LEIGHSWOOD SCHOOL

Wonder Investigate Learn Discover

Leighswood Curriculum Progression Map- Maths Ready-to-Progress Curriculum (September 2020 Onwards)

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
In key stage,1, the principal focus of mathematics teaching is to: • Ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (for example, concrete objects and measuring tools). • Develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.	**In lower key stage 2, the principal focus of mathematics teaching in lower key stage 2 is to:** • Ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. • Develop their ability to solve a range of problems, including with simple fractions and decimal place value. • Ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling. **In upper key stage 2, the principal focus of mathematics teaching in lower key stage 2 is to:** • Ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. • Develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. • Consolidate and extend their knowledge developed in number in geometry and measures. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

LEIGHSWOOD SCHOOL

Wonder Investigate Learn Discover

Intent

At Leighswood School our young mathematicians develop a positive attitude and fascination as they explore the wonders of the mathematical world. Our children are inspired to become fluently numerate and critical thinkers, enabling them to gain a lasting understanding of essential skills that will serve as lifelong tools. Our aim is for all children to think mathematically and make rich connections across mathematical ideas to develop fluency, mathematical reasoning and problem solving and apply their mathematical knowledge across the curriculum. We want every child to experience a sense of awe and wonder as they solve a problem for the first time, discover different solutions and make links between different concepts. This is enhanced by providing pupils with a deep understanding of the subject through a concrete, pictorial and abstract (CPA) approach.

Implementation

At Leighswood, we teach our children how to make sense of the world around them by developing their ability to calculate, reason and solve problems through a teaching for mastery approach. We follow the Mastering Number programme to deliver our Reception curriculum and to develop a deep understanding of number in KS1. We use the Oak National Academy program to deliver our curriculum from Year 1-6 which was developed based on the Teaching for Mastery approach alongside the NCETM. Underpinning this approach are the five big ideas of fluency, variation, representation and structure, mathematical thinking and coherence which are threaded through the entire curriculum. This means that teaching for mastery principles are embedded within all lessons, representations and questions. As they embark on their journey through the curriculum, children build up their 'tool kit' of strategies to solve calculations in a range of contexts, building their problem solving and reasoning skills. During our maths lessons, children are exposed to: learning both using conceptual and procedural variation; making connections using mathematical thinking; problem solving using a range of different representations; using a wide range of resources to support our CPA approach which are used alongside each other to reinforce concepts; and daily fluency practise to embed core number skills and number sense. In addition to daily maths lessons, we ensure mathematics is embedded across our curriculum so that our children develop as confident mathematicians and can use their mathematical skills in a range of real life contexts beyond the classroom.

Impact

Our approach to mathematics teaching at Leighswood develops children who are resilient and make measurable progress against the National Curriculum objectives with individualised targets. Our children are articulate at being able to show a concept in multiple ways and are able to reason verbally, pictorially and in written form in unfamiliar situations. Our children are confident mathematicians who are not afraid to take risks and are fully developed independent learners with inquisitive minds who have secure mathematical foundations and an interest in self-improvement. Our children think, question, visualise, articulate, infer, learn from their mistakes and look for patterns and connections, all while showing a growth mind-set to enable them to become the best mathematicians they can be.

LEIGHSWOOD SCHOOL

Wonder Investigate Learn Discover

From September 2020, the following areas of maths have been identified as the most important conceptual knowledge and understanding that pupils need as they progress from year 1 to year 6 and therefore should be prioritised. This document aims to bring greater coherence to the national curriculum by exposing core concepts in the national curriculum and demonstrating progression from year 1 to year 6. By meeting the ready-to-progress criteria, pupils will be able to more easily access many of the elements of the national curriculum.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value						
	Children can:	**Children can:**	**Children can**:	**Children can:**	**Children can**:	**Children can:**
	Count within 100, forwards and backwards, starting with any number.	Count beyond 100, forwards and backwards, starting with any number.	Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.	Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.	Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000)
		Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and nonstandard partitioning.	Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.	Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and nonstandard partitioning.	Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning.	Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and nonstandard partitioning.
	Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =	Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.	Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10.	Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.	Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.	Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.
			Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.	Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.	Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.
					Convert between units of measure, including using common decimals and fractions.	

	use key vocabulary to demonstrate knowledge and understanding in this strand: number, digit, numeral , Figure(s) ,multiples, none , zero, one, two, three to twenty, and beyond , count (on/up/to/from/ down), how many, approximately, before, after, between, halfway between, above, below, first, second, third…tenth, eleventh….twentieth, last, more, less, many, few, fewer, least, fewest, smallest, smaller, greater, greatest, largest, equal to, the same as, odd, even, pattern, pair, units, ones, tens, ten more/less, compare ,(In) order/a different order, partition, recombine, size, value, guess how many, estimate, nearly, roughly, about the same as, close to, just over/under, too many, too few, enough, not enough, = the same number as, as many as, representation	use key vocabulary to demonstrate knowledge and understanding in this strand: numbers to one hundred hundreds, thousands, multiple of, exchange, sequence, continue, rule, consecutive, one/ two/three digit number, place value, stands for, represents, = the same number as, as many as, > greater than, < less than, exact, exactly, representation	use key vocabulary to demonstrate knowledge and understanding in this strand: hundred more/less, relationship between, representation, exchange, roman numerals	use key vocabulary to demonstrate knowledge and understanding in this strand: integer, positive, negative, above/below zero, minus, tenths, hundredths, decimal number, decimal place, round up/down, nearest ten/hundred/ thousand, sort, classify, property-	use key vocabulary to demonstrate knowledge and understanding in this strand: ten thousands, hundred thousands, millions, ≥ greater than or equal to, ≤ less than or equal to, ≈ approximate, approximately, ascending, descending order, round up/down, nearest ten/hundred/ thousand/ten thousand/hundred thousand, powers of 10, square number with use of the 2^2 symbol	use key vocabulary to demonstrate knowledge and understanding in this strand: numbers to ten million, ≠not equal to, formula, prime factor, magnitude (in relation to rounding)

LEIGHSWOOD SCHOOL

Wonder Investigate Learn Discover

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number Facts	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**
	Develop fluency in addition and subtraction facts within 10.	Secure fluency in addition and subtraction facts within 10, through continued practice.	Secure fluency in addition and subtraction facts that bridge 10, through continued practice.			
	Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.	Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.	Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	Recall multiplication and division facts up to 12 x 12 , and recognise products in multiplication tables as multiples of the corresponding number.	Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	Secure fluency in multiplication table facts, and corresponding division facts, through continued practice and using them in different contexts.
				Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.		
			Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).	Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)	Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).	
	use key vocabulary to demonstrate knowledge and understanding in this strand: refer to addition, subtraction, multiplication and division vocabulary	use key vocabulary to demonstrate knowledge and understanding in this strand: refer to addition and subtraction vocabulary	use key vocabulary to demonstrate knowledge and understanding in this strand: refer to addition, subtraction, multiplication and division vocabulary	use key vocabulary to demonstrate knowledge and understanding in this strand: refer to multiplication and division vocabulary	use key vocabulary to demonstrate knowledge and understanding in this strand: refer to multiplication and division vocabulary	use key vocabulary to demonstrate knowledge and understanding in this strand: refer to multiplication and division vocabulary

LEIGHSWOOD SCHOOL

Wonder Investigate Learn Discover

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition and Subtraction	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**
	Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.	Add and subtract across 10.	Calculate complements to 100.			Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).
	Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.	Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?".	Add and subtract up to three-digit numbers using columnar methods.			Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.
		Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.	Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.			Solve problems involving ratio relationships.
		Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.				Solve problems with 2 unknowns.

	use key vocabulary to demonstrate knowledge and understanding in this strand: Number bonds, facts, part-part whole, learn its, number line, add, more, plus, make, sum, total, altogether, inverse, double, near double, half, halve, equals, is the same as (including equals sign '='), difference between, one more, two more…, how many more to make..?, how many more is…than..?, how much more is..?, one less, two less…, subtract, take away, minus, how many fewer is…than..?, how much less is..?, decrease, increase, partition	use key vocabulary to demonstrate knowledge and understanding in this strand: ones/ tens column, commutative, tens boundary, efficient, inverse operation, operation	use key vocabulary to demonstrate knowledge and understanding in this strand: Columnar addition and subtraction, hundreds boundary, formal written methods, place holder	use key vocabulary to demonstrate knowledge and understanding in this strand: associative law, distributive law	use key vocabulary to demonstrate knowledge and understanding in this strand: tenths boundary	use key vocabulary to demonstrate knowledge and understanding in this strand: Order of operations, brackets, equivalent expression

LEIGHSWOOD SCHOOL

Wonder Investigate Learn Discover

Multiplication and Division	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Children can:	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**
		Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.	Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.	Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.	Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.	Understand that 2 numbers can be related multiplicatively, and quantify multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).
		Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division)		Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.	Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.	Solve contextual division problems. Simplify fractions. Express fractions in the same denomination.
				Understand and apply the distributive property of multiplication.	Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.	Solve problems involving ratio relationships.
					Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.	Solve problems with 2 unknowns.
	use key vocabulary to demonstrate knowledge and understanding in this strand: odd, even, forwards from/backwards from __ How many times?, lots of, groups of, once, twice, three times, five times, multiple of, times, multiply, multiply by, repeated addition, repeated subtraction, array, row, column, double, halve, half, quarter, share, share equally, group in pairs, equal groups of, divide, divided by, left, left over, facts	use key vocabulary to demonstrate knowledge and understanding in this strand: formal written method, commutative (for multiplication), division, multiple, multiplication,	use key vocabulary to demonstrate knowledge and understanding in this strand: product, multiples of four, eight, fifty and one hundred, scale up	use key vocabulary to demonstrate knowledge and understanding in this strand: inverse, derive, dividend, divisor, quotient, short division, short multiplication,	use key vocabulary to demonstrate knowledge and understanding in this strand: common factor , factor pairs, composite numbers, prime number, prime factors, square number, cubed number, common multiple, divisible, long division, long multiplication	use key vocabulary to demonstrate knowledge and understanding in this strand: order of operations, factorise,

LEIGHSWOOD SCHOOL

Wonder Investigate Learn Discover

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can**:	**Children can:**
			Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.			Recognise when fractions can be simplified, and use common factors to simplify fractions.
			Find unit fractions of quantities using known division facts (multiplication tables fluency).		Find non-unit fractions of quantities.	Express fractions in a common denomination and use this to compare fractions that are similar in value.
			Reason about the location of any fraction within 1 in the linear number system.	Reason about the location of mixed numbers in the linear number system.		Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.
				Convert mixed numbers to improper fractions and vice versa.	Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	
			Add and subtract fractions with the same denominator, within 1.	Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.	Recall decimal fraction equivalents for ½ , ¼,⅕ and $\frac{1}{10}$, and for multiples of these proper fractions.	
	use key vocabulary to demonstrate knowledge and understanding in this strand: fraction, whole, part of a whole, equal parts, four equal parts, one half, two halves, one/a quarter, two quarters	use key vocabulary to demonstrate knowledge and understanding in this strand: numerator, denominator, vinculum, three quarters, four quarters, one whole, one/a third, equivalence, equivalent, unit fraction, non-unit fraction, sharing, grouping	use key vocabulary to demonstrate knowledge and understanding in this strand: compare, order, one tenth, two tenths…., one third, two/three thirds…..	use key vocabulary to demonstrate knowledge and understanding in this strand: decimal fraction, decimal, decimal point, decimal place, equivalent decimals and fractions, fifth, sixth, eighth, twentieth, hundredths, proportion, in every, proper fraction, simplify, quantity	use key vocabulary to demonstrate knowledge and understanding in this strand: proper fraction, improper fraction, mixed numbers, percentage %, per cent, number of part per 100 Equivalent/reduced to, ninth, twelfth, multiples, whole quantity	use key vocabulary to demonstrate knowledge and understanding in this strand: common fractions, common factors, thousandth, degree of accuracy, simplest form

LEIGHSWOOD SCHOOL

Wonder Investigate Learn Discover

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry	**Children can**:	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**
	Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.	Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.	Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.		Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.	
					Compare areas and calculate the area of rectangles (including squares) using standard units.	
	Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.		Draw polygons by joining marked points, and identify parallel and perpendicular sides.	Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.		Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.
				Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.		
				Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.		

	use key vocabulary to demonstrate knowledge and understanding in this strand: -shape 2d, 3d , dimensional -cube, cuboid, pyramid, sphere, cone, cylinder -circle, triangle, square, rectangle, oblong -surface, flat, curved, straight, round, sides join together -hollow, solid -corner (point, pointed), vertex, vertices -face, side, edge -group, sort (venn diagram) -make, build, draw -pattern, repeating pattern	use key vocabulary to demonstrate knowledge and understanding in this strand: -size -bigger, larger, smaller -symmetrical, line of symmetry -fold -match -mirror line, reflection -vertical line -circular, triangular, rectangular, -pentagon, hexagon, heptagon, octagon -quadrilateral -prism (pentagonal, hexagonal, octagonal prisms) -square-based pyramid, triangle based-pyramid, pentagonal pyramid, hexagonal pyramid	use key vocabulary to demonstrate knowledge and understanding in this strand: -right angle, right-angled, degrees, greater/less than right angle/90 degree turn -link angles to quarter turn, half turn, three quarter turn, full turn -horizontal, vertical, perpendicular and parallel lines - layer, diagram -hemi-sphere, spherical -semi-circle, -acute angle, obtuse angle -irregular and regular shapes -symmetrical and non-symmetrical polygons and polyhedra (polyhedron) -diagonal	use key vocabulary to demonstrate knowledge and understanding in this strand: -geometric shapes -Isosceles, scalene (different lengths), equilateral -kite (adjacent sides, pairs of sides) -parallelogram, trapezium -rectilinear -rhombus -construct -net -tetrahedron -translation --acute, obtuse	use key vocabulary to demonstrate knowledge and understanding in this strand: -congruent -decagon, dodecagon, nonagon -tetrahedron, octahedron -reflection, reflective symmetry -axis of symmetry - reflex angles -quadrant -acute, obtuse, reflex angle - protractor -angle at a point (that sum up to 360 degrees) -angle on a line (that sum up to 180 degrees) -transformation (translations, reflections, rotation and enlargement are types of transformations)	use key vocabulary to demonstrate knowledge and understanding in this strand: -centre, radius, diameter, circumference -arc -compass -twice the size (diameter) -vertically opposite (angles) -intersecting, intersection plane -dodecahedron

LEIGHSWOOD SCHOOL

Wonder Investigate

Maths in EYFS

A Unique Child: what a child might be doing

RANGE 3

Comparison
- Responds to words like *lots* or *more*

Counting
- Says some counting words
- May engage in counting-like behaviour, sounds and pointing or saying some nu sequence

Cardinality
- Uses number words, like one or two and responds accurately when asked to give things

Spatial Awareness
- Enjoys filling and emptying containers
- Investigates fitting themselves inside a through spaces

Shape
- Pushes objects through different shape and attempts to fit shapes into spaces o boards or puzzles
- Beginning to select a shape for a specif
- Enjoys using blocks to create their own structures and arrangements

Pattern
- Becoming familiar with patterns in dail
- Joins in with and predicts what comes n story or rhyme
- Beginning to arrange items in their own e.g. lining up toys

RANGE 3 (cont.)

Measures
- Shows an interest in size and weight
- Explores capacity by selecting, filling and emptying containers, e.g. fitting toys in a pram
- Beginning to understand that things might happen now or at another time, in routines

RANGE 4

Comparison
- Beginning to compare and recognise changes in numbers of things, using words like *more, lots or 'same'*

Counting
- Begins to say numbers in order, some of which are in the right order (ordinality)

Cardinality (*How many?*)
- In everyday situations, takes or gives two or three objects from a group
- Beginning to notice numerals (number symbols)
- Beginning to count on their fingers.

Spatial Awareness
- Moves their bodies and toys around objects and explores fitting into spaces
- Begins to remember their way around familiar environments
- Responds to some spatial and positional language
- Explores how things look from different viewpoints including things that are near or far away

Shape
- Chooses puzzle pieces and tries to fit them in
- Recognises that two objects have the same shape
- Makes simple constructions

RANGE 4 (cont.)

Pattern
- Joins in and anticipates repeated sound and action patterns
- Is interested in what happens next using the pattern of everyday routines

Measures
- Explores differences in size, length, weight and capacity
- Beginning to understand some talk about immediate past and future
- Beginning to anticipate times of the day such as mealtimes or home time

A Unique Child: what a child might be doing

RANGE 5

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
- May enjoy counting verbally as far as they can go
- Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5.
- Uses some number names and number language within play, and may show fascination with large numbers
- Begin to recognise numerals 0 to 10

Cardinality
- Subitises one, two and three objects (without counting)
- Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle)
- Links numerals with amounts up to 5 and maybe beyond
- Explores using a range of their own marks and signs to which they ascribe mathematical meanings

Composition
- Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers
- Beginning to use understanding of number to solve practical problems in play and meaningful activities
- Beginning to recognise that each counting number is one more than the one before
- Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same

Shape
- Chooses items based on their shape which are appropriate for the child's purpose
- Responds to both informal language and common shape names
- Shows awareness of shape similarities and differences between objects
- 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

Pattern
- Creates their own spatial patterns showing some organisation or regularity
- Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC)
- Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next

Measures
- In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items
- Recalls a sequence of events in everyday life and stories

Spatial Awareness
- Responds to and uses language of position and direction
- Predicts, moves and rotates objects to fit the space or create the shape they would like

RANGE 6

Comparison
- Uses number names and symbols when comparing numbers, showing interest in large numbers
- Estimates of numbers of things, showing understanding of relative size

Counting
- Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0
- Increasingly confident at putting numerals in order 0 to 10 (ordinality)

Cardinality
- Engages in subitising numbers to four and maybe five
- Counts out up to 10 objects from a larger group
- Matches the numeral with a group of items to show how many there are (up to 10)

Composition
- Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects
- 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
- In practical activities, adds one and subtracts one with numbers to 10
- Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"

Spatial Awareness
- Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints
- Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning)
- May enjoy making simple maps of familiar and imaginative environments, with landmarks

RANGE 6 (cont.)

Shape
- Uses informal language and analogies, (e.g. *heart-shaped and hand-shaped leaves*), as well as mathematical terms to describe shapes
- Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes
- Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build

Pattern
- Spots patterns in the environment, beginning to identify the pattern "rule"
- Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat

Measures
- Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy
- Becomes familiar with measuring tools in everyday experiences and play
- Is increasingly able to order and sequence events using everyday language related to time
- Beginning to experience measuring time with timers and calendars

ANGE 6 (cont.)

Statutory ELG: Number

Children at the expected level of development will:

- 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.

Statutory ELG: Numerical Patterns

Children at the expected level of development will:

- 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.

Statutory Educational Programme: Mathematics

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.