

GCSE+

KING'S  
MATHS  
SCHOOL

LIKE  
MATHS?



ENJOY  
PROBLEM  
SOLVING?

OFTEN ASK

WHY?

IN MATHS  
LESSONS?



THINK YOU MIGHT  
STUDY **MATHS**  
AT A-LEVEL?



IF THE ANSWER IS  
TO ANY OF THESE  
QUESTIONS THEN READ ON...

YES

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

KING'S  
College  
LONDON

# “MATHS IS PRESENTED AS AN ADVENTURE!”



## WHAT?

King's Maths School is for students aged 16-19 who have a passion and a talent for mathematics. We run enrichment sessions for KS3 and KS4 students who are enthusiastic, inquisitive and keen to deepen their understanding of mathematics.

## WHERE?

All sessions take place at King's Maths School, 80 Kennington Road, SE11 6NJ. The school is located centrally, and just a short walk away from Waterloo, Lambeth North and Elephant and Castle stations. Local bus routes include 3, 59, 159, 344 and 360.

## WHEN?

Sessions run once a fortnight during term time, and you can let us know on application which days of the week suit you.

**Year 9:** The session timings are 16:45-18:30. You are joining a two calendar year programme, from Jan 2020 through to Dec 2021.

**Year 10:** The session timings are 16:45-18:45. You are joining a one calendar year programme, from Jan 2020 to Dec 2020.



## WHO?

If you have just started year 9, you can apply to join the Y9 GCSE+. If you have just started year 10, you can apply to join the Y10 GCSE+. Since our mission is to widen participation in mathematical degrees and careers, we'll prioritise places to students who:

- do not have parents(s) or carer(s) who have studied at university
- have been eligible for Free School Meals in any of the past 6 years
- live or have lived in local authority care, are a young carer, or are disabled

## WHAT TO EXPECT

In both programmes you'll be diving deep into fascinating maths. You'll explore ideas that surprise you, intrigue you, and inspire you. You'll make connections between various GCSE areas in detail, strengthening your understanding and improving your mathematical reasoning and your problem-solving skills.

We will explore and expand upon some of the GCSE topics that are developed further if you study AS or A2 Mathematics or Further Mathematics, so will not only support you in achieving a high GCSE grade, but it will also prepare you well for further study of the best school subject there is (not that we're biased!)

## WHEN TO APPLY

Apply now! Applications are online, see the back page for details. The deadline is 19 November 2019.

## FORTNIGHTLY SESSIONS...

Let's have a more detailed look at the types of activity that you might expect in one of our sessions:

**Starter puzzles** to get you thinking – some will be familiar, some will be unusual, but the important thing here is to have a go!

- ✧ e.g. I am a 2-digit number. If you double me and subtract 1, you get me but with my digits reversed. What number am I? Are you sure?

Convince yourself. Convince your neighbour. Convince your teacher!

**Group discussion** to introduce a topic for the session –

- ✧ e.g. Year 9: if a bamboo shoot grows taller by 20% each week for five weeks, will it be more than, less than, or exactly twice as tall as it was initially? And why is understanding this maths so important in this time of climate change?
- ✧ e.g. Year 10: is 9991 a prime number - no calculators? And why is this the same as asking about the carpet needed to cover an L-shaped room?

**Whiteboard work** to explore some of the ideas being discussed and to solve problems together in a pair or small group at one of the many whiteboards that we have in our mathematics classrooms. You'll get to be the teacher!

**Biscuit break** – two hours is a long time to do maths! We always have a break in our sessions, with snacks provided. This also gives you the opportunity to get to know some of the other pupils in your group and to talk about the questions you've been trying. Some people even squeeze in a game of speed chess!

**Problem solving** – you can expect a large amount of time in all our sessions to be dedicated to solving problems and answering questions on the day's topic. Sometimes you'll do so in pairs or small groups, often you'll work by yourself. Maths is a subject that benefits from lots of quiet, focused practice, so by tackling the exercises set you'll strengthen your understanding, improve your skills, and become an increasingly confident mathematician. You should expect to find the exercises harder than perhaps you're used to in school: getting stuck is good if you respond with determination to get unstuck.

**Teacher assistance** – when you're working on problems, the group teacher will circulate and talk to you about what you're doing. They'll definitely ask you to tell them your thinking and reasoning: students who are "good at maths" like explaining their answers as well as coming up with an answer in the first place.

**Homework** – we will ask you to tackle some questions in between sessions to help you to consolidate your learning and practice new techniques. This will help you get the most from our programme.

**Expectations** – so that everyone enjoys being a GCSE+ student, we expect you to be fully engaged, to respect each other and the school environment, and to act in line with the values and ethos of King's Maths School.

## ...AND A SUMMER SCHOOL

At the end of Year 10, all the students who take part in this programme will be invited to a week-long summer school at KCLMS. You'll explore in depth a number of the most interesting and important ideas in mathematics. You'll learn and socialise with lots of like-minded mathematicians from many different schools, and you'll meet and hear from professionals in finance, science, business and computing. They'll tell you about why they love maths, and how mathematics helps them be successful in their chosen career. Studying maths can be doubly rewarding!

## SOLVE THIS IF YOU CAN!

Each letter in the sum below stands for a different digit.

$$\begin{array}{r} \text{FOUR} \\ + \text{FIVE} \\ \hline \text{NINE} \end{array}$$

**Is it possible to allocate digits to the letters in such a way that FOUR is divisible by 4, FIVE is divisible by 5 and NINE is divisible by 9?**

Justify your answer carefully!

If you enjoyed solving this problem, there are plenty more on our website in the **Weekly Maths Challenge** section.

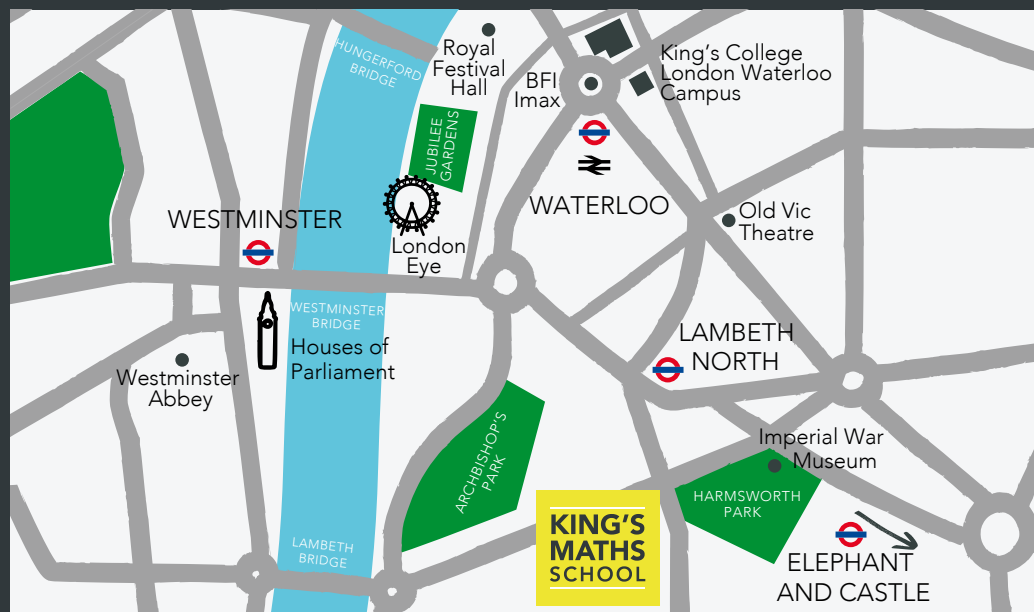
## I'M INTERESTED... WHAT DO I DO NEXT?

Apply online at [www.kingsmathsschool.com](http://www.kingsmathsschool.com).  
Select Activity and then Outreach and look for GCSE+

Closing date for applications: 19 November 2019.

## THANK YOU



Our GCSE+ programme has been made possible by the generous funding of King's College London's Widening Participation (KCLWP) team. Their purpose is to ensure that university is accessible to students from a wide range of backgrounds. Our outreach programme is part of this mission, and as such we will prioritise places to students from backgrounds currently under-represented in the mathematical sciences at university and beyond.



## FIND OUR MORE

To learn more about King's Maths School,  
go to [www.kingsmathsschool.com](http://www.kingsmathsschool.com)

## OR CHECK US OUT ON

 /KingsMathsSchool  
 @kingsmathschool

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