

Advice on Personal Statements

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Personal Statement/Extracurriculars

First, for Maths at universities like Cambridge, Warwick, and Oxford (most high-ranking ones but not all), they won't really read or care much about your personal statement. For example, Warwick claims they briefly look at it for a few minutes and never look at it again, and I've heard Trinity have said that they read it just because they have to. This is because they have better means to measure the suitability of a candidate for their course, such as interviews and admissions tests.

What you should take away from this isn't that you don't need to write a good personal statement but that you don't need to worry about doing extremely specific extracurriculars or very minute details. Make sure the statement is good for other universities. James Munro, the admissions director at Oxford, put it best when he said, "If you have an hour to either improve your personal statement or do some maths, you should do some maths."

They're generally not interested at all in anything in your personal statement which isn't about maths, but it is good to have a line or two on this for the sake of other universities. In the interview, they're generally unlikely to ask you about anything on your personal statement, but it's worth being aware of what you wrote in case they ask you about something related to it. If you claim you know a lot of university maths, you should know it! You should also know a little bit around it too. To take an example from university maths: if you say you know Cauchy's integral theorems, then you should know Liouville's theorem, an important (but quite quick) deduction from Cauchy's integral formula.

However, this doesn't mean that doing extracurricular maths is a bad thing. In fact, it's probably the best thing you can be doing at this stage – it's just that you shouldn't do things just for the personal statement. Instead, explore the maths you enjoy the most and want to learn about. That way, you'll learn a lot more and end up organically having a lot of things to write on your personal statement later on, which will make writing it a lot easier. Here are some possible suggestions of things you can do that you might enjoy:

1. **British Mathematical Olympiad problems.** These are fun problems focusing on problem-solving ability over specific knowledge. They are difficult, but the first few questions tend to be accessible, and you'll find you improve fairly quickly. Past papers are [here](#), and you might find books like *A Mathematical Olympiad Primer* by Geoff Smith or a more advanced book, *Problem Solving Tactics* by Angelo Di Pasquale et al., useful for Olympiad-style problems. You might also enjoy doing British Physics and British Informatics Olympiad problems if you do Physics or Computer Science, as they involve a lot of problem-solving similar to maths. There are also quite a few websites for programming problems online, such as Project Euler or competitions on websites like Kattis or Codeforces.
2. **STEP Foundation modules.** These are more directly relevant to what you'll need to study for the STEP exams in year 13 once you get your offer. They're a great way to ease into doing STEP questions and can introduce you to new maths you might enjoy. . Somewhat related is [Stephen Siklos booklet](#) for STEP, which is similar to the foundation modules.

In a similar vein, you can start looking at [Oxford MAT papers](#), which are tamer than STEP as they're taken earlier in year 13. Oxford is also running a bunch of maths content on their [YouTube channel](#) weekly with James Munro, where students discuss some aspect of maths they enjoy:.

3. **YouTube channels** such as 3blue1brown, Michael Penn, and blackpenredpen often discuss interesting math. The latter two focus more on solving problems from various sources (Putnam, Olympiad, etc.), which you can also look into.
4. **Reading a book about maths.** This is something many people put on their personal statements. I feel like it's useful but not necessary, so don't worry about forcing yourself to mention you've read a book. There are many reading lists by universities online; here's one by Cambridge: [Cambridge reading list](#).
I haven't read most of the books on the list. I recommend anything from the 'A Very Short Introduction To' series, as they're small enough to fit in your pocket and read while walking around. I read the one on numbers while walking to school.
5. **Interview preparation.** It might be a bit early to be doing this stuff, but there's a lot of fun problem-solving in interview preparation resources such as the [TBO booklet](#).
6. **Online courses.** You can find many online math courses on websites like Coursera. One I enjoyed was this [course](#) on Fibonacci numbers by Professor Chasnov. You can find a lot of university-level topics and things that aren't taught at A-level. You can also look through university courses with notes online; [Cambridge notes](#) by Dexter Chua are well known. However, I don't recommend learning university maths yet because you have three years to do that already! Only do it if it's the most interesting thing in maths which you want to do.

Writing the Personal Statement

The personal statement was my first time writing a serious application and set the template for how I wrote all my subsequent applications - for my Masters, PhD and scholarships. I think part of the value in writing a good personal statement is getting good at writing these types of things so it is well worth the effort put in. The following advice is essentially how I constructed my personal statement.

I think it's much better to write about specific things you learned or problems you solved rather than making general comments. The easiest way I found to write a personal statement was to talk about what I'd gained from doing certain things. By being specific and going into detail, I could discuss the maths I'm interested in and what I've learned from it. For example:

“Putnam problems introduced me to more advanced problem-solving and encouraged me to bring together different areas of mathematics I'd learned, such as matrices and number theory, in problem B4 in the 1994 Putnam paper. Because this combination of subjects was unfamiliar, I worked towards a solution by gathering as much information as possible and synthesizing it. It also introduced me to a new perspective on Pell's equation, which I studied further in a paper by Seung Hyun Yang.”

This example also highlights how I structured my personal statement. I tried to make each topic flow from another to show that my mathematical studies weren't in isolation—interest in one thing often led to another. This made it easier to read and less like a list of things, creating a narrative of my mathematical journey. Another benefit was that it shortened the number of characters by linking topics rather than listing them separately.

You could also discuss links between different things you discovered as you studied more math. That could be across different fields of maths (e.g., analysis and number theory to show the sum of reciprocals of primes diverges—look up the Euler product of the Riemann zeta function if you're interested) or even across

subjects. I liked discussing how programming helped me solve problems by verifying things numerically or how mathematical ideas made my algorithms more efficient (e.g., using symmetry to avoid recalculating the same things). Another good subject to link is Physics, where you could solve a physical problem and encounter new maths. For me, analyzing pendulums led to encountering something called an elliptic integral.

I applied this method—writing about what I gained from each activity—to everything in my personal statement, focusing on what I learned or found useful. I don't think it's worth worrying about where you learned it from. Whether it's a book, a YouTube video, or an online article, Oxford and Cambridge won't care about the source, but rather what you gained from it. So don't stress if you can't find a book or if you mention a YouTube video. With bigger sources like books, you can zoom in on specific things you learned, making it more versatile.

Regarding introductions and conclusions, you should write what feels right for you. I'm not a fan of quotes or writing extensively about why you love maths. I just mentioned my interest and began discussing my studies to show it. For my conclusion, I said something about how I enjoy maths and want to pursue it at university. You don't need to end with a 'bang'; I preferred keeping it straightforward. One piece of advice I received was to link back to why I want to study maths throughout, like “this gave me a skill that's useful in math degrees,” typically at the end of a paragraph. You might like doing that.

Some personal statement advice from [Cambridge](#).