We believe that maths is essential to everyday life and provides a foundation for understanding the world.

Our aim in maths, is to ensure that children have every opportunity to develop their skills and for them to engage with the subject in a way that is relevant and purposeful to them and their lives.

Children will develop essential skills in fluency and mathematical reasoning and competence in applying their learning to new situations solving increasingly sophisticated problems that will enable them to tackle Maths in the wider world in later life.

Our core Maths skills in calculation, number facts and times tables are the basis from which our fluency in number is derived and, as such, form the key building blocks of our Maths curriculum.

Our teaching will build the knowledge and model the skills needed to become confident Mathematicians by ensuring careful progression using an appropriate combination of concrete, visual and abstract methods and resources.

Furzefield Primary School – Progression of Mathematical Skills

Mathematics in EYFS:

In nursery and reception, mathematics is taught through daily carpet sessions and supported by carefully selected activities for children to access during child-initiated learning time. In addition, every opportunity is taken to develop mathematical concepts and vocabulary through every day discussion for example:
by counting around the circle how many children are in class; by spotting and naming shapes whilst moving around the school;
by using language such as more/less, bigger/smaller to compare;
by creating and talking about patterns using a variety of materials;
by using 2d shapes to create pictures and 3d shapes to create models;
by singing counting songs.

In Nursery, children learn to:	In Reception, children learn to:
Develop fast recognition of up to 3 objects, without having to count them individually. Recite numbers past 5. Say one number for each item in order: 1,2,3,4,5. Know that the last number reached when counting objects tells you how many there are in total. Show 'finger numbers' up to 5. Link numerals and amounts, showing the right number of objects to match the numeral, up to 5. Experiment with their own symbols and marks as well as numerals. Solve real world mathematical problems with numbers up to 5. Compare quantities using language: 'more than', 'fewer than'. Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. Understand position through words alone – e.g. "The bag is under the table," – with no pointing. Make comparisons between objects relating to size, length, weight and capacity. Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. Combine shapes to make new ones. Talk about and identifies the patterns around them. Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern. Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'	Count objects, actions and sounds. Subitise (Recognise the number of items in a group without having to count them individually, for example the dots on dice.) Link the number symbol (numeral) with its cardinal number value. Count beyond ten. Compare numbers Understand the 'one more than/one less than' relationship between consecutive numbers Explore the composition of numbers to 10 Automatically recall number bonds for numbers 0–5 and some to 10. Select, rotate and manipulate shapes to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. Continue, copy and create repeating patterns. Compare length, weight and capacity.

Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number: Number and Place Value	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals. Count in multiples of twos, fives and tens. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line. Write numbers from 1 to 20 in words.	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. Identify, represent and estimate numbers using different representations, including the number line. Read and write numbers to at least 100 in numerals and in words.	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 Compare and order numbers up to 1000. Identify, represent and estimate numbers using different representations Read and write numbers up to 1000 in numerals and in words.	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Recognise the place value of each digit in a four-digit number order and compare numbers beyond 1000. Round any number to the nearest 10, 100 or 1000 Identify, represent and estimate numbers using different representations. 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.	Count forwards or backwards in steps 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. Read, write, order and compare numbers up to 1 000 000. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Recognise and use square numbers and cube numbers.	Use negative numbers in context, and calculate intervals across zero. 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.

Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number: Addition and Subtraction	Represent and use number bonds and related subtraction facts within 20. Add and subtract one-digit and two-digit numbers to 20, including zero. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9.	Recall and use addition and subtraction number facts to 20 and use related facts up to 100. Add, subtract and solve word problems using concrete, pictorial and abstract representations and mentally, including: TU+U, TU+T, TU+TU and U+U+U. Recognise and use the inverse relationship between addition and subtraction to check calculations and solve missing number problems.	Add and subtract numbers mentally, including: HTU+U, HTU+T and HTU+H. Add and subtract numbers with up to three digits, using formal columnar written methods. Estimate the answer to a calculation and use inverse operations to check answers. Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	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 calculation. Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why"	add and subtract numbers mentally with increasingly large numbers. Add and subtract whole numbers with more than 4 digits, including using formal written methods. Use rounding to check answers to calculations. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	Perform mental calculations, including with mixed operations and large numbers

Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number: Multiplication and Division	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts.	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 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 methods. Progress to formal written methods. 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.	Recall multiplication and division facts for multiplication tables up to 12 × 12 Use place value, known and derived facts to multiply 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-digit and three-digit numbers by a one-digit number using formal written layout. Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and problems such as n	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Know and use the vocabulary of prime numbers, factors and composite numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Multiply and divide numbers mentally drawing upon known facts and whole numbers and those involving decimals by 10, 100 and 1000. Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. Divide numbers up to 4 digits by a one-digit	Identify common factors, common multiples and prime numbers. Perform mental calculations, including with mixed operations and large numbers. Multiply multi-digit numbers up 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. Divide numbers up to 4 digits by a two-digit number using the formal written method

				objects are connected to m objects.	number using the formal written method of short division and interpret remainders privately for the context Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign, scaling by simple fractions and simple rates.	of short division where appropriate, interpreting remainders according to context. Use their knowledge of the order of operations to carry out calculations involving the four operations. 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.

Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number: Fractions (including Decimals and Percentages)	Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	Recognise, find, name and write fractions 1/3, 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity. Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	Count up and down in tenths; Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10". Compare and order unit fractions, and fractions with the same denominators. Recognise and show, using diagrams, equivalent fractions with small denominators. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. Compare and order unit fractions, and fractions with the same denominators.	Count up and down in hundredths, recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Recognise and show, using diagrams, families of common equivalent fractions. 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 equivalents of any number of tenths or hundredths and write decimal equivalents to ¼, ½ and ¾. Find the effect of dividing a one- or two-digit number	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number. Compare and order fractions whose denominators are all multiples of the same number. Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. 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 decimal numbers as fractions.	Use common factors to simplify fractions. Use common multiples to express fractions in the same denomination. 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. Divide proper fractions by whole numbers. Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction Identify the value of each digit in numbers given to three decimal places.

			Recognise and show, using diagrams, equivalent fractions with small denominators. Solve problems using all fraction knowledge.	by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths round decimals with one decimal place to the nearest whole number. Compare numbers with the same number of decimal places up to two decimal places solve simple measure and money problems involving fractions and decimals to two decimal places.	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places. Recognise the per cent 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. Solve problems involving number 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.	Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. Multiply one-digit number with up to two decimal places by whole numbers. Use written division methods where the answer has up to two decimal places. Solve problems involving the calculation of percentages and for comparison. Solve problems which require answers to be rounded to specified degrees of accuracy. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement	Compare, describe and solve practical problems for: length/height, weight/mass, capacity/volume & time. Measure and begin to record length/height, weight/mass, capacity/volume & time. Recognise and know the value of different denominations of coins and notes. Sequence events in chronological order using language. Recognise and use language relating to dates, including days of the week, weeks, months and years. Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	Choose and use standard units to estimate and measure length/height (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest unit, using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume /capacity and record the results using >, < and =. Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a value. Find different combinations of coins that equal the same amounts of money. Solve simple problems in a practical context involving addition and subtraction of money	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume /capacity (l/ml). Measure the perimeter of simple 2-D shapes. Add and subtract amounts of money to give change, using both £ and p in practical contexts. Tell and write the time from an analogue clock, including Roman numerals from I to XII, and 12-hour and 24-hour clocks. Estimate and read time with accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary o'clock, a.m./p.m., morning, afternoon, noon and midnight.	Convert between different units of measure. Estimate, compare and calculate different measures, including money in pounds and pence. Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares. Convert between different units of measure (e.g. Hours to minutes). Read, write and convert time between analogue and digital 12- and 24-hour clocks. Solve problems involving converting	Convert between different units of metric measure . Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Estimate volume and capacity. 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. Use all four operations to solve problems involving measure [for	Solve problems involving the calculation and conversion of units of measure, up to three decimal places. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time. 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 area of parallelograms and triangles calculate, estimate and compare volume of

		including giving change. 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.	Know the number of seconds in a minute, the number of days in each month, year and leap year.	from hours to minutes; minutes to seconds; years to months; weeks to days.	example, length, mass, volume, money] using decimal notation, including scaling. Solve problems involving converting between units of time.	cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units.

Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: properties of shapes	Recognise and name common 2-D shapes (e.g. Square, circle, triangle) Recognise and name common 3-D shapes (e.g. Cubes, cuboids, pyramids & spheres)	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Compare and sort common 2-D and 3-D shapes and everyday objects. Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Identify 2-D shapes on the surface of 3-D shapes. Compare and sort common 2-D and 3-D	Draw 2-D shapes. Make 3-D shapes using modelling materials. Recognise 3-D shapes in different orientations and describe them. identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Recognise angles as a property of shape or a description of a turn. Identify right angles and recognise how many turns make a complete turn.	Compare and classify geometric shapes, including quadrilaterals and triangles, based on properties and sizes. 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. Identify acute and obtuse angles and compare and order angles up to two right angles by size.	Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on equal sides and angles. Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and	Draw 2-D shapes using given dimensions and angles. Compare and classify geometric shapes based on their properties and sizes. Illustrate and name parts of circles, E.g radius, diameter and circumference. Know that the diameter is twice the radius. Recognise, describe, and build simple 3-D shapes, including making nets. Find unknown angles in any triangles,

		shapes and everyday objects.	Identify whether angles are greater or less than right angle.		measure them in degrees (°) Identify angles at a point on a straight line and ½ a turn. Identify other multiples of 90°	quadrilaterals, and regular polygons. Recognise angles where they meet at a point, on a straight line, or are vertically opposite. Find missing angles.

Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: properties of shapes	Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	Order and arrange combinations of mathematical objects in patterns and sequences. Use mathematical vocabulary to describe position, direction, movement and distinguish between rotation as a turn. Interpret and construct simple pictograms, tally charts, block diagrams and simple tables	Revise and consolidate year 2 objectives.	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 left/right and up/down. Plot specified points and draw sides to complete a given polygon	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	Describe positions on the full coordinate grid (all four quadrants) Draw and translate simple shapes on the coordinate plane and reflect them in the axes.

Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Statistics		Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data.	Interpret and present data using bar charts, pictograms and tables. Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	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.	Complete, read and interpret information in tables, including timetables. Solve comparison, sum and difference problems using information presented in a line graph.	Interpret and construct pie charts and line graphs calculate and interpret the mean as an average. Use pie charts and line graphs to solve problems.

Year 6 Only	
Number: **Ration & Proportion**	• solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts • 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.
Number: Algebra	• 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.