Mathematics Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	**Cardinality and Counting** Counting things of different sizes – this helps children to focus on the numerosity of the count Counting things that cannot be moved, such as pictures on a screen, birds at the bird table, faces on a shape. Count out or 'give' a number of things	**Cardinality and Counting** Opportunities to see regular arrangements of small quantities, e.g. a dice face Recognise small amounts (up to five) when they are in the 'regular' arrangement. Numeral meaning – matching number with quantity (1-5) **Comparison** Sorting and comparing Identifying the same quantity More/less – compare grps **Shape and Space** Spatial awareness	**Cardinality and Counting** Count in order Bigger/smaller **Composition** Making arrangements with five **Shape and Space** Select shapes that fit together – rotate/flip Construction	**Cardinality and Counting** Recognise small amounts (up to five) when they are not in the 'regular' arrangement. Count 1:1 **Composition** Counting grps – altogether **Pattern** Constructing patterns with actions **Shape and Space** Develop shape awareness by constructing with a purpose	**Cardinality and Counting** Know number has not changed if grp is rearranged **Composition** Making arrangements with ten **Pattern** Number patter – dice In the environment In songs/rhymes/stories	**Cardinality and Counting** **Shape and Space** **Composition** **Pattern** Using marks Patterns in a line
Reception	**Cardinality and Counting** Counting and saying number names in sequence Counting forward/backwards Counting from different numbers. Counting things that can't be seen, such as sounds, actions, words Count out or 'give' a number of things from a larger group Know the last number counted gives you the total so far Focusing on the 'stopping number' which gives the cardinal value. Numeral meaning – matching number with quantity (1-10) **Composition** Different ways of making 5	**Cardinality and Counting** Ordering largest to smallest Subitising - recognising how many things are in a group without having to count them one by one. Use of structured manipulatives (dominoes, ten frame) encouraged to say the quantity represented. Conservation – Know number has not changed if grp is rearranged Grouping in different ways – number bonds 5/10 **Comparison** More than/less than Comparing groups – equal/unequal Reasoning – unfair sharing Compare numbers far apart One more than/One less than – take one away/add one more Use and understand vocabulary of addition/subtraction Addition/subtraction 1-5 **Composition** Different ways of making 10 Number bonds to ten Continue different ways of making different numbers 1-5 **Shape and Space** Name and explore regular shapes 2D /environment **Measures** Explore long, tall, small, short, heavy, light	**Cardinality and Counting** Recognise small amounts (up to ten) when they are not in the 'regular' arrangement **Comparison** Halving/ Sharing into equal groups Estimating **Composition** Part/whole – identifying smaller number within a number eg; ladybird has 5 spots altogether –'I can see 4 and 1' Partitioning into groups – total the same Identifying pairs on numbers that make a total How many altogether Doubling Addition/subtraction 1-10 Repeated addition 1-5 Different ways of making different numbers 5-10 **Pattern** In the environment In songs/rhymes/stories **Shape and Space** Spatial vocabulary **Measures** Comparing amounts Comparison in estimation and predicting	**Cardinality and Counting** Largest/smallest number **Comparison** Halving/ Sharing into equal groups Explain and reason – unfair sharing **Composition** Different ways to partition a whole number Identifying pairs on numbers that make a total Partitioning with more than 2 numbers Number bonds Repeated addition Repeated addition 1-10 Different ways of making different numbers 10-15 **Pattern** Continue a pattern AB Copy a pattern AB Make your own pattern AB Spotting an error in a pattern AB **Shape and Space** Representing spatial relationships – plan and construct **Measures** Relationship between size and number of units Use units to compare things Ordering measure	**Cardinality and Counting** Missing numbers Counting in 2's **Comparison** Halving/ Sharing – dividing equally **Composition** Continue number bonds 10-15 Repeated addition Repeated addition Solve practical number problems Different ways of making different numbers 10-20 **Pattern** Continue a pattern ABC Copy a pattern ABC Make your own pattern ABC Spotting an error in a pattern ABC **Shape and Space** Identifying similarities in shape **Measures** Use time to sequence evets Name amounts – coins Value of coins	**Cardinality and Counting** Counting in 5's, 10's **Comparison** Halving/ Sharing – combining/sharing/division grps of 2,5,10 **Composition** Number bonds 11-20 Repeated addition Repeated addition Number word problems – ER Differences between numbers **Pattern** Continue a pattern ABCC Copy a pattern ABCC Make your own pattern ABCC Spotting an error in a pattern ABCC Using coding structure Patterns in a circle **Shape and Space** Name/describe properties 2D/3D shapes Develop awareness of relationships of shape – triangles/rectangles to make a tent or folding and cutting to make decorations **Measures** Time durations Continue value of coins Add amounts - coins
Year 1	**Numerical Reasoning** **Additive Reasoning** Count to, across and within 100 Recognise half and quarter of shapes Read, write and solve +,-,= equations	**Multiplicative Reasoning** **Geometric Reasoning** Recognise x and ÷ signs Solve x, recognising commutativity using CPA strategies Recognise and name 2D and 3D shapes Properties of 2D shapes Arrange combinations in patterns	**Numerical Reasoning** **Additive Reasoning** Count forwards and backwards beginning w/ 0 and 1 from any number Recognise half and quarter of quantities Solve + and- one step problems using CPA	**Multiplicative Reasoning** **Geometric Reasoning** Solve x and ÷ number statements recognising inverse Properties of 2D and 3D shapes Describe half and full turn	**Numerical Reasoning** **Additive Reasoning** Count in 2s,5s and 10s Solve missing number problems	**Multiplicative Reasoning** **Geometric Reasoning** Solve x and ÷ problems using CPA strategies Compare shapes Describe quarter, half, three quarter and full turn
Year 2	**Numerical Reasoning** **Additive Reasoning** Compare and order numbers 0-100 Count in steps 2,3,5. Read and write numbers to 100. + and – facts to 20 fluently, derive related facts to 100 Solve 1 step problems with + and – Recognise 1/3 and ¼s of shape.	**Multiplicative Reasoning** **Geometric Reasoning** 2,5 and 10 x Recognise odd and even Identify 2d and 3d shapes and their properties. Recognise clockwise and anti-clockwise	**Numerical Reasoning** **Additive Reasoning** Recognise the place value of 2d number. Count in tens from any number + and – using 2d and 1d numbers using CPA. Recognise 1/3 and ¼s of quantities and measurements.	**Multiplicative Reasoning** **Geometric Reasoning** Solve x and ÷ problems. Recognise 2d in 3d shapes Symmetry Recognise a right angle turn	**Numerical Reasoning** **Additive Reasoning** Use place value and number facts to solve problems Inverse for + and – to check answers Commutative law Recognise equivalent fractions 2/4=1/2	**Multiplicative Reasoning** **Geometric Reasoning** Inverse for x and ÷ to check answers. Commutative law Compare and sort 2d and 3d shapes. Interpret and construct pictograms, tally, block diagrams and tables.
Year 3	**Numerical Reasoning** **Additive Reasoning** Compare and order numbers to 1000 Count in steps 4, 8, 50 and 100 Read and write numbers to 1000. Mental strategies +and – 3d with tens, hundreds. Count in tenths Equivalent fractions	**Multiplicative Reasoning** **Geometric Reasoning** 3, 4 and 8 x Draw 2d shapes and make 3 d shapes using nets.	**Numerical Reasoning** **Additive Reasoning** Recognise place value of 3d number Find 10/100 more or less + and – using 2d and 1d numbers using written method. + and - fractions with same denominator	**Multiplicative Reasoning** **Geometric Reasoning** 2d x 1d – mental and written methods Recognise 3d shapes in different orientations Recognise angles as property of shape. Interpret and present data using bar charts, pictograms and tables.	**Numerical Reasoning** **Additive Reasoning** Solve number problems and practical problems. Use inverse operations to check. Missing number problems Compare and order fractions with same denominator Solve fraction problems	**Multiplicative Reasoning** **Geometric Reasoning** x and ÷ problems including missing numbers Identify angles as < and > a right angle One and two step statistic problems – How many more?
Year 4	**Numerical Reasoning** **Additive Reasoning** Compare and order numbers beyond 1000 Count in step s 6,7,9, 25 and 1000 Round to 10,100,1000 + and – up to 4d numbers Count in hundredths + and - fractions with same denominator	**Multiplicative Reasoning** **Geometric Reasoning** Up to 12 x 12 x by 0 and 1 x 3 numbers Compare and classify geometric shapes Identify acute and obtuse angles	**Numerical Reasoning** **Additive Reasoning** Count backwards from 0 to negative numbers Recognise place value of 4d number Estimate and use inverse operations Equivalent fractions inc tenths and hundredths	**Multiplicative Reasoning** **Geometric Reasoning** X 2d and 3d by 1d using written method. Factor pairs Coordinates in one quadrant , translate shapes.	**Numerical Reasoning** **Additive Reasoning** Solve number problems and practical problems. Read Roman Numerals to 100 Solve two step + and - problems Recognise and write decimal equivalents ¼, ½ and 3/4	**Multiplicative Reasoning** **Geometric Reasoning** x and ÷ problems including missing numbers linking concept to fractions Identify lines of symmetry – 2d shapes. Missing coordinates to form 2d shapes Interpret and present bar and line graphs. Compare information in different graphs.
Year 5	**Numerical Reasoning** **Additive Reasoning** Compare and order numbers beyond 1,000,000 Count in steps in powers of 10 in any number to 1,000,000 Round numbers to 1,000,000 + and – with more than 4d numbers + and - fractions with same denominator and related fractions Mixed number and improper fractions x proper fractions and mixed numbers	**Multiplicative Reasoning** **Geometric Reasoning** Multiples and factors Prime numbers x and ÷ up to 4 digit using written method incl long multiplication for 2d numbers and short division Identify 3d shapes from 2d representations. Know angles measured in degrees – straight line, whole turn, reflex.	**Numerical Reasoning** **Additive Reasoning** Interpret negative numbers in context Determine the value of any digit up to 1,000,000. Use rounding to check answers. Round decimals with 2dp. Read, write and order and compare numbers up to 3dp. Recognise percentage, decimal, fraction equivalents	**Multiplicative Reasoning** **Geometric Reasoning** Squared and cubed numbers Multiply numbers and decimals by 10,100,1000 Distinguish between regular and irregular polygons. Identify, describe and represent position of a shape following reflection or translation.	**Numerical Reasoning** **Additive Reasoning** Solve number problems and practical problems. Read Roman Numerals to 1000 Solve multi-step + and – problems Solve problems which require % and decimals equivalents	**Multiplicative Reasoning** **Geometric Reasoning** Solve x and ÷ problems Including scaling of simple fractions Comparison problems presented in line graphs. Complete read and interpret information in tables including times tables.
Year 6	**Numerical Reasoning** **Additive Reasoning** Read,write,order, compare numbers to 10,000,000. Round any number. Compare and order fractions and decimals up to 3dp Perform mental calculation – mixed operation and large numbers	**Multiplicative Reasoning** **Geometric Reasoning** X and ÷ up to 4d by 2d using written methods. Identify common factors, common multiples and prime numbers. Draw 2d shapes. Recognise, describe and build 3d shapes/nets. Illustrate and name parts of a circle – radius, diameter and circumference.	**Numerical Reasoning** **Additive Reasoning** Determine the value of any digit up to 10,000,000. Simplify, + and - fractions with different denominators. x and ÷ fractions and whole numbers. Solve + and - multistep problems in context.	**Multiplicative Reasoning** **Geometric Reasoning** Prior knowledge to solve calculations involving the four operations (inc measure, conversions) Compare and classify triangles and quadrilaterals. Recognise and find missing angles.	**Numerical Reasoning** **Additive Reasoning** Solve number and practical problems (involving ratio). Algebra and formulae. Recall equivalent fractions, decimals and %. Estimation skills in problem solving.	**Multiplicative Reasoning** **Geometric Reasoning** Apply calculation knowledge to all contexts. Use estimation skills. Describe positions on a full coordinate grid , draw and translate shapes Interpret and construct pie charts and line graphs. Calculate and interpret the mean as an average.