

Woodlands Infant School



Maths curriculum

Progression of skills, knowledge and vocabulary

Woodlands Infant School

The best me I can be!

Progression in Disciplinary Knowledge

	Nursery	Reception	Year 1	Year 2
Fluency	Develop confidence in counting small quantities, securing stable order , one-to-one correspondence and cardinality . Use language such as more , less , same .	Develop automatic recall of number bonds within 5 and some to 10, securing fluency in composition to 10 and using language such as part , whole , equal .	Recall number bonds within 10 and 20 and apply them efficiently in addition and subtraction within 20, using vocabulary such as add , subtract , total , difference .	Recall addition and subtraction facts to 20 and multiplication and division facts for the 2, 5 and 10 times tables, applying them efficiently within calculations using precise terms such as inverse , multiple , product , quotient .
Representing and modelling	Represent quantities using objects , marks , numerals and everyday language.	Use manipulatives , five-frames , ten-frames and drawings to represent numbers and part-whole models .	Use structured representations such as part-whole models , number lines and arrays to support calculation.	Move flexibly between concrete , pictorial and abstract representations, selecting models such as arrays , bar models and number lines strategically.
Reasoning and Justifying	Describe quantities and shapes using simple language such as bigger , smaller , more than .	Explain composition and patterns using terms such as greater than , fewer , equal , double .	Explain strategies using precise vocabulary including greater than , less than , equals , difference , fact family .	Justify solutions logically, using terminology such as commutative , inverse , partition , equivalent , and mathematical symbols < , > , = accurately.
Pattern seeking and generalising	Recognise and create simple repeating patterns (AB) and notice when patterns change.	Extend patterns and recognise number relationships such as one more , one less , double , odd , even .	Identify structure in equal groups , arrays , counting in multiples of 2, 5 and 10 and patterns in the place value system.	Generalise relationships within multiplication tables , multiples and structural links between representations.
Problem solving and application	Solve practical problems through play involving sharing , building and comparing quantities.	Solve addition and subtraction problems using objects and drawings, applying strategies such as counting on and counting back .	Solve one-step problems involving number and measure, selecting appropriate representations and using vocabulary such as altogether , difference , measure , length .	Solve one- and two-step problems involving number, measure , money , and data , selecting efficient strategies and checking for reasonableness .

Woodlands Infant School

The best me I can be!

Progression in Substantive Knowledge

	Nursery	Reception	Year 1	Year 2
Number and Place Value	Verbally count to 5 and beyond in sequence (stable order principle). Say one number name for each item counted (one-to-one correspondence). Understand that the last number counted represents the total (cardinality). Recognise that objects can be counted regardless of colour, shape, size etc (abstraction principle). Recognise that objects can be counted regardless of arrangement (order irrelevance principle). Subitise up to 3. Begin to link numerals to quantities to 5. Compare quantities using more and less.	Verbally count to 10 and beyond 20 in sequence (stable order principle). Count objects, actions and sounds with one-to-one correspondence. Subitise up to 5. Link numerals to quantities to 10 (cardinal principle) Compare quantities using mathematical language more, greater than, less than and fewer. Recognise one more and one less relationships. Explore composition of numbers to 10 using whole and parts.	Count to and across 100 forwards and backwards, beginning / ending with 0 or 1, or from any given number. Read and write numbers to 100 in numerals. Read and write numbers from 1 to 20 in words. Count in multiples of 2, 5 and 10. Use the mathematical language of: equal to, more than, less than, most and least Identify one more and one less within 100. Compare and order numbers to 100. Represent numbers using objects, pictorial models and number lines.	Count in multiples of 2, 5 and 10 and in tens from any number, forwards and backwards. Compare and order numbers to 100 using $<$, $>$ and $=$. Use mathematical language of: equal to, greater than, less than Recognise the place value of each digit in a two-digit number (tens and ones). Identify, represent and estimate numbers using different representations, including the number line. Partition numbers flexibly into tens and ones. Read and write numbers to at least 100 in numerals and words. Use place value and number facts to solve problems.
	Key vocabulary: amount, count, few, fewer (than), more (than), number, numeral, same, smallest, largest, subitise	Key vocabulary: after, before, different, represent, zero	Key vocabulary: compare, digit, fewest, greater than, greatest, less than, most, order, partition, represent, ten(s), one(s), ordinal numbers (first, second, third)	Key vocabulary: ascending, descending, exchange, interval, least, multiple, value
Additive Relationships	Notice when quantities change through practical experiences of taking and giving. Begin to understand that adding increases quantity and taking away decreases quantity. Use language such as more, less, add and take away in practical contexts.	Partition and combine numbers to 5 and some to 10 in different ways. Understand the part-whole structure of numbers to 10. Automatically recall number bonds within 5 and some to 10. Solve practical problems by adding and taking away within 10 using	Represent and use number bonds and related subtraction facts within 10 and 20. Add and subtract one-digit and two-digit numbers within 20, including zero. Understand and use the symbols $+$, $-$ and $=$ to write number sentences. Use part-whole models and number lines to support calculation.	Recall and use addition and subtraction facts to 20 fluently and derive related facts to 100. Add and subtract two-digit numbers using concrete, pictorial and mental methods, including crossing tens. Understand and use the inverse relationship between addition and subtraction. Apply commutativity of addition and recognise that subtraction is not commutative.

Woodlands Infant School

The best me I can be!

	Nursery	Reception	Year 1	Year 2
	Begin to recognise that small quantities can be combined and separated.	manipulatives and pictorial representations. Begin to record number sentences using informal methods.	Solve one-step problems involving addition and subtraction, using concrete objects and pictorial representations, including missing number problems.	Solve increasingly complex problems involving numbers, quantities and measures.
	Key vocabulary: 1 more, 1 less, add, add more, altogether, first, left, now, part, take away, whole	Key vocabulary: addition, subtraction, difference, double, equal to, fact family, greater, group, inverse, less, minus, near double, number bond, plus, symbol, systematic, total	Key vocabulary: calculation, method, multiple, one(s), operation, partition, related facts, ten(s), value, increase, decrease, sum	Key vocabulary: column addition, column subtraction, digit, estimate, exchange, hundred(s), inverse, crossing the 10, crossing the 100
Number patterns and Multiplicative Relationships	Join in with and continue simple repeating patterns.	Continue, copy and create repeating patterns beyond AB.	Count in multiples of 2, 5 and 10 from zero.	Count in multiples of 2, 5 and 10 from 0, and in tens from any number, forwards or backwards
	Recognise and copy AB patterns using objects, sounds and actions.	Explore doubling through practical experience and pattern recognition.	Recognise, make and add equal groups.	Recall and use multiplication and division facts for the 2, 5 and 10 times tables.
	Create simple repeating patterns. Begin to notice when patterns break or change. Develop early awareness of repetition as a mathematical structure.	Share quantities equally in practical contexts. Combine equal groups using manipulatives. Recognise odd and even patterns within numbers to 10. Verbally count beyond 20, recognising the pattern of the number system.	Begin to represent equal groups using arrays and repeated addition. Solve one-step multiplication and division problems using concrete and pictorial representations. Begin to understand grouping and sharing as division structures.	Recognise odd and even numbers to 100. Use arrays to represent multiplication and division relationships. Understand and apply the commutative property of multiplication. Calculate multiplication and division statements using $\times$, $\div$ and $=$ symbols. Solve increasingly complex problems involving multiplication and division in context.
	Key vocabulary: double, equal groups, even, fair, grouping, groups, odd, pair, sharing, unequal groups	Key vocabulary: array, divide, repeated addition	Key vocabulary: divide, even, half, lots of, multiply, odd, twice, times	Key vocabulary: commutative, inverse, multiple, product, remainder, scaling
Fractions	Begin to experience sharing through practical play. Develop awareness that objects can be divided into parts.	Understand and use the language of whole and parts. Share quantities equally between small groups.	Recognise and name one half as one of two equal parts of an object, shape or quantity. Recognise and name one quarter as one of four equal parts of an object, shape or quantity.	Recognise, find, name and write the fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of shapes, lengths and quantities. Understand the difference between unit and non-unit fractions. Recognise the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$.

Woodlands Infant School

The best me I can be!

	Nursery	Reception	Year 1	Year 2
	Use everyday language such as share and same when distributing objects.	Recognise that equal sharing results in the same amount for each group. Explore how quantities can be distributed equally.	Find half and quarter of shapes and quantities through practical methods.	Write simple fraction statements such as $\frac{1}{2}$ of 6 = 3.
	Key vocabulary: share, parts	Key vocabulary: equal parts, half, quarter, whole	Key vocabulary: numerator, denominator, equivalent, unit fraction, non-unit fraction, third, two-quarters, three-quarters	Key vocabulary: scale, compare, convert
Geometry	Talk about and explore 2-D and 3-D shapes through play, using informal language such as sides, corners, straight, flat and round. Select shapes appropriately for building and play. Combine shapes to make new shapes and structures. Understand and describe position using language such as under, behind and in front of. Describe familiar routes and identify simple repeating patterns.	Select, rotate and manipulate shapes to develop spatial reasoning. Compose and decompose shapes, recognising that shapes can be made from other shapes. Continue, copy and create repeating patterns beyond AB patterns and identify errors in patterns. Develop increasing precision in positional language. Recognise 2-D and 3-D shapes in the environment.	Recognise, name and describe common 2-D shapes including rectangles, squares, circles, triangles, pentagons and hexagons. Recognise, name and describe common 3-D shapes including cuboids, cubes, pyramids, cones, cylinders and spheres. Sort and compare shapes based on properties. Describe position, direction and movement including half, quarter and three-quarter turns.	Identify and describe properties of 2-D shapes including number of sides and lines of symmetry in a vertical line. Identify and describe properties of 3-D shapes including number of faces, edges and vertices. Identify 2-D shapes on the surface of 3-D shapes. Compare and sort shapes and everyday objects. Use precise mathematical vocabulary to describe position, direction and movement, including rotation in right angles and clockwise and anti-clockwise turns.
	Key vocabulary: build, curved, different, flat, match, pointy, round, same, sharp, stack	Key vocabulary: 2-D shape, 3-D shape, circle, cone, corner, cube, cuboid, curved, cylinder, face, flat, pyramid, rectangle, rotate, set, sides, solid, sort, sphere, square, straight, surface, triangle	Key vocabulary: edge, line of symmetry, symmetrical, vertex, vertices	Key vocabulary: acute, obtuse, angle, vertical, horizontal, parallel, perpendicular, polygon, right angle
Measurement	Make comparisons between objects relating to size, length, weight and capacity using language such as larger, smaller, longer, shorter, heavier, lighter, full and empty. Begin to describe sequences of events using language such as first, then, earlier and later.	Compare length, height, weight and capacity using vocabulary such as longer than, shorter than, heavier than and lighter than. Explore mass and capacity through practical investigation.	Compare, describe and solve practical problems involving length and height, mass and weight, capacity and volume and time. Measure and begin to record length, mass, capacity and time using non-standard and standard units.	Compare and order lengths, mass, volume and capacity using greater than, less than and equals. Choose and use appropriate standard units to estimate and measure length, mass, temperature and capacity.

Woodlands Infant School

The best me I can be!

	Nursery	Reception	Year 1	Year 2
	Develop awareness of measure through practical play and everyday routines.	Order events and begin to discuss time in relation to daily routines. Use informal comparison to describe differences between quantities.	Sequence events in chronological order using time language (e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.) 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. Recognise and know the value of different coins and notes.	Tell and write the time to quarter past and quarter to and know the number of minutes in an hour and hours in a day. Recognise and use symbols for pounds and pence and solve simple problems involving money and giving change. Apply addition and subtraction when solving problems involving measures.
	Key vocabulary: big, bigger, large, little, small, smaller, first, next, now, then	Key vocabulary: height, length, long, longer, longest, measure, short, shorter, shortest, tall, taller, tallest, balanced, empty, full, heavier, lighter, mass, weight, after, before, clock, day, minute, today, tomorrow	Key vocabulary: centimetres, ruler, capacity, container, volume, hour, o'clock, month, week, second, coin, note, money, pence (p), pound (£), value	Key vocabulary: metres, grams, kilograms, litres, millilitres, temperature, thermometer, degrees, five-minute intervals, quarter past, quarter to, midnight, noon, change, cost, worth
Statistics	Begin to notice similarities and differences between objects. Sort and group objects according to simple criteria during play. Talk about preferences and simple comparisons in everyday contexts.	Sort objects into groups based on given criteria. Compare quantities in different contexts and discuss which has more or fewer. Begin to represent information informally through real-life experiences such as class votes or preferences.	Organise objects and information to answer simple questions. Use counting and comparison to interpret simple groupings in practical contexts. Develop understanding that information can be grouped to help answer questions.	Interpret and construct simple pictograms, tally charts, block diagrams and tables. Ask and answer questions by counting the number of objects in each category. Compare categories and totals using mathematical language. Use data to solve simple problems.
	Key vocabulary: sort, group, same, different, compare, match, choose	Key vocabulary: sort, group, category, set, more, fewer, most, least, compare, record	Key vocabulary: block diagram, key, pictogram, table, tally chart, collect, record	Key vocabulary: axis, bar chart, cell, horizontal axis, label, scale, title, vertical axis, two-way table