

Maths curriculum at Kings College

Statement of Intent

The Maths department at Kings aims to equip students with the necessary mathematical skills to thrive in the modern world. Pupils receive a broad, balanced curriculum that is knowledge and skills based. Mistakes are welcomed and students are actively encouraged to try new skills and think freely about problem solving.

The curriculum is designed around the National Curriculum using a three year KS3 and two year KS4 model. The main topic headings of Number, Algebra, Geometry & Measure, Ratio & Proportion and Probability are planned in extended blocks to enable students time to consolidate knowledge and practise new skills. This model then spirals up through the difficulty levels year on year, allowing students the opportunity to build on prior learning. For example, students in year 7 may be introduced to the topic of indices by finding the square and cube of numbers and learning about the relationship with square and cube roots. In year 8, this extends to looking at indices using algebra and discovering the basic index laws. In year 9 this then builds to looking at negative and fraction indices. This also allows for flexibility in teaching to different ability groups, whereby more able students can be exposed to these more developed topics at an earlier stage.

5 year curriculum model (3 year KS3, 2 year KS4)

YEAR 1	YEAR 2	YEAR 3
Year 7	Year 8	Year 9
Unit 1 Integers and Decimals	Unit 1 Integers	Unit 1 Proportional reasoning
Unit 2 Fractions, decimals and percentages	Unit 2 Fractions, decimals and percentages	Unit 2 Calculations
Unit 3 Calculation and measure	Unit 3 Calculations	Unit 3 Calculation plus
Unit 4 Percentage, ratio and proportion	Unit 4 Ratio and proportion	Unit 4 Geometrical reasoning and construction
Unit 5 Calculations	Unit 5 Calculation plus	Unit 5 Measures
Unit 6 Measures	Unit 6 Measure	Unit 6 Transformations and scale
Unit 7 2-D shape and construction	Unit 7 Angles and 3-D shapes	Unit 7 3-D shape and trigonometry
Unit 8 Transformations and symmetry	Unit 8 Transformations	Unit 8 Sequence and graphs
Unit 9 3-D shape and construction	Unit 9 Construction and 3-D shape	Unit 9 Equations
Unit 10 Sequences and functions	Unit 10 Expressions and formulae	Unit 10 Graphs
Unit 11 Expressions and formulae	Unit 11 Equations and Graphs	Unit 11 Expressions and formulae
Unit 12 Integers, functions and graphs	Unit 12 Sequences and roots	Unit 12 Surveys
Unit 13 Expressions and equations	Unit 13 Algebra	Unit 13 Probability
Unit 14 Equations and graphs	Unit 14 Probability	Unit 14 Interpreting statistics
Unit 15 Representing and interpreting data	Unit 15 Collecting and representing data	Unit 15 Functional maths
Unit 16 Probability	Unit 16 Analysing and interpreting data	
Unit 17 Surveys and data	Unit 17 Functional maths	

YEAR 4	YEAR 5	YEAR 4	YEAR 5
GCSE (9-1) Higher	GCSE (9-1) Higher	GCSE (9-1) Foundation	GCSE (9-1) Foundation
Year 10	Year 11	Year 10	Year 11
Unit 1 Number	Unit 16 Circle theorems	Unit 1 Number	Unit 16 Quadratic equations and graphs
Unit 2 Algebra	Unit 17 More algebra	Unit 2 Algebra	Unit 17 Perimeter, area and volume 2
Unit 3 Interpreting and representing data	Unit 18 Vectors and geometric proof	Unit 3 Graphs, tables and charts	Unit 18 Fractions, indices and standard form
Unit 4 Fractions, ratio and proportion	Unit 19 Proportion and graphs	Unit 4 Fractions and percentages	Unit 19 Congruence, similarity and vectors
Unit 5 Angles and trigonometry		Unit 5 Equations, inequalities and sequences	Unit 20 More algebra
Unit 6 Graphs		Unit 6 Angles	
Unit 7 Area and volume		Unit 7 Averages and range	
Unit 8 Transformation and constructions		Unit 8 Perimeter, area and volume 1	
Unit 9 Equations and inequalities		Unit 9 Graphs	
Unit 10 Probability		Unit 10 Transformations	
Unit 11 Multiplicative reasoning		Unit 11 Ratio and proportion	
Unit 12 Similarly and congruence		Unit 12 Right-angled triangles	
Unit 13 More trigonometry		Unit 13 Probability	
Unit 14 Further statistics		Unit 14 Multiplicative reasoning	
Unit 15 Equations and graphs		Unit 15 Constructions, loci and bearings	

Whilst at Kings students will cover all of the content necessary to sit either the foundation or higher level GCSE through Edexcel. At all times teachers look to identify ways of linking topics and content to real life contexts in order to demonstrate the importance of maths in everyday life.

In lessons and books you will see:

- Live modelling
- Clear, step by step worked examples
- Extended consolidation exercises with tiered questions allowing students to build confidence
- Retrieval practise through starter tasks
- Key skills practise through homework tasks
- Across KS4 exam style question practise
- Whole class feedback with personalised DART tasks

Feedback

Written feedback is given twice per module and takes the form of whole class feedback of WWW and EBI for the topics under review. Personalised feedback is given on a student's attitude to learning, written presentation, clear and consistent workings and literacy. DART tasks are set targeting areas for improvement as identified.

In year 11 from module 3 onwards students complete a past or practice paper each week, which is then live modelled by the teacher. This provides students with the opportunity to reflect on topics they need to focus on, whilst demonstrating model answering techniques and building a set of revision materials for students.

Focus Areas

As a department we are focussing on the following areas of development:

- Developing topic specific 'Brain banks' in line with the whole school policy.
- Introducing DVI within the maths context.
- Extending open ended problem solving techniques and practice into key stage 3.