractions.</p> <p>To know non-unit fractions.</p> <p>To know the equivalence of a half and 2 quarters.</p> <p>To know how to find three quarters.</p> <p>To know how to count in fractions.</p> <p>To know how to solve problems with fractions.</p>	<p>To know how to make a whole.</p> <p>To know tenths.</p> <p>To know how to count in tenths.</p> <p>To know tenths as a decimal.</p> <p>To know fractions on a number line.</p> <p>To know fractions of a set of objects.</p> <p>To know equivalent fractions.</p> <p>To know how to compare fractions.</p> <p>To know how to order fractions.</p> <p>To know how to add fractions.</p> <p>To know how to subtract fractions.</p>	<p>To know equivalent fractions.</p> <p>To know fractions greater than 1.</p> <p>To know how to count in fractions.</p> <p>To know how to add 2 or more fractions.</p> <p>To know how to subtract 2 fractions.</p> <p>To know how to subtract from whole amounts.</p> <p>To know how to calculate fractions of a quantity.</p> <p>To know how to calculate quantities in problems.</p>	<p>To know how to change improper fractions into mixed numbers.</p> <p>To know how to change mixed numbers into improper fractions.</p> <p>To know number sequences.</p> <p>To know how to compare and order fractions less than 1.</p> <p>To know how to compare and order fractions greater than 1.</p> <p>To know how to add and subtract fractions.</p> <p>To know how to add fractions within 1.</p> <p>To know how to add 3 or more fractions.</p> <p>To know how to add fractions.</p> <p>To know how to add mixed numbers.</p> <p>To know how to subtract mixed numbers.</p> <p>To know how to subtract, breaking the whole.</p> <p>To know how to subtract 2 mixed numbers.</p> <p>To know how to multiply unit fractions by an integer.</p> <p>To know how to multiply non-unit fractions by an integer.</p> <p>To know how to multiply mixed number by integers.</p> <p>To know fractions of an amount.</p> <p>To know how to use fractions as operators.</p> <p>To know how to solve problems using fractions.</p>	<p>fractions.</p> <p>To know how to identify equivalent fractions on a number line.</p> <p>To know how to compare and order fractions.</p> <p>To know how to add and subtract simple fractions.</p> <p>To know how to add and subtract any two fractions.</p> <p>To know how to add mixed numbers.</p> <p>To know how to subtract mixed numbers.</p> <p>To know how to solve multi-step problems.</p> <p>To know how to multiply fractions by integers.</p> <p>To know how to multiply fractions by fractions.</p> <p>To know how to divide fractions by integers.</p> <p>To know how to divide fractions by fractions.</p> <p>To know how to answer mixed questions with fractions.</p> <p>To know a fraction of an amount.</p>
Geometry	Shape: To know circles and	Shape: To know how to recognise	Properties of Shape: To know and recognise 2-	Properties of Shape: To know turns and angles.	Properties of Shape: To know how to identify	Properties of Shape: To know how to measure	Properties of Shape: To know how to measure

	<p>triangles. To know and use positional language. To know shapes with 4 sides. To know 3-D shapes.</p>	<p>and name 3-D shapes. To know how to sort 3-D shapes. To know how to recognise and name 2-D shapes. To know how to sort 2-D shapes. To know how to identify patterns with 3-D and 2-D shapes.</p> <p>Position and Direction: To know how to describe turns. To know how to describe the position of shapes.</p>	<p>D and 3-D shapes. To know how to count sides on 2-D shapes. To know how to count vertices on 2-D shapes. To know how to draw 2-D shapes. To know and recognise lines of symmetry. To know lines of symmetry to make a whole. To know how to sort 2-D shapes. To know how to make patterns with 2-D shapes. To know how to count faces on 3-D shapes. To know how to count edges on 3-D shapes. To know how to count vertices on 3-D shapes. To know how to sort 3-D shapes. To know how to make patterns with 3-D shapes.</p> <p>Position and Direction: To know how to describe movement. To know how to describe turns. To know how to describe movement and turns. To know how to make patterns with shapes.</p>	<p>To know right angles in shapes. To know how to compare angles. To know how to draw shapes accurately. To know horizontal and vertical lines. To know parallel and perpendicular lines. To know how to recognise and describe 2-D shapes. To know how to recognise and describe 3-D shapes.</p>	<p>angles. To know how to compare and order angles. To know the different types of triangles. To know the different types of quadrilaterals. To know and draw lines of symmetry. To know how to complete a symmetric figure.</p> <p>Position and Direction: To know how to describe position. To know how to draw shapes on a grid. To know how to move shapes on a grid.</p>	<p>angles in degrees. To know how to measure with a protractor. To know how to draw lines and angles accurately. To know how to calculate angles on a straight line. To know how to calculate angles around a point. To know how to calculate lengths and angles in shapes. To know regular and irregular polygons. To know how to solve reasoning problems about 3-D shapes.</p> <p>Position and Direction: To know the position in the first quadrant. To know how to translate. To know how to translate with coordinates. To know how to draw the reflection of a shape. To know how to draw the reflection of a shape using coordinates.</p>	<p>using a protractor. To know and identify angles. To know how to calculate angles. To know how to calculate opposite angles. To know and find angles in a triangle. To know and find angles in a quadrilateral. To know and find angles in a regular polygon. To know how to draw shapes accurately. To know how to draw the net of a 3D shape.</p> <p>Position and Direction: To know how to identify and plot coordinates on the first quadrant. To know how to identify and plot coordinates on</p>
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							<p>four quadrants To know how to translate shapes across four quadrants. To know how to draw reflections of shapes across four quadrant.</p>
Measurement	<p>To know how to compare size, mass and capacity. To know how to compare mass. To know how to compare capacity. To know time.</p>	<p>Money: To know and recognise coins. To know and recognise notes. To know how to count using coins.</p> <p>Length and Height: To know how to compare lengths. To know how to compare heights. To know how to compare lengths and heights. To know how to measure lengths. To know how to solve problems by adding lengths. To know how to solve</p>	<p>Money: To know how to count money in pence. To know how to count money in pounds. To know how to count money using notes and coins. To know how to select money. To know how to make the same amount. To know how to compare money. To know how to find the total. To know how to find the difference. To know how to find change. To know how to solve two-step problems.</p> <p>Length and Height: To know how to measure lengths in cm's. To know how to measure length in m's. To know how to compare lengths. To know how to order lengths. To know the how to use the four operations with length. To know how to solve</p>	<p>Money: To know pounds and pence. To know how to convert pounds and pence. To know how to add money. To know how to subtract. To know how to give change.</p> <p>Length and Perimeter: To know how to measure lengths. To know equivalent lengths for m and cm. To know equivalent lengths for mm and cm. To know how to compare lengths. To know how to add lengths. To know how to subtract lengths.</p>	<p>Money: To know pounds and pence. To know how to order money. To know how to estimate money. To know the four operations.</p> <p>Length, Perimeter and Area: To know kilometres. To know perimeters on a grid. To know the perimeter of a rectangle. To know the perimeter of rectilinear shapes. To know what an area is. To know how to count squares. To know how to make</p>	<p>Perimeter, Area and Volume: To know how to measure a perimeter. To know how to calculate perimeter. To know how to calculate the area of rectangles. To know how to calculate the area of compound shapes. To know how to calculate the area of irregular</p>	<p>Perimeter, Area and Volume: To know and identify areas of a shape. To know how to find the area and perimeter. To know the area of a triangle. To know the area of a right-angled triangle. To know the area of any triangle. To know the area of a</p>

		<p>problems by subtracting lengths.</p> <p>Time: To know before and after. To know dates. To know how to tell the time to the hour. To know how to tell the time to half the hour. To know how to write time. To know how to compare time.</p> <p>Weight and Volume: To know weight and mass. To know how to measure mass. To know how to compare mass. To know how to solve weight and mass problems. To know capacity and volume. To know how to measure capacity. To know how to compare capacity.</p>	<p>problems with lengths.</p> <p>Time: To know o'clock and half past. To know quarter past and quarter to. To know how to tell the time to 5 minutes. To know hours and days. To know how to find durations of time. To know how to compare durations of time.</p> <p>Mass, Capacity and temperature: To know how to compare mass. To know how to measure mass in grams. To know how to measure mass in kilograms. To know how to compare volume. To know millilitres. To know litres. To know how to use the four operations with mass. To know temperature.</p>	<p>To know how to measure perimeter. To know how to calculate perimeter.</p> <p>Time: To know the months and years. To know how many hours are in a day. To know how to tell the time to 5 minutes. To know how to tell the time to the minute. To know how to use a.m. and p.m. To know the 24 hour clock. To know how to find the duration of time. To know how to compare time. To know start and end times.</p> <p>Mass and Capacity: To know how to measure mass. To know how to compare mass. To know how to add and subtract mass. To know how to measure capacity. To know how to compare capacity. To know how to add and subtract capacity.</p>	<p>shapes. To know how to compare area.</p> <p>Time: To know hours, minutes and seconds. To know years, months, weeks and days. To know how to tell the time in analogue and digital.</p>	<p>shapes. To know what volume is. To know how to compare volume. To know how to estimate volume. To know how to estimate capacity.</p> <p>Converting units: To know kilograms and kilometres. To know millimetre and millilitres. To know metric unites.</p>	<p>parallelogram. To know how to find the volume. To know the volume of a cuboid.</p> <p>Converting Units: To know metric measures. To know how to convert metric measures. To know how to calculate metric measures.</p>
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Statistics			<p>To know how to make tally charts. To know how to draw pictograms. To know how to interpret pictograms. To know how to draw pictograms. To know how to block diagrams.</p>	<p>To know how to interpret pictograms. To know how to draw bar charts. To know how to interpret bar charts. To know how to interpret tables.</p>	<p>To know how to interpret charts. To know the comparison, sum and difference. To know how to interpret line graphs.</p>	<p>To know how to read and interpret line graphs. To know how to draw line graphs. To know how to use line graphs to solve problems. To know how to read and interpret tables. To know how to interpret two-way tables. To know how to interpret timetables.</p>	<p>To know how to read and interpret a line graph. To know how to read and interpret dual bar charts. To know how to read and interpret pie charts. To know how to read and interpret pie charts with percentages. To know how to draw pie charts. To know how to calculate the mean.</p>
Decimals					<p>To know and recognise tenths and hundredths. To know tenths as a decimal. To know tenths on a place value grid. To know tenths on a number line. To know how to divide 1-digit by 10. To know how to divide 2-digits by 10. To know hundredths. To know hundredths as decimals. To know hundredths on a placed value grid. To know how to divide 1 or 2-digit numbers by 100. To know how to make a whole.</p>	<p>To know decimals up to 2 decimal places. To know decimals as fractions. To know and understand thousandths. To know thousandths as decimals. To know how to round decimals. To know how to order and compare decimals. To know and understand percentages. To know percentages as fractions and decimals. To know the equivalent F.D.P. To know how to add decimals within 1. To know how to subtract decimals within 1.</p>	<p>To know the place value within 1. To know the place value of decimals and integers. To know how to round decimals. To know how to add and subtract decimals. To know how to multiply by 10, 100 and 1,000. To know how to divide by 10, 100 and 1,000. To know how to multiply decimals by integers. To know how divide decimals by integers. To know how to multiply and divide decimals.</p>

					<p>To know how to write decimals.</p> <p>To know how to compare decimals.</p> <p>To know how to order decimals.</p> <p>To know how to round decimals.</p> <p>To know how to find halves and quarters.</p>	<p>To know how to identify complements to 1.</p> <p>To know how to add decimals.</p> <p>To know how to add decimals with the same number of decimal places.</p> <p>To know how to subtract decimals with the same number of decimal places.</p> <p>To know how to add and subtract decimals with the same number of decimal places.</p> <p>To know how to add decimals with a different number of decimal places.</p> <p>To know how to subtract decimals with different number of decimal places.</p> <p>To know how to add and subtract decimals with a different number of decimal places.</p> <p>To know how to add and subtract wholes and decimals.</p> <p>To know and identify decimal sequences.</p> <p>To know how to multiply decimals by 10,100 and 1,000.</p> <p>To know how to divide decimals by 10, 100 and 1,000.</p>	
Fractions, decimals and percentages.						<p>To know percentages as fractions and decimals.</p> <p>To know the equivalent F.D.P.</p> <p>To know and understand percentages.</p>	<p>To know decimals and fraction equivalents.</p> <p>To know fractions as a decimal.</p> <p>To know and understand percentages.</p> <p>To know how to convert fractions to percentages.</p> <p>To know equivalent fractions, decimals and percentages.</p> <p>To know and order fractions, decimals and percentages.</p> <p>To know the percentage of</p>

							an amount.
Ratio and Proportion							<p>To know when to add or multiply.</p> <p>To know how to describe ratio using the correct language.</p> <p>To know the ratio symbol.</p> <p>To know how to find the ratio using fractions.</p> <p>To know how to draw a scale diagram.</p> <p>To know how to draw a scale diagram using factors.</p> <p>To know how to draw similar shapes.</p> <p>To know how to solve ratio problems.</p> <p>To know how to solve proportion problems.</p>
Algebra							<p>To know how to find the input and output of function machines.</p> <p>To know how to write algebraic expressions.</p> <p>To know how to substitute.</p> <p>To know how to write a formulae.</p> <p>To know how to form equations.</p> <p>To know how to solve 1-step equations.</p> <p>To know how to solve 2-step equations.</p> <p>To know how to find pairs of values.</p> <p>To know how to solve problems with two unknowns.</p>