Vertical progression – Mathematics – Number & Numerical Patterns - Maths overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking

ELG

Number

- 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 Patterns

- 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

Focus	Place Value: Counting	Place Value: Represent	Place Value: Use & compare	Addition & Subtraction: Recall, represent, use	Addition & Subtraction: Calculations	Addition & Subtraction: Solve problems
Nursery	• Recite numbers past 5 • Say one number for each item in order: 1,2,3,4,5 • Develop fast recognition of up to 3 objects, without having to count them individually ('subitising')	• Show 'finger numbers' up to 5 • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.	• Compare quantities using language: 'more than', 'fewer than'	• Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle') • Experiment with their own symbols and marks as well as numerals		• Solve real world mathematical problems with numbers up to 5
Vocabulary	***Longest, shortest, biggest, smallest, middle, fewer, more, less, how many***					
Reception	• Enjoys reciting numbers from 0 to 10 and beyond and back from 10 to 0 • Counts out up to 10 objects from a larger group	• Engages in subitising numbers to four and maybe five • 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)	• Uses number names and symbols when comparing numbers, showing interest in large numbers • Estimates of numbers of things, showing understanding of relative size	• Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and + or - • Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects	• In practical activities, adds one and subtracts one with numbers to 10	• 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
Vocabulary	***subitise, match, same, different, pair, sort, compare, set, more, fewer, same amount, most, fewest, equal groups, sharing, grouping, odd, even***			***subtraction, more, less, number line add, plus, make, sum, total, altogether, combine, double, half, equals, subtract, take away, minus, is the same (including equals sign) How many more to make…? How many more is,,, then,,,? How much more is…?***		
Year 1	• Count to & across 100,	• Identify & represent	• Given a number, identify	• Read, write & interpret	• Add & subtract one-	• Solve one-step problems

	forwards & backwards, starting from 0, or 1, or from any given number • Count numbers to 100 in numerals; count in multiples of twos, fives & tens	numbers using objects & pictorial representations • Read & write numbers to 100 in numerals • Read & write numbers from 1 to 20 in numerals & words	one more & less	mathematical statements involving addition, subtraction & equals signs • Represent & use number bonds & related subtraction facts within 20	digit & two-digit numbers to 20, including zero	that involve addition & subtraction, using concrete objects & pictorial representations, & missing number problems
Vocab	***Greater, lesser, pair, ones, tens, ten more/less, figure (s) in order/ a different order, above, below***			***Number bonds, inverse, near doubles, difference between, how many fewer is…than…? How much less is…?***		

Vertical progression – Mathematics – Shape, Space & Measures - Maths overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking

ELG
None

Focus	Spatial Awareness	Shape	Pattern	Measures
Nursery	• Understand position through words alone – for example, "The bag is under the table," – with no pointing • Describe a familiar route • Discuss routes and locations, using words like 'in front of' and 'behind'	• 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' • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. • Combine shapes to make new ones – an arch, a bigger triangle, etc.	• Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. • 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...'	• Make comparisons between objects relating to size, length, weight and capacity
Vocabulary	***under, behind, on top, up, down, in, in-between***	***2D, 3D, curvy, flat, solid, edges, points, straight, sides***	***broken pattern, correct, Can you follow the pattern? shape, size, colour patterns, patterns on clothing, clap patterns***	***Heavy, light, full, empty, half-full, yesterday, today, tomorrow, long, short, tall, big, small, gigantic, scales, weight***
Reception	• 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	• 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	• 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	• 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

	landmarks			timers and calendars
Vocabulary	***whole, equal, one, flat, half, curved, straight, round Solid Corner Face, side, over, under, underneath, above, below, top, bottom, side on, in, outside, inside, in front, behind, front, back, before, after, beside, next to, middle, up, down, forwards, backwards. sideways close, far through towards, away from side, roll, turn***	***Sort cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square shape flat, curved, straight, round solid corner face, side make, build, draw, forwards, backwards, left, right, directions***	***start from, look at, point to put what comes next? find, use, make, build tell me, describe, pick out, talk about, explain, show me, what do you see? How do you see it?***	***full, half, empty, container, weigh, balance, heavy, heavier, heaviest, light, lighter, lightest, scales, time, days of the week: Monday, Tuesday etc. seasons: spring, summer, autumn, winter, days, week, month, year, weekend, birthday, holiday, morning, afternoon, evening, night, bedtime, length, height, longer, longest, shorter, shortest, taller, tallest, higher, highest, money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change how much? how many? total***
Year 1	• *Describe position, direction & movement including whole, half, quarter & three-quarter turns*	• *Recognise & name common 2D shapes* • *Recognise & name common 3D shapes*		• *Compare, describe & solve practical problems involving:* *Lengths / heights* *Mass / weight* *Capacity / volume* *Time* • *Measure & record the following:* *Lengths / heights* *Mass / weight* *Capacity / volume* *Time* • *Recognise & know the value of different denominations of coins & notes* • *Sequence events in chronological order using language* • *Recognise & use language relating to dates* • *Tell the time to the hour & half past the hour & draw the hands on a clock face to show these times*
Vocab	***position around opposite apart between, edge, centre corner direction journey left, right across near along to, from movement whole turn, half turn, stretch, bend***	***corner, vertices, edge, 2D, 3D***		***Midnight, now, soon, early, late quick, quicker, quickly, fast, slow, slower old, older, oldest, new, newer, newest takes longer, takes less time hour, o'clock, half past watch, hands how long ago? how long will it be to…? how long will it take to…? how often? Costs more, costs less, dear(er), cheaper, costs the same as, coin, note, value, total, penny, pence, pound*** ***Width, depth, capacity, full, half, empty, full, heavier, lighter***

				Long, short, tall, high low, wide, far, near, close metre, ruler, metre stick