KING'S MATHS SCHOOL

GCSE+

LIKE MATHS?

ENJOY PROBLEM SOLVING?

OFTEN ASK WHY? IN MATHS LESSONS?

THINK YOU MIGHT STUDY MATHS AT A-LEVEL?

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

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 also 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 take place at KMS once a fortnight during term time on Tuesdays, Wednesdays or Thursdays. You can let us know on your application which day of the week you prefer - but we can't guarantee that'll be your day.

Year 9: The session timings are 16:45-18:30. The sessions will continue at KMS until the end of the school year, and then we hope you will join us again in Year 10.

Year 10: The session timings are 16:45-18:30. The sessions will continue at KMS until the end of the school year, and then we hope you will join us for our online Year 11 programme.

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 deep and unexpected connections between various GCSE topics and concepts. You'll strengthen your understanding and improve your reasoning and develop your problem-solving skills.

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

WHEN TO APPLY

Click here and apply today! The deadline is Thursday 16 September at 23:59.

Any questions?
Ask us, at KCLMSoutreach@kcl.ac.uk

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. Can you 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 when we talk about climate change?
- e.g. Year 10: is 9991 a prime number - no calculators? And why is this mathematically 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 a small group at one of the many whiteboards that we have in our mathematics classrooms. You'll get to be the teacher!

Biscuit break – 105 minutes is a long time to be thinking deeply about 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 people 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 as long as 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 – Sometimes we might suggest some questions for you to tackle before the next session by yourself at home or in school to consolidate your learning and practice new techniques. Doing these will help you get the most from our programme: "practice makes permanent".

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 the programme are invited to a one week summer school at King's Maths School. Each day you'll explore in depth and detail some of the 'Big ideas' in mathematics, and you'll also hear from professionals in finance, science, business and computing speaking about how mathematics helps them in their chosen career. We'll tell you more about the Summer School programme nearer the time. In the meantime ...

... HAVE A THINK ABOUT THIS:

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!

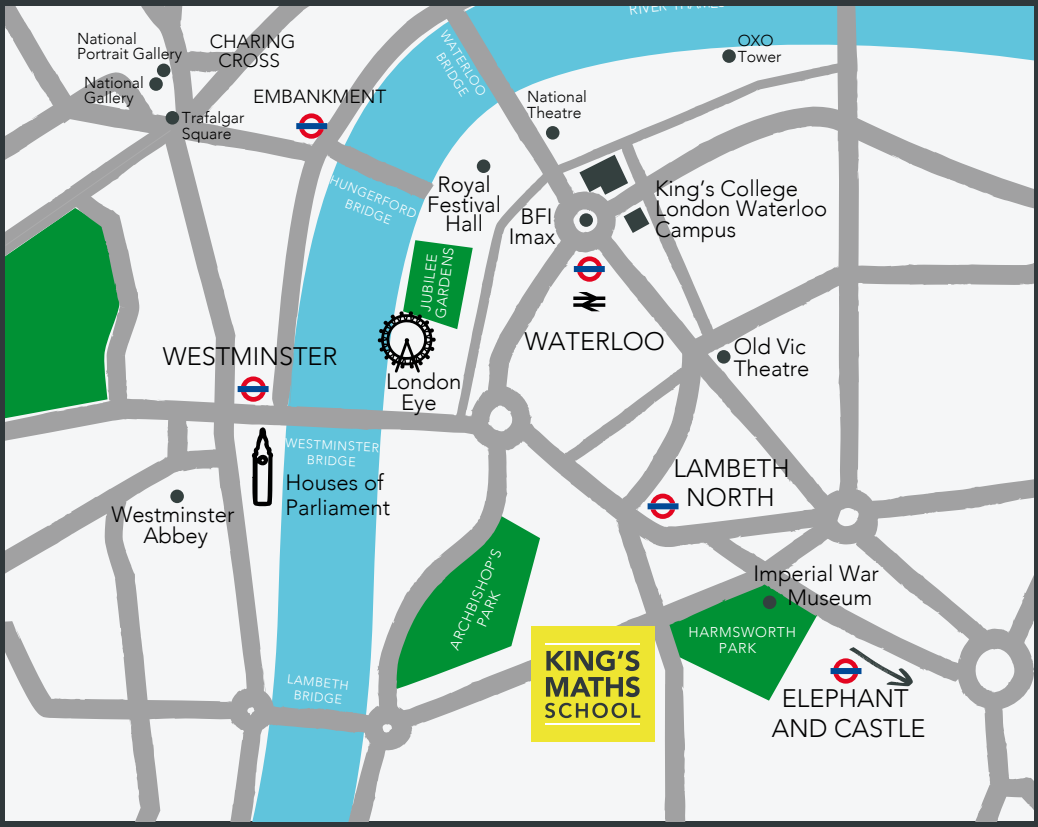
If you enjoyed solving this problem, there are plenty more on our website in the **Weekly Maths Challenge** section.

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

Apply online at www.kingsmathsschool.com/gcse-plus.

Closing date for applications: Thursday 16 September at 23:59.

If you have any questions or would like some support applying, please let us know by emailing KCLMSoutreach@kcl.ac.uk.



FIND OUR MORE

To learn more about King's Maths School, go to www.kingsmathsschool.com

OR CHECK US OUT ON

/KingsMathsSchool
@kingsmathschool

80 Kennington Road
London
SE11 6NJ

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