



WELCOME TO

KING'S MATHS SCHOOL

2020-21



A specialist state-funded school for gifted mathematicians aged 16-19 in the heart of London, run in partnership with King's College London.

DO YOU LIKE MATHEMATICS? ARE YOU GOOD AT IT?



If you answered yes, and yes again, then King's Maths School is for you.

It is a place where mathematics is brought to life, and a place that will provide you with the knowledge, skills and understanding you will

need to make successful applications

to the best universities in the country.

Our curriculum offers challenge, creativity and excitement. You will meet ideas that will astound you, and that will inspire you to think independently and rigorously about all of your learning.

Here you will have the unique opportunity to learn not only in the classroom under the guidance of skilled, dedicated and well-qualified teachers, but also with and from academic experts at King's College London. King's Maths School has consistently topped the league tables for A level results over the past three years.

We are a resourceful community and have responded to the challenges presented by COVID-19 with great tenacity: whatever is going on in the wider world, you can trust us to look after your education well.

Dan Abramson, Head Teacher

a place where mathematics is brought to life

73% A*s across all subjects

100% A*s in mathematics

“ KING’S MATHS SCHOOL IS A PLACE WHERE I CAN FREELY SHOW MY PASSION FOR MATHEMATICS WITHOUT JUDGEMENT. ”

SIAN



SHRIMAT

“ THE LEARNING ATMOSPHERE IS VERY **MOTIVATING** AND MAKES YOU THINK FROM DIFFERENT PERSPECTIVES. ”

“ KING’S MATHS SCHOOL CREATES AN ATMOSPHERE WHERE I WANT TO PURSUE MY ASPIRATIONS. ”

COLLIN



BRINGING MATHS TO LIFE

King’s Maths School is for highly motivated students aged 16-19 with a particular aptitude and enthusiasm for mathematics. We provide opportunities for the brightest and the best young mathematicians in London.

We provide an education that is both engaging and challenging. One that inspires curiosity and equips students with a coherent understanding of both mathematics and the disciplines in which it is most commonly applied.

We empower students by developing their thinking, problem solving and communication skills, enabling them to make informed decisions about their futures and realise their ambitions.

We engender a supportive environment for every student through individual and regular feedback, and by providing assistance wherever it is needed.

- Key degrees:
- Mathematics
 - Physics
 - Engineering
 - Computer Science
 - Economics

Our lessons take students beyond the content required for examinations. In doing so we not only help them achieve excellence in their examinations, we also inspire and prepare them for success at the best universities and institutions.

PASSIONATE TEACHERS



Supportive environment



Motivated students

“ I WANT TO STUDY
PHYSICS

AT UNIVERSITY AS IT
EXPLAINS HOW EVERYTHING
AROUND US WORKS! ”



“ I'D LIKE TO BE DOING
SOMETHING IN

FINANCE, BANKING
OR ENGINEERING. ”

ZOE

“ MATHS IS A FOUNDATION,
THE THINGS WE ARE TAUGHT
HERE WILL BETTER EQUIP US
FOR DEGREES IN COMPUTING,
ENGINEERING AND PHYSICS. ”



OPENING DOORS

Mathematical ability is hugely valued in today's world. The ability to think abstractly and generalise concepts makes mathematicians key individuals in today's world, and opens the door to a broad range of university and career opportunities.

RESULTS

We are one of the highest-achieving schools in the UK.

In 2020, 100% of all grades were A*-B grades, with an amazing 95% of grades A*-A and a chart-topping 73% of A* grades. Our 2019 results were confirmed to be the best A Level results of any school in the country, state or independent. Students not only attained well, but better here than they would elsewhere: on average, every student attained nearly a grade higher in each subject than did students with comparable GCSE results across the country.

FURTHER EDUCATION

Through our unique academic environment, we prepare students for degrees containing a high level of mathematics at the very best universities. Over the past two years, 25% of our leavers have secured places at Oxford and Cambridge, with the vast majority of other applicants going on to highly competitive courses at institutions like Warwick, Durham, Bath and UCL.

Key degrees that our students choose to study at university include:

- Mathematics
- Physics
- Engineering
- Computer Science
- Economics

CAREERS

There is a perception that people who are good at maths go on to become either accountants, teachers, or academics. The reality is very different.

In the modern world, having a well-trained mathematical mind leads to options in a hugely diverse range of industries. Some examples include:

- Aerospace engineering
- Artificial Intelligence
- Bioscience
- Business & Consultancy
- Data Science
- Engineering Design
- Financial modeling

We encourage every King's Maths School student to do some form of work placement or experience during their two years at the school, usually completed in the summer between their first and second years with us.

You can learn more about how maths is a door-opening subject at www.mathscareers.org.uk

OUR CORE CURRICULUM

Our curriculum is designed to prepare students for degrees in mathematics, physics, engineering, computer science and economics. Students take A-levels in Mathematics, Further Mathematics and Physics, as well as either AS Computer Science or AS Economics in their first year.

MATHEMATICS AND FURTHER MATHEMATICS

We teach mathematics in a way that develops mathematical thinking and an understanding of the connections within the subject. Students learn to do much more than answer standard problems using standard techniques. They begin to see both what pure mathematics is, and how it can be applied in complex situations where complete solutions may not be possible.

Thus, while the material covered is essentially that in A Level, the style of study is different from that in most schools.

We apply a much greater mathematical rigour, and require that statements are proved and methods justified. We take an intellectual approach, putting ideas in mathematical and historical context. We study real applications informed by the modern use of mathematics.

Mathematics and Further Mathematics are taught as one single subject, but one that contains a number of subdivisions.

In Core Mathematics we study intriguing questions: how can you solve the equation $x^2 = -4$? Which is larger, $\sqrt{7^n}$ or π^{n^7} ?

In Mechanics we examine motion and change: why do you fall backwards when the tube carriage lurches forward? How do you kick a football over the goalkeeper and into the net?

In Statistics we learn how to make justifiable inferences despite the ineradicable presence of uncertainty. How likely is it that 721139 is a prime number (and why might the CIA want to know?). How can you determine if a coin is biased, and how sure can you be?

Throughout all these lessons, your teachers will encourage you to put forward your own ideas, and will help you to build them into powerful and general methods.

What are complex numbers, and how do they fit into the number system that we are already familiar with?

PHYSICS

Our physics teaching is unique in its continuous use of mathematics to develop ideas, and to make predictions about the world which otherwise can only be made by observation. Since all students at the school are studying mathematics to a high level, our physics teachers are able to use powerful techniques such as calculus to establish and interrogate ideas.

Physics is both an experimental and a theoretical subject, and our approach is to blend the two together. Through experiments, demonstrations and open-ended discussions students develop many important skills, including analysis, evaluation, problem solving, collaboration and the effective use of technology to aid scientific enquiry. The school makes use of two state-of-the-art laboratories as well as visits to King's College London to hear from world-class physicists.

How can we use maths to determine the half-life of radioactive substances?

"The teachers at King's are extremely supportive, and make sure you personally understand the topic by letting you explore it first, introducing a sense of discovery to maths."



Mark

COMPUTER SCIENCE

Computer science has been fundamental to many of the exciting scientific and technological advances of the 21st century; from modern conveniences such as contactless payments, to DNA sequencing, or number-crunching data generated by the Large Hadron Collider.

In computer science lessons, we focus on developing the ability to think computationally, that is, how to break down a problem into a logical series of steps, which can then be written as a program (we use Python) and executed by a computer.

What is the RSA cryptosystem, and why is it so fundamental to modern life?

ECONOMICS

The state of the nation's economy is a particularly heated topic of debate. Some say that recovery can only be achieved by increasing public spending to stimulate the economy, while others believe in 'belt-tightening austerity'. But which strategy is more credible, and why?

Economics tackles key questions such as these. In macroeconomics we concern ourselves with understanding the large-scale economic factors effecting countries across the globe, including interest rates and productivity. In microeconomics, we look at the actions and decisions of individuals and groups including questioning how prices are set, and why.

How do producers know how much to produce? Why are some markets inefficient, and what does the Government do to intervene?

OUR EXTENDED CURRICULUM

As well as the core subjects, we also offer an extended curriculum of disciplines with the aim of developing a broader set of skills.

THE KING'S CERTIFICATE

Central to our programme of Academic Literacy is the King's Certificate. On this programme, every student completes a group research project guided either by an academic from King's College London or an industry professional from companies working in mathematical fields. This gives all our students a taste of real research, and the opportunity to develop a broad array of skills that will benefit them in further study and their career.

As an example, last year a group of students worked with the engineering firm Dyson to design an autonomous vacuum cleaner that can find its own way around a room. Another group worked with a physicist at King's College London to understand and explain the early expansion of the universe.

In their second year, students can opt to take their research further and complete an **Extended Project Qualification (EPQ)**, which is equivalent to half an A Level in scope and in UCAS weighting.

CURRICULUM X

Whilst every lesson at King's Maths School involves challenge we also provide a tailor-made extension curriculum. Students in their second year can choose from a range of courses in maths, physics, computer science and economics that take students far beyond the A level curriculum and help prepare them for undergraduate study.

Curriculum X courses, many of which are taught by university lecturers, provide King's Maths School students with a unique opportunity to truly deepen and extend their study of the mathematical sciences.

TRIPS AND VISITS

The standard school year is also filled with trips and visits to develop students' cultural literacy. Students visit places in London, such as Houses of Parliament, the Tate Modern and the theatre.

CLUBS AND SOCIETIES

There are numerous clubs and societies to get involved with. Robotics, engineering, philosophy, board games and music are some of the most popular.

"My King's Certificate project greatly helped me understand what a research project entails. Throughout the project I had great fun working with my team to make executive style decisions and learn more about data presentation."



Semanur

COMPETITIONS

All students are prepared for entry to the Senior Mathematics Challenge and the Physics AS and A2 Challenges. There is also optional support to enter the Mathematics, Physics and Informatics Olympiads, as well as team competitions.

PROBLEM SOLVING

Students meet with a PhD mathematician once each week to develop their skill in problem solving. The problems set are unusual and designed to encourage creativity as well as skill in communicating mathematical ideas. This programme is not only intellectually stimulating but provides vital preparation for university learning.

SPORT AND EXERCISE

Our programme of sport and exercise is designed to encourage all students to take up a form of exercise that they enjoy and that will help them to lead healthy lives.

Each Friday afternoon students choose between football, climbing, gym, swimming, mixed martial arts, dance, basketball, walking, running and table-tennis. All of these take place at facilities local to the school.

"Curriculum X has introduced me to a new and exciting way of learning. We explore ideas from areas of mathematics that are new to me and apply them to interesting situations."



Reemon

“ THE SCHOOL HELPS TO GIVE ME THE BEST CHANCE TO BE ACCEPTED BY TOP TIER UNIVERSITIES. ”



“ THE SCHOOL ORGANISES ONE TO ONE SESSIONS SO THAT YOUR UCAS APPLICATION IS TRULY THE BEST IT CAN BE. ”

“ MY TEACHER AND I DISCUSSED MY UCAS APPLICATION FOR OVER AN HOUR! ”



PREPARING FOR UNIVERSITY

We pride ourselves on our ability to prepare students for further education. Our staff have significant experience and have been successful in guiding high-attaining students through the UCAS process. We send a greater proportion of students to Oxbridge and to Russell Group universities than any other state school in the country.

APPLICATION TIMETABLE

With the help of the experts at King's College London we help students to apply for the right courses and universities for them.

Summer term (year 12)

We put on a sequence of talks and visits designed to help students figure out what course they want to apply for. After the end of year exams, we take students to visit several universities and encourage them to conduct additional visits independently.

We provide detailed guidance and support through the application process, in particular the personal statement.

Autumn term (year 13)

Students finalise their decisions with our advice, and submit their applications.

Throughout this process we have regular sessions during which students are prepared for entrance examinations and interviews, including for admission to Oxford and Cambridge.

“ The school has been massively helpful, constantly encouraging us to take part in additional extension activities and reading outside of the curriculum that make the writing of personal statement, probably the most stressful part of the process, much easier. ”





LAMIS

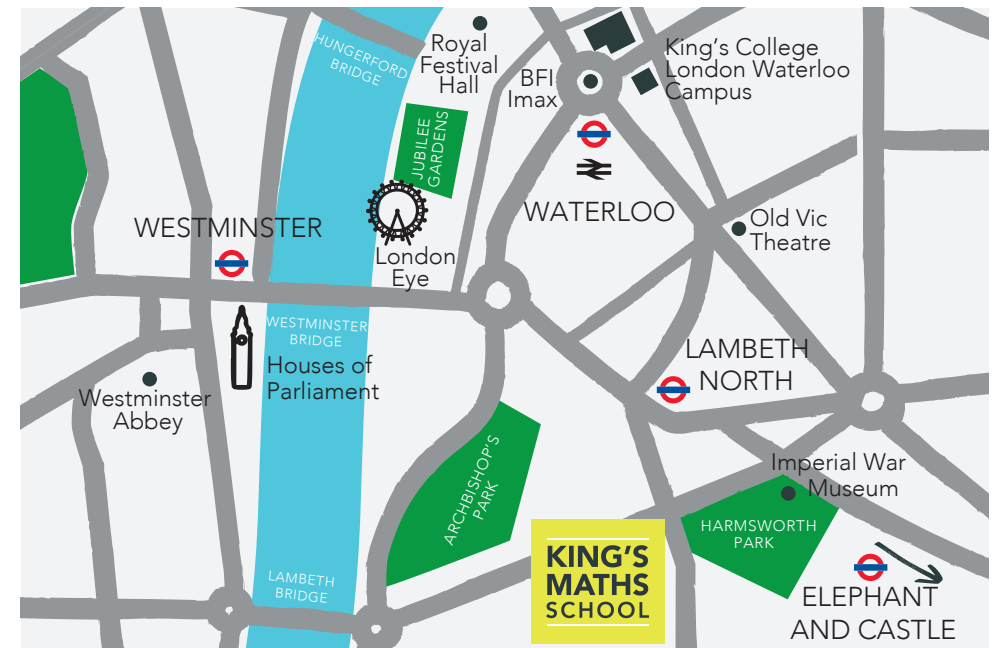
“THE CLASSROOMS ARE AMAZING! THEY HAVE THESE SMALL PODS AS WELL WITH WHITEBOARDS INSIDE FOR US TO DISCUSS STUFF.”

OUR LOCATION

Situated on Kennington Road right by the Imperial War Museum, we are within walking distance of King's College London's Waterloo Campus. Central London is a short tube or bus journey away.

Our buildings provide a connected, spacious learning environment which encourages communication and creativity.

Every classroom and student study space around the school features plenty of whiteboard space. Students use these whiteboards to solve problems as well as to share and discuss ideas. They help to create an atmosphere buzzing with engaged learning, independent thinking and wide-ranging academic interest.



SCHOOL LIFE

We believe that our students' well-being is key to their academic attainment. We aim to provide an enjoyable, rounded educational experience and we pride ourselves on our support for students in their journey from young person to young adult.

THE SCHOOL DAY

King's Maths School starts late, at 9.30am: our students travel to us from all over London, and many have journey times of over an hour. They are also teenagers and recent research has shown that the teenage mind does not function best first thing in the morning!

Students have six 50 minute lessons each day and the school day ends at 4.30pm. There is the option of staying after school to discuss problems with peers, engage in independent study, or speak to teachers.

Not every lesson operates in the traditional sense: some are given over to problem solving in small groups, to independent research and to talks from visiting lecturers.

CARE, GUIDANCE AND SUPPORT

Excellent care, guidance and support is integral to the success of our students. Students are divided into houses and form groups, and each student has a tutor who will meet with them fortnightly on an individual basis to act as a mentor and guide.

Through these regular meetings, tutors get to know their tutees very well indeed and are able to support them through the many stages of their time at King's Maths School, from the induction process to the final leaving celebrations.

"The lessons are dense. 50 minutes each and packed with content, each lesson feels meaningful and important to the overall journey."

Eito



SAMPLE TIMETABLE

	Mon	Tue	Wed	Thu	Fri
Period 1	Maths Core	Personal Development	Physics	Maths Core	Physics
Period 2	Maths Core	Computing/Economics	King's Certificate	Physics	Independent Study
Period 3	Problem Solving	Independent Study	Maths Core	Head of Year	Maths Core
Period 4	Independent Study	Physics	Maths Mechanics	Computing/Economics	Maths Statistics
Period 5	Maths Mechanics	Computing/Economics	Extension/Projects	Computing/Economics	Sport and Exercise
Period 6	Computing/Economics	Maths Statistics	Extension/Projects	Independent Study	Sport and Exercise

"The teachers here have a huge amount of knowledge and are great at accommodating the specific needs of each student. Last year, we never even needed to use textbooks in class because the teachers created their own custom worksheets."

Manuj



"The timetable is set up to allow free periods so that you can relax, reflect and study between lessons."

Danny



ADMISSIONS

We provide an opportunity for the brightest and best young mathematicians to stretch themselves and prepare to study subjects with a high degree of mathematical content at university. We are a highly selective institution that seeks to engage students who have an interest and aptitude in mathematics but who may not otherwise have access to an outstanding mathematical education. The application process reflects this aim.

ADMISSIONS TEST

All applicants are invited to sit a mathematical admissions test. The test is based on KS3 mathematics, but will require creative thinking and for techniques to be used flexibly.

INTERVIEWS

The highest scoring applicants are invited back for an interview. The aim is to find out more about applicants, to see how they think and how effectively they pick up new ideas.

OPEN EVENTS

King's Maths School is hosting several Open Evenings where you can find out more about the school, and also some Taster Days where you can spend a day in lessons testing out whether our style of education is for you.

HOW DO I APPLY?

Applications to King's Maths School for next September are now open. Application forms are online.

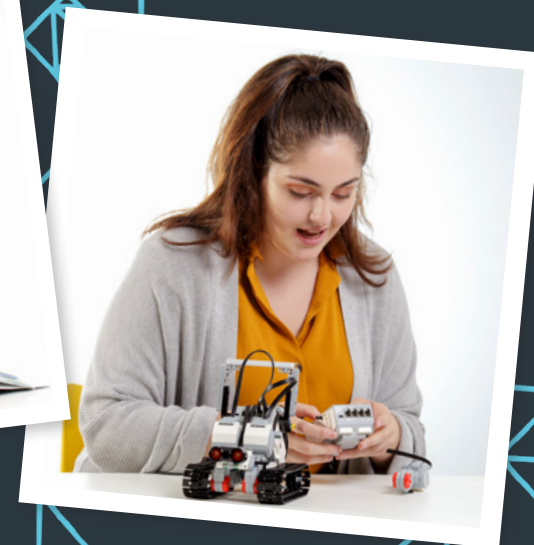
FINANCIAL SUPPORT

We believe that financial circumstances should not be a barrier to studying at King's Maths School. We provide a range of financial support, including travel bursaries, for those in need. Please see our website for further details.

FIND OUT MORE

You can sign up for open events, read example admissions test questions and apply online, all through the "Admissions" section of our website: www.kingsmathsschool.com

"When you are in a place with loads of top mathematicians, it's a challenge and it pushes you. It makes you more passionate about maths."



FIND OUR MORE

To learn more about King's College London Mathematics School,
go to www.kingsmathsschool.com

OR CHECK US OUT ON

Twitter: @kingsmathschool

TRY OUR WEEKLY MATHS CHALLENGE

Twitter: @sevendaymaths

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