Maths Curriculum at Kings College Guildford

Our approach to maths

Our aim is simple: to give every student the mathematical skills and confidence they need for life beyond school. The curriculum is broad and balanced, and we actively encourage students to try new methods, take risks, and see mistakes as part of learning.

We follow the National Curriculum over a three-year Key Stage 3 (Years 7–9) and a two-year Key Stage 4 (Years 10–11, leading to GCSE).

Our curriculum uses a "mastery" approach. Rather than rushing through content, we slow down to make sure every student deeply understands a topic before moving on to harder material. In practice, this means:

- All students are taught the full curriculum, so no one misses out on key content.
- Students who grasp ideas quickly are stretched through problem-solving and open-ended tasks, rather than simply moving on to new topics.
- Mixed-ability classes in Years 7 and 8 allow every student to learn alongside their peers, with extra support built in where needed.

Students who need additional support (for example, those in the Harbour or Bridge provisions) follow the same curriculum, with extra lessons or intervention to consolidate earlier learning.

How classes are grouped

Years 7 and 8

All students follow the same curriculum in mixed-ability groups.

Year 9

Students are placed into one of three groups — Higher, Intermediate or Foundation — based on their progress so far:

- Higher: for students ready to move straight into more advanced content.
- Intermediate: the majority of students, most of whom go on to join the Higher GCSE course in Year 10.
- Foundation: for students who benefit from extra time securing the basics before starting the GCSE Foundation course in Year 10.

Years 10 and 11 (GCSE)

Students work towards either the Foundation or Higher tier GCSE with Edexcel. The course is designed to be finished by the Spring term of Year 11, leaving plenty of time for revision — though teachers use their judgement to adjust pace for their class.

Students in the top two sets in Year 10 also take an additional one-year GCSE in Statistics (Edexcel).

Class teachers use their professional judgement about pace and content, based on what their students need.

How we give feedback

Students receive written feedback at least twice per module. This takes the form of whole-class feedback highlighting "What Went Well" (WWW) and "Even Better If" (EBI) points on a recent piece of work, followed by a DART task — a short, focused activity to address the specific area for improvement identified.

From module 3 of Year 11 onwards, students complete a past or practice exam paper every week. The teacher models the answers live in class, helping students see exactly what a strong answer looks like while building up a set of revision materials for later use.

Year 7

The year begins with a baseline assessment, then moves through six half-termly modules covering number, shape, data and early algebra.

Term	What they'll be learning
Module 1	Getting started with number: place value, the four operations, negative numbers, powers, roots and calculator skills.
Module 2	Units and shape: metric and imperial units, polygons and symmetry, alongside an introduction to handling data — types of data, questionnaires, tally charts, pictograms and bar charts, plus factors, multiples and primes.
Module 3	Fractions and averages: rounding, fractions of amounts, equivalent and mixed fractions, ordering and adding/subtracting fractions, two-way tables and averages.
Module 4	Working with fractions and algebra: multiplying and dividing fractions, reciprocals, collecting like terms, forming expressions, and converting between fractions, decimals and percentages.
Module 5	Algebra, percentages and ratio: expanding brackets, substitution, function machines, decimals, percentage change, ratio and the unitary method.
Module 6	Revision, exams, and a statistics project on animal data.

Year 8

Term	What they'll be learning
Module 1	Angles and sequences: angles, number sequences, area of squares, rectangles, parallelograms and compound shapes, and volume of cubes and cuboids.
Module 2	Probability and number: probability scales and language, converting probabilities to fractions/decimals/percentages, sample space diagrams, experimental vs. theoretical probability, Venn diagrams, frequency trees, prime factorisation, HCF and LCM.
Module 3	Graphs and shape: substitution with powers, coordinates and plotting linear/real-life graphs, rotation, enlargement, 3D shapes, plans and elevations.
Module 4	Percentages, ratio and angles: percentage increase/decrease, simplifying and working with ratio, angles in parallel lines, triangles and quadrilaterals, exterior angles in polygons.
Module 5	Algebra and data: index laws, expanding brackets (including powers), dividing terms, factorising, solving linear equations, inequalities, scatter graphs and correlation, stem and leaf diagrams, time-series graphs and moving averages.
Module 6	Pie charts and comparing statistical charts, revision, exams, and a statistics project on “Megacities”.

Year 9

Year 9 marks the start of streaming. All three groups build a strong foundation for GCSE, but move at a pace suited to the group.

Term	Higher	Intermediate	Foundation
Module 1	Decimals, area/perimeter (incl. circles), index laws, standard form, significant figures, HCF/LCM, roots and surds.	Decimals, area/perimeter, negative numbers, index laws, standard form, circles, significant figures.	The four operations, factors/multiples/primes, equivalent fractions, fraction and decimal operations, negative numbers.
Module 2	Surds, Pythagoras' Theorem, trigonometry, substitution, vectors, expanding/factorising quadratics, percentages and interest.	Roots and surds, HCF/LCM, simplifying and expanding/factorising expressions, averages, percentages and interest.	Area/perimeter, circle vocabulary, powers and roots, order of operations, calculator and rounding skills.
Module 3	Solving quadratics, rearranging formulae, linear equations and simultaneous equations, gradients, sequences, conversion and time-series graphs.	Proportion (direct/inverse, reverse percentages), proportion graphs, expressions, solving equations, compound measures, real-life and linear graphs.	Collecting like terms, forming expressions, expanding/factorising, solving equations, rearranging formulae, linear graphs.
Module 4	Real-life and proportion graphs, reverse percentages, direct proportion, compound measures.	Gradient, quadratic graphs, expanding/solving quadratics, ratio in worded problems, angles.	Sequences, charts (bar, pictogram, pie, scatter), volume of prisms.
Module 5	Surface area, angles, constructions, percentages, histograms, probability trees, algebraic fractions.	Angles in polygons, Pythagoras' Theorem, trigonometry, probability (events and trees), rearranging formulae.	Speed/distance/time, proportion with graphs, volume, congruence, angle facts, probability, two-way and frequency tables.
Module 6	Algebraic fractions, averages and quartiles, boxplots, risk, scatter graphs, pie charts, and a statistics project on Space.	Congruence, transformations (translation/rotation/reflection/enlargement/similarity), scatter graphs, frequency polygons, and a statistics project on Space.	Intro to Pythagoras and trigonometry, percentage change, ratio, and a statistics project on Space.

Years 10–11: GCSE (Key Stage 4)

The GCSE curriculum below is organised by topic area rather than by term, since the pace varies between classes and the two-year course is designed to be completed by early in Year 11. Students take the Edexcel GCSE at Foundation or Higher tier.

Higher tier

Builds on Year 9 Higher work and covers, among other things:

- Number: fractions, indices, standard form, surds, bounds.
- Algebra: expanding, factorising and solving linear/quadratic/simultaneous equations, sequences, graphs (linear, quadratic, cubic, reciprocal, exponential, circles), functions and algebraic fractions.
- Ratio, proportion and rates of change: percentages, compound interest, direct/inverse proportion, compound measures, gradients and rates of change.
- Geometry: Pythagoras and trigonometry (including sine/cosine rules), circle theorems, vectors, transformations, constructions and loci, similarity and congruence.
- Probability and statistics: tree and Venn diagrams, cumulative frequency, histograms, boxplots, correlation.

Intermediate stream (working towards the Higher-tier paper)

Covers the same broad areas as Higher tier — number, algebra, ratio and proportion, geometry, probability and statistics — building up over the two years so students are ready to sit the Higher-tier exam.

Foundation tier

Covers the same broad strands at a pace and depth suited to the Foundation exam, including:

- Number: the four operations, fractions, percentages, standard form, rounding and estimation.
- Algebra: expressions, equations, sequences, straight-line and quadratic graphs.
- Ratio, proportion and rates of change: ratio, proportion, percentages, compound interest, speed/distance/time.
- Geometry: angles, area, volume, Pythagoras and trigonometry (introductory), transformations, constructions.
- Probability and statistics: charts and graphs, averages, probability, two-way tables.

GCSE Statistics (Year 10 only, top two sets)

A one-year additional qualification covering topics such as sampling, standard deviation, correlation and regression, probability distributions, and index numbers.