Fairfield Primary's
Maths End Points

Early Years			
	Autumn	Spring	Summer
Nursery	**By the end of the Autumn Term Nursery** children should be able to: **Counting** • Uses some number names and number language within play, number rhymes and stories and may show fascination with large numbers. **Cardinality** • Beginning to notice significant numerals (number symbols). **Spatial Awareness** • Responds to and uses language of position and direction. **Shape** • Responds to both informal language and common shape names. **Pattern** • Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next.	**By the end of the Spring Term Nursery** children should be able to: **Counting** • May enjoy counting verbally as far as they can go. **Cardinality** • Subitises one, two and three objects (without counting). **Composition** • Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers. **Spatial Awareness** • Predicts, moves and rotates objects to fit the space or create the shape they would like. **Shape** • Choose items based on their shape which are appropriate for the child's purpose.	**By the end of the Summer Term Nursery** children should be able to: **Comparison** • Compares two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. You've got two, I've got two. Same! **Counting** • Recites numbers in order to 10. • Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. • Enjoys reciting numbers from 0 to 10 and beyond and back from 10 to 0. **Cardinality** • Begins to subitise four objects (without counting) • Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same. • Begin to recognise numerals 0 to 10.

	Measures • In meaningful contexts, finds the longer or shorter, heavier or lighter and more/ less full of two items (ongoing). • Recalls a sequence of events in everyday life and stories (ongoing).	• Shows awareness of shape similarities and differences between objects. **Pattern** • Creates their own spatial patterns showing some organisation or regularity. **Measures** • In meaningful contexts, finds the longer or shorter, heavier or lighter and more/ less full of two items (ongoing). • Becomes familiar with measuring tools in everyday experiences and play.	• Links numerals with amounts up to 5 and maybe beyond. • Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle). **Composition** • Explores using a range of their own marks and signs to which they ascribe mathematical meaning. • Beginning to use understanding of number to solve practical problems in play and meaningful activities. **Spatial Awareness** • May enjoy making simple maps of familiar and imaginative environments. **Shape** • Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes. • Attempts to create arches and enclosures when building, using trial and improvement to select blocks. • Uses informal language and analogies (e.g. *heart-shaped and hand-shaped leaves*). **Pattern** • Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC). • Spots patterns in the environment, beginning to identify the pattern "rule". **Measures**

			• In meaningful contexts, finds the longer or shorter, heavier or lighter and more/ less full of two items (ongoing).
Educational Programme for Mathematics: Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.		**Number Early Learning Goal:** • Have a deep understanding of number to 10, including the composition of each number; • Subitise (recognise quantities without counting) up to 5; • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. **Numerical Pattern Early Learning Goal:** • Verbally count beyond 20, recognising the pattern of the counting system; • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	

Reception	**By the end of the Autumn Term Reception** children should be able to: **Counting** • Enjoys reciting numbers from 0 to 10 and beyond and back from 10 to 0. • Matches the numeral with a group of items to show how many there are (up to 5). • In practical activities, adds one and subtracts one with numbers to 10. **Cardinality** • Engages in subitising numbers to four and maybe five. **Composition** • Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects. • Beginning to recognise that each counting number is one more than the one before. **Spatial Awareness** • Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints. **Shape** • Uses informal language and analogies, (e.g. *heart-shaped and hand-shaped leaves*), as well as mathematical terms to describe shapes.	**By the end of the Spring Term Reception** children should be able to: **Comparisons** • Increasingly confident at putting numerals in order 0 to 10 (ordinality). • Matches the numeral with a group of items to show how many there are (up to 10). • Estimates of numbers of things, showing understanding of relative size. **Cardinality** • Counts out up to 10 objects from a larger group **Composition** • Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three **Spatial Awareness** • Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning). **Shape** • Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build. **Pattern** • Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat.	**By the end of the Summer Term Reception** children should be able to: **Comparison** • Uses number names and symbols when comparing numbers, showing interest in large numbers • Begins to explore and work out mathematical problems including sharing, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-" • Recall some doubling facts. • Recall number bonds to 5 including subtraction facts. • Recall some number bonds to 10. • Begin to recognise odds and evens. **Spatial Awareness** • May enjoy making simple maps of familiar and imaginative environments, with landmarks. **Shape** • Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes. **Measures** • Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy. • Beginning to experience measuring time with timers and calendars (ongoing).

	Pattern • Spots patterns in the environment, beginning to identify the pattern "rule". **Measures** • Beginning to experience measuring time with timers and calendars (ongoing). • Becomes familiar with measuring tools in everyday experiences and play.	**Measures** • Beginning to experience measuring time with timers and calendars (ongoing). • Is increasingly able to order and sequence events using everyday language related to time.	
Educational Programme for Mathematics: Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for		**Number Early Learning Goal:** • Have a deep understanding of number to 10, including the composition of each number; • Subitise (recognise quantities without counting) up to 5; • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. **Numerical Pattern Early Learning Goal:** • Verbally count beyond 20, recognising the pattern of the counting system; • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	

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Key Stage 1						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Place Value within 10** Within 10, given a number, identify one more or one less.	**Place Value Within 20** Within 20, identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	**Addition and Subtraction Within 20** Recall all the number bonds to and within 10. and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships.	**Place Value Within 50** Within 50, identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	**Measurement** **Length** Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half). **Mass** Compare, describe and solve practical problems for mass/weight: [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]. **Money** Recognise and know the value of different denominations of coins and notes. **Time** Read the time on a clock (to half an hour).	**Place Value to 100** Within 100, Partition two-digit numbers into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus.

	Addition and Subtraction Within 10 Add and subtract one digit numbers to 10, including zero.	**Shape** Recognise and name common 2 D and 3 D shapes.	**Place Value Within 50** Within 50, identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	**Multiplication and Division** Recall multiplication and division facts for 2 and 10 and use them to solve simple problems, demonstrating and understanding of the commutativity as necessary.	**Fractions** Identify ¼ of a number or shape and know that all the parts must be equal parts of the whole.	**Position and Direction** Describe position, direction and movement, including whole, half, quarter and three-quarter turns.
Year 2	**Place Value** Compare and order numbers from 0 up to 100; use <, > and = signs. Use place value and number facts to solve problems.	**Addition and Subtraction**	**Multiplication and Division** Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating and understanding of commutativity as necessary.	**Fractions** Identify 1/4, 1/3, 1/2, 2/4, ¾ of a number or shape and know that all the parts must be equal parts of the whole.	**Measurement** **Length and Height** Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass. **Mass, Capacity and Temperature** Compare and order lengths, mass, volume/capacity and record the results using >, < and =.	**Statistics** Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.
	Addition and Subtraction Recognise and use the inverse relationship between addition and	**Shape** Name and describe properties of 2D and 3D shapes, including number of	**Money** Use different coins to make the same amount.		**Time** Time - Read the time on a clock to the nearest 15 minutes.	**Position and Direction** Use mathematical vocabulary to describe position,

	subtraction and use this to check calculations and solve missing number problems.	sides, vertices, edges, faces and lines of symmetry.				direction and 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 anti-clockwise).

Lower Key Stage 2						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Year 3	**Place Value** Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Compare and order numbers up to 1000. .	**Multiplications and Division A** Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	**Multiplications and Division B** Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two digit numbers times one digit numbers, using mental and progressing to formal written methods.	**Fractions A** 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.	**Fractions B** Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$.	**Shape** Identify right angles, recognise that two right angles make a half turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.
	Addition and Subtractions Addition and Subtraction - Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction		**Measurement: Length and perimeter** Measure the perimeter of simple 2D shapes.	**Measurement: Mass and Capacity** Measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml).	**Measurement: Money** - Add and subtract amounts of money to give change, using both £ and p in practical contexts. **Time -** Estimate and read time with increasing accuracy to the nearest minute.	**Statistics** Statistics - 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. **Time**
Year 4	**Place Value** -Round any number to the nearest 10,	**Multiplication and Division A** Recall and use	**Multiplication and Division B**	**Fractions** Count up and down in	**Decimals B** Recognise and write	**Shape** Compare and classify geometric shapes,

	100 or 1000.	multiplication and division facts for multiplication tables up to 12 × 12. .	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.	hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	decimal equivalents to ¼, ½ and ¾.	including quadrilaterals and triangles, based on their properties and sizes
	Addition and Subtractions Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	**Measurement: Area** - Find the area of rectilinear shapes by counting squares	**Measurement: Length and Perimeter** - Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	**Decimals A** Recognise and write decimal equivalents of any number of tenths or hundredths	**Measurement: Money -** Solve simple measure and money problems involving fractions and decimals to two decimal places. **Time -** Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	**Statistics** Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. **Position and Directions** Position and Direction - Plot specified points and draw sides to complete a given polygon.

Upper Key Stage 2						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Year 5	**Place Value** Read, write, order and compare numbers to at least 1000000 and determine the value of each digit.	**Multiplication and Division A** 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.	**Multiplication and Division B** Divide numbers up to 4 digits by a one digit number using the formal written method of short division an interpret remainders appropriately for the context.	**Decimals and Percentages** Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	**Shape** Draw given angles, and measure them in degrees.	**Negative Numbers** Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero.
	Addition and Subtractions Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).	**Fractions A** Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example ⅖ + ⅘ = $^{6}/_{5}$ = 1⅕].	**Fractions B** Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. **Decimals and Percentages** 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.	**Perimeter and Area** Perimeter and Area - Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm^2) and square metres (m^2), and estimate the area of irregular shapes. **Statistics** Complete, read and interpret information in tables including timetables.	**Position and Direction** 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. **Decimals** Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	**Converting Units** Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. **Volume** Estimate volume [for example using 1cm3 blocks to build cuboids

Year 6	**Place Value** Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.	**Fractions A** Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 1/4 × 1/2 = 1/8). **Fractions B**	**Ratio and Proportion** Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.	**Fractions, Decimals and Percentages** Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.	**Problem Solving** Choose and use efficient methods to solve problems at the appropriate level.	**Themed Projects, Consolidation and Problem Solving**
	Addition, Subtractions, Multiplication and Division Use their knowledge of the order of operations to carry out calculations involving the four operations.	**Converting Units** 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 3 d.p.	**Algebra** - Express missing number problems algebraically. **Decimals** Use written division methods in cases where the answer has up to 2 decimal places.	**Area, perimeter and Volume** Area and Volume - Recognise when it is possible to use formulae for area and volume of shapes.		
	Shape Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	**Position and Direction** Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.		**Statistics** Calculate the mean as an average.		