GCSE ENRICHMENT PROGRAMME

LIKE MATHS?

ENJOY PROBLEM SOLVING?

FREQUENTLY ASKED

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 Maths School is for students aged 16-19 who have a passion and a talent for mathematics. We run enrichment sessions for younger students who are enthusiastic, inquisitive and keen to enhance their understanding of mathematics.

All sessions take place at King’s Maths School, 80 Kennington Road, SE11 6NJ. The school is located centrally, and is just a short walk away from Waterloo station.

Sessions run once a fortnight during term time, from 5pm until 7pm – you will be assigned to a group with students from other schools. If you have a preferred day (Tuesday, Wednesday or Thursday) then you should say so on application. You’ll get the exact dates of your sessions once your place is confirmed, but the first session will be in September 2018.

If you are coming to the end of year 9, you can apply to join us in year 10. If you are coming to the end of year 10, you can apply to join us in year 11. 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

If you join the year 10 programme, as well as studying interesting topics and seeing some clever ideas, you’ll have the opportunity to explore the links between various GCSE areas in detail, strengthening your understanding and improving your problem-solving skills.

Not only should the course improve your knowledge and understanding for GCSE mathematics, but it will also develop the thinking needed to study mathematics at higher levels.

Places in year 11 are offered first to those pupils who were on the year 10 programme, but there will be a few spaces available if you would like to join us in year 11.

Over the course of two terms, 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 this course will not only support you in achieving a high GCSE grade, but will also prepare you well for further study of the subject.

If you’re reaching the end of year 9, apply now for year 10. Assuming your attendance record is good, you are guaranteed a place in year 11, although we will ask you to re-apply next year so that we can update the details that we hold.

If you’re reaching the end of year 10, apply now for one of the few places we have available for year 11 – these will be assigned using the criteria outlined above.
Let’s have a more detailed look at the types of activity that you might expect in one of our sessions:

**Starter puzzle** to get you thinking – some will be easy, some will be hard, 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?

**Group discussion** to introduce a topic for the session – e.g. Year 10: if my pay goes up by 8%, what’s the associated scale factor? And why is this related to the mathematics of right angled triangles? e.g. Year 11: why is factorising a quadratic expression useful? Can we do the same thing to cubic expressions? When can we factorise and when do we get stuck?

**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

**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. Maths is a subject that benefits from lots of practice, so by tackling the exercises set you’ll strengthen your understanding and become an increasing confident mathematician.

**Teacher assistance** – when you’re working on problems, the group teacher will circulate, check your work, and give you a hand if you’re stuck. They may also ask you to explain what you’re doing – e.g. Why’s it ok to multiply both sides of an inequality by 7, but not ok to multiply both sides by -7?

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The mathematics circle is a group of students who meet once a fortnight to work on challenging problems beyond the scope of the normal curriculum. Everyone on the enrichment programme will be able to apply to join in with this, and we’ll let you know how once you are on board.

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At the end of year 10, all the students who take part in the programme will be invited to a week long summer school at King’s. Where you’ll have the opportunity to look at some very deep and interesting ideas in mathematics. You’ll not only be learning and socialising with students from a wide range of schools, you’ll get to hear professionals in finance, science, business and computing speak about how mathematics helps them in their chosen career.

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Nancy has a wooden cube. She paints two faces of the cube red, two faces green, and the last two faces yellow. Nancy notices that of the cube’s 12 edges, the number of edges which border two different colours is odd. **Is this enough information to determine how the cube was painted?**

Four identical light purple triangles sit within a large square. The total area of the dark purple regions, where the triangles are overlapping, is equal to the total area of the central white region. **What proportion of the area of the large square is each of the triangles?**
I’m interested... what do I do next?

Apply online at www.kcl.ac.uk/mathsschool. Select OUTREACH and find the GCSE enrichment section.

Closing date for applications: 31 July 2018.

Thank yous

Our GCSE enrichment 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 the opportunities provided by universities are 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 those most in need.

We would also like to thank the Worshipful Company of Actuaries for generously funding our Mathematics Circle.

Find our more

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

Or check us out on

/KingsMathsSchool
@kingsmathschool

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