How learning builds in Maths

A guide for parents and carers | Years 3 to 6

This guide shows the main steps in children's mathematical learning at Kempshott Junior School. Read across each row to see how knowledge develops. It summarises key milestones rather than every objective or the order of teaching. Earlier learning continues to be practised and applied as children meet new ideas.

Building on Key Stage 1

Children build on their understanding of tens and ones, number bonds, the 2, 5 and 10 times tables, simple fractions, shapes and measures. Practical equipment, pictures and mathematical talk help them connect what they already know with new learning.

Number and calculation

Area	Year 3	Year 4	Year 5	Year 6
Number and place value	Understand hundreds, tens and ones in numbers up to 1,000. Compare and order numbers and find 10 or 100 more or less.	Understand four-digit numbers and compare numbers beyond 1,000. Round to the nearest 10, 100 or 1,000. Count backwards through zero. Read Roman numerals to 100.	Read and compare numbers to at least 1,000,000. Round larger numbers and interpret negative numbers in context. Read Roman numerals to 1,000.	Read and compare numbers up to 10,000,000. Choose a suitable level of rounding and calculate differences across zero, for example between negative and positive temperatures.
Addition and subtraction	Use mental strategies and column methods with numbers up to three digits. Estimate answers and check using the opposite operation.	Use column methods with numbers up to four digits. Choose methods to solve two-step problems and explain the choices.	Calculate mentally with larger numbers and use written methods with more than four digits. Solve problems involving several steps and check whether answers are reasonable.	Select efficient mental or written methods for larger calculations. Solve problems involving several operations and use the correct order of operations.
Multiplication and division	Recall the 3, 4 and 8 times tables and related division facts. Multiply two-digit numbers by one digit. Use known facts to solve division and scaling problems.	Recall multiplication and division facts up to 12 × 12. Multiply two- and three-digit numbers by one digit. Use factor pairs and known facts to calculate mentally.	Multiply numbers up to four digits by one or two digits. Divide up to four digits by one digit and interpret remainders. Explore factors, multiples, primes, squares and cubes.	Multiply up to four digits by two digits and divide up to four digits by two digits. Interpret remainders to suit the problem. Use common factors and multiples to support calculations.

Developing confidence: children build accurate recall of number facts alongside understanding. They learn to choose a method, explain why it works and check their answer.

Fractions and mathematical relationships

Children connect fractions, decimals and percentages as different ways to describe numbers and quantities. Work with patterns, missing numbers and scaling prepares them for ratio and algebra.

Area	Year 3	Year 4	Year 5	Year 6
Fractions	Understand tenths and find fractions of quantities. Recognise equivalent fractions, such as 1/2 and 2/4. Compare simple fractions and add or subtract fractions with the same denominator within one whole.	Understand hundredths and recognise families of equivalent fractions. Find fractions of quantities and add or subtract fractions with the same denominator.	Compare fractions with related denominators and convert between mixed numbers and improper fractions, such as 1 1/2 and 3/2. Add and subtract fractions with related denominators. Multiply fractions and mixed numbers by whole numbers.	Simplify and compare fractions with different denominators. Add and subtract fractions and mixed numbers. Multiply pairs of simple fractions and divide fractions by whole numbers.
Decimals and percentages	Build foundations for decimals by understanding tenths as ten equal parts of a whole and linking tenths to division by 10.	Read and compare decimals to two decimal places. Connect decimals to tenths, hundredths and familiar fractions. Divide by 10 and 100 and round one-decimal-place numbers to whole numbers.	Read, compare and round decimals with up to three decimal places. Understand percentages as parts out of 100 and connect familiar fractions, decimals and percentages.	Calculate with decimals, including multiplying and dividing by whole numbers. Use equivalent fractions, decimals and percentages to compare values and find percentages of quantities.
Scaling and ratio	Solve simple scaling problems, such as finding a length that is three times as long.	Use multiplication and division to solve scaling and grouping problems in different contexts.	Use multiplication, division and fractions to scale quantities, building towards ratio.	Solve ratio and proportion problems, including sharing in unequal parts, adjusting recipes and working with scale factors.
Patterns and algebra	Find missing numbers in calculations and explain patterns using known number facts.	Explore number relationships and missing values. Connect multiplication, measurement and patterns.	Use missing-number statements and relationships between quantities to explain calculations and find unknown lengths.	Use letters for unknown numbers and simple formulae. Describe number sequences and find possible pairs of values that satisfy a rule.

Making connections

For example, knowing that 1/2 and 2/4 represent the same amount supports later understanding that 1/2 = 0.5 = 50%. Children use these connections when comparing quantities, calculating with money and interpreting data.

Measurement shape and data

Children apply their number knowledge to practical situations. They become more precise when measuring, describing shapes and interpreting information.

Area	Year 3	Year 4	Year 5	Year 6
Measurement	Measure and compare length, mass and capacity. Calculate perimeter and solve money problems. Tell the time to the nearest minute and work out durations.	Convert familiar units, including time. Use 12- and 24-hour clocks. Calculate perimeter, find area by counting squares and solve money problems with decimals.	Convert metric units and use approximate imperial equivalents. Calculate rectangle areas and perimeters of joined rectangles. Estimate volume and capacity and solve time problems.	Convert units using decimals, including miles and kilometres. Calculate triangle and parallelogram areas and cube and cuboid volumes. Explore how area and perimeter are related.
Shape and angles	Draw 2D shapes and make 3D shapes. Recognise right angles, parallel lines and lines that meet at a right angle. Describe turns.	Classify triangles and four-sided shapes. Compare acute and obtuse angles and identify and complete lines of symmetry.	Measure and draw angles in degrees. Use angle facts about straight lines and full turns. Distinguish regular and irregular polygons and recognise 3D shapes from drawings.	Draw shapes accurately and make nets of 3D shapes. Find missing angles using shape properties. Name the radius, diameter and circumference of a circle.
Position and movement	Describe position and movement using direction, turns and knowledge of horizontal and vertical lines.	Plot coordinates in the first quadrant of a grid, where both values are positive. Describe movements left, right, up and down.	Reflect and translate shapes, describing how their position changes while their shape and size stay the same.	Use all four quadrants of a coordinate grid, including negative values. Draw, reflect and translate shapes on the grid.
Statistics	Read and create pictograms, bar charts and tables. Answer questions by comparing and calculating with the data.	Choose suitable graphs, including bar charts and time graphs. Use information to solve comparison, total and difference problems.	Interpret line graphs and read and complete tables, including timetables. Use data to solve problems.	Read and construct pie charts and line graphs. Calculate and interpret the mean average and use data to solve problems.

Reasoning and problem solving throughout

Across all year groups, children explain their thinking, compare methods and use examples to test ideas. They progress from solving familiar problems to choosing strategies for problems with several steps. Equipment, diagrams and accurate mathematical vocabulary continue to support understanding.

These foundations prepare children for secondary mathematics, where they extend their work with number, algebra, geometry and data.

Sources: Kempshott Junior School's existing maths progression overview and the Department for Education mathematics programmes of study. National Curriculum content © Crown copyright, used under the Open Government Licence v3.0. This is a summary for families, not a pupil assessment checklist.

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