

*King's Student
Perspectives
Mathematics*

*Jo, 2nd year
June 2012*

*Why did you want to
study Maths at
Cambridge?*

I always thought I would like to go to university and in my first year at sixth form I got involved in doing UKMT team maths challenge, AEA and similar things. I began to really enjoy doing maths.

I decided I would like to study maths at uni but Cambridge was a bit of a wild card in my application. I didn't think I had that much chance of getting in. I am so glad that I took the opportunity to apply though, because Cambridge is a great place to become obsessed with maths.

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I almost didn't apply to King's. I changed my application from Clare to King's the day before I sent my UCAS form off. I had only been to Cambridge before when I was five so I found it quite difficult to find reasons to choose a particular college. I chose King's because the college seemed to be a nice size and have a high proportion of

people from state schools or abroad. I'm really glad I applied to King's as it combines having a big student population with a close community.

*How was the transition from school to Cambridge
maths?*

Work here is much harder than it was at school. However, this is the same for everybody and supervisors / lecturers seem to expect it. I felt that the way I wrote and thought about maths changed a lot over my first year and this was probably one of the major things I learnt.

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I'm not sure what I expected the course to be like. There is a lot of technical language in maths and I still find it difficult to anticipate what particular courses will be like without beginning to actually learn them. I think I expected

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more of a jump from the style of maths at school to at university but it was more a gentle meandering. I was originally slightly disappointed that there had been no massive difference in how we understood maths until I looked back at the end of my first year and realized my view of the subject was entirely different.

What is your timetable like?

The first year timetable is two hours of lectures a day Monday to Saturday, and around two supervisions per week. Saturday lectures were a bit of a shock at first but I got used to them and there are none in second year. The length of the second year courses vary and there is a bit more choice. This can mean that the timetable is slightly more uneven and you can end up with four lectures on Monday, Wednesday and Friday and only one on the other days. The supervisions are also less even which meant I had to get a bit better at organising my time.

Where are the lectures?

The first and second year lectures are very close to King's. The first year lectures are on a site where a lot of natural scientists also have lectures. It was less than five minutes' walk from my room in first year. The second year lecture theatre is not much further away - between five and ten minutes away from all the second year accommodation. The maths faculty is a twenty minute walk away. The third year lectures are in the maths faculty (called the Centre for Mathematical Sciences or CMS) but in the first two years I rarely had to go there.

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How do supervisions work in maths?

Each lecturer hands out example sheets throughout the lecture series and these make up the bulk of supervision work. The difficulty of the sheets varies a lot from lecturer to lecturer: some are relatively straight forward, for most I would not expect to finish every question but can do the bulk of work, and some feel like a particularly cruel form of torture.

In supervisions we generally work through the sheets discussing problems that we got wrong or could not do. Personally, I find that supervisions, and particularly doing work for supervisions, is the way I do most of my learning. Maths is really not something you can understand by reading about or hearing about it - a lot of the subtlety is only apparent when you engage with the subject.

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Where do you like to work?

I work both in my room and in the library. I spend more time working than I ever have before. This means it is really nice to be able to work with other people either collaboratively or just with other people working around you. As a result, I generally

prefer to work in the library. The atmosphere of intense intellectualism can get a bit much sometimes though and I find an Agatha Christie in the background can make fluid dynamics a bit more doable. Even when I'm working in my room, I prefer to do it with someone else or keep skype open to check stuff with the other mathematicians in King's and have a bit of a chat.

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What was your favourite paper this year?

I think my favourite course this year was Linear Algebra.

All the exam papers in maths are cross-sectional which means there are questions from a number of different subjects on each paper. I think my favorite course this year was Linear Algebra. A lot of the objects we studied in this course we had met before so it was really good to get a better idea of how they worked.

How do you find the work / social life balance?

The terms are very short which means that lots of people like to do a lot of their learning to really understand a subject in the holidays and allow themselves to get a bit more done outside of work at Cambridge. Personally, I find this really difficult and enjoy trying to understand most of what I am doing as I got along. This means the work / life balance is different to what it was at home.

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I do a lot of work with other people and see my friends all the time even if I don't have the time or energy to go clubbing or pubbing as much as I used to. I play badminton twice a week, which is really good fun. The team in King's is not too

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competitive so it's a good way to relax. I'm also part of a project called STIMULUS which links students up with schools, which means I have been spending a few hours on a Wednesday afternoon helping out in maths lessons at a local sixth form. This is really good fun and surprised me in how much it helped remind me of a load of maths I had forgotten.

Where do you live this year?

This year I live in a hostel in the middle of King's fellows garden. My room is big, light and not too expensive so I love it. Most of my friends preferred to have ensuite rooms which means that their rooms are smaller and newer. There are slightly fewer showers for girls than is ideal (about one for 10-15 people), but that is much less of a problem than I had anticipated.

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What are the best and worst things about studying Maths at Cambridge?

I think the best thing about studying maths is the opportunity to do a lot of stuff. Three years is actually a really short time to learn about maths so it's good to get through as much as possible.

The worst thing is when mathematicians are pretentious. I may be intolerant because I spend more time with them than others, but some mathematicians seem to be good at creating and believing a whole load of myths about how special maths is. The mathematicians I know are lovely, just try not to get frightened if they tell you maths is the hardest subject in the world.

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Is there a good King's community in Maths?

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The fellows in King's are really friendly (a fellow is an academic) and my year is a particularly close knit bunch of mathematicians - we're all good friends. I know all the undergrad mathematicians. The guys in the year above are really helpful in giving advice about what courses to take or just to a question I can't answer.

What have you found hardest?

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For me the hardest thing about the course is the computing coursework we have done this year. I never did any programming before I came to university and I'm not very good at it. I seem to spend most of my time debugging code so it's pretty difficult to stay interested. Unfortunately for me, programming is really useful both at uni and in the dreaded 'real world' so I think I'm gonna have to get a bit better.

How was the application process?

Once I got an interview, King's sent me a book extract to read. (Note from the Admissions Office: this does not happen any more) Most of the interview preparation I did was reading through this material. I also worked through some past STEP papers.

I stayed over in King's the night before my interview. This was really good because there were a lot of interview candidates around and there was a good camaraderie between everybody. I had only been to Cambridge before when I was a tiny child so it was really nice to come here and discover that everybody was really normal.

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The interview day itself began with a test in the morning. People came out of this test feeling vastly different. Personally, I was a lot less nervous about a test than the interview that was to come. I had two interviewers and the thing itself lasted for about twenty minutes. I was glad to find that nobody asked me why I wanted to come to Cambridge or King's because I didn't really know how to answer those questions. What they asked me about was maths, and once the first flurry of

nerves had died down, I began to find the interview quite interesting.

How did you get on with STEP?

I was really lucky to go to a big and excellent sixth form college which had sent people to Cambridge before, which meant that my teachers were really

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helpful. * Initially STEP was the part of the application process which I was most confident about, but as I began to try full papers, I realized that STEP was a big challenge and worth putting time into. Like the interview, the STEP papers can become more interesting if you put the time in.

* Note from King's Admissions Office: If your school cannot offer support for STEP this is nothing to worry about. See the information on the Maths Faculty website about preparing for STEP.
(<http://www.maths.cam.ac.uk/undergrad/admissions/step/>)

What advice would you give to sixth formers?

Doing maths at Cambridge is made a lot more difficult if you don't love maths. When I first began to enjoy doing maths, I also started to enjoy reading about maths. I found Marcus du Sautoy and James Gleick have written some really good books about maths and mathematicians. Many people feel that it's more important to learn to do some maths but that can be really hard to do on your own, and I think it's interesting to see what kind of thing you might want to learn about. The other good way of getting to know maths is to get involved in some of the competitions UKMT runs, like the maths challenge, team maths challenge etc.

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A note to current King's Maths students

If you would like to write about your experiences of studying Maths at King's for our prospective students to read, please email Kristy in the Admissions Office for further details:
undergraduate.admissions@kings.cam.ac.uk