

Promoting Core Maths – Recruitment Of Students

I don't know about you, but sometimes I feel incredibly fortunate that I am a teacher of mathematics. Not only are we spared the upheaval of frequent wholesale curriculum change (my wife, who is an English teacher, is forever having to start from scratch as the exam boards seem to alter the set text every couple of years, just as she is beginning to get her head around it) but we are also, by and large, able to avoid the nonsense of subjective marking, having to shoe horn a gut feeling into a set of criteria where sophistication and complexity have been delineated by replacing one word for another in a mark scheme. Having just marked a class load of extended projects for the EPQ, I am in awe of teachers whose day-to-day workload involves such uncertainties. Of course, both eventualities crop up every so often when teaching mathematics but, on the whole, we know where we stand - students will always have to learn Pythagoras' Theorem at some point and a right angle triangle with shorter sides of 3 and 4 will always have a hypotenuse of 5!

Another source of stress we normally miss out on is the scramble for bums on seats that we observe teachers of other subjects going through over the course of the academic year. We have just been through the GCSE options process with our daughter, who is currently in year 8(!), and seeing her humanities teachers practically fighting over her custom brought home just how lucky we are. Obviously, recruitment enters into our mindset with regard to A level mathematics but with numbers growing year on year we haven't had to try all that hard to ensure we have viable classes. Then along came Core Maths!

Since I have worked as a Core Maths Lead it has become increasingly evident that knowing how to attract students onto a course is not necessarily all that obvious. Some centres have found it almost impossible to recruit enough students to run Core Maths and many have struggled to cobble together a class of ten let alone the required twenty that we were all aiming for when we applied to become a pilot for the new qualification. Timings have frequently been cited as an issue – there simply was not sufficient time last summer to get the message out to year 11 before they went on study leave and, as a result, students did not know what they would have been signing up for. But I sense that there were other factors at play as well and top of these, I suspect, is that we mathematicians are simply not all that practised in having to

promote our courses. Well, this time around we can hardly use the former reason as an excuse, so if numbers remain low we will need to have a long hard look at the way we have attempted to recruit students!

To be honest, when I first found out about the Core Maths qualification my initial reaction was one of dismay. I assumed it would be a requirement that all students who were not studying A level or doing a GCSE retake would be required to take it. But knowing what a slog it is to get unmotivated, disgruntled pupils through their GCSE mathematics, the last thing we needed was another two years of cajoling, containment and frustration. So I was overjoyed when it was decided to make Core Maths optional and, for me, it is crucial that it remains that way. It seems to me that Core Maths above all else requires motivated, free-thinking and enthusiastic students; students who enable tasks to blossom and open up through curiosity and enquiry. I worry that if Core Maths were to become compulsory it would be almost impossible to stay true to its ethos (let's face it, a tricky class is much easier to manage if the task is repetitive, perfunctory and procedural...the antithesis of what Core Maths is about!) and I worry that if we are not successful in recruiting students next year, minds will start thinking that way. We need to get bums on seats so that, if nothing else, we can set minds at rest that the government targets for 2020 will be reached and this leads to the million dollar question...how best to go about attracting students onto the course?

Well, it would be arrogant of me to suggest I have the answers; I feel I still have much to learn and improve in the way this is done, but with 46 of our current year 11 signed up for the course next year, I am overjoyed (and relieved) at how the recruitment process has worked at Ivybridge.

Here are my top tips:

- Ensure that the department are aware of the course and that students are having conversations with their own maths teachers about it on a semi-regular basis. A year 9 student I am currently teaching mentioned to me that she would consider taking Core Maths when in the sixth form (I was trying to persuade her to consider A level maths as an option). I am not sure how she knew about the course but somehow word has got round.

- Try and talk to classes (and be selective as to which ones) rather than using an assembly as a platform – students need to feel comfortable to ask questions and you can be more interactive when talking to a smaller group of students.
- Get in early in the school year. I visited the year 11 classes in my college in February, before they had to complete their option forms.
- Talk about their options later on in life, university prospects and a student’s place in the global market. I use Jeremy Hodgen’s 2013 report for The Nuffield Foundation entitled ‘Towards Universal Participation In Post-16 Maths’, in particular the table below:

TABLE 2: WHAT ARE THE PARTICIPATION RATES IN UPPER SECONDARY MATHEMATICS EDUCATION?

	Studying any mathematics	Studying advanced mathematics
England	20%-26%	13%
Germany (Rhineland-Palatinate)	>90%	8%-14%
Hong Kong	>95%	22–23%
New Zealand	71% (Y12), 44% (Y13)	66% (Y12), 40% (Y13)
Scotland	48% (S5), 21% (S6)	27%
Singapore	66%	39%
USA (Massachusetts)	>84%	>16%

I tell the students the ‘Studying Any Mathematics’ figures for Germany, Hong Kong and Massachusetts and they then try to guess the figures for England. I think this is particularly powerful in making students realise that a lack of mathematics post GCSE would be particularly disadvantageous when competing for university places or jobs with people from other countries.

- I have kept my talk as anecdotal as possible. I think this helped. It was also quite brief (about 10 to 15 minutes). I think this helped too.

I started off using a Powerpoint presentation but I quickly realised this was having a negative effect and have found that ‘just having a chat’ has been far more effective. I talk about my own experience of meeting up with a friend in my first term at university who was doing a course that sounded fascinating but, upon enquiring into a transfer, realising I couldn’t because I didn’t have the required A levels.

One final point: having taught a very small core maths class this year (they have been a class of five students for the bulk of the year), I have been surprised at how frequently the size of the class has hindered the learning experience (much more so than with a small class of Further Mathematicians for example). Mathematical conversations and discussions benefit from having a range of contributors and points of view – it seems to me that core maths needs this in order to flourish – and often with such a small number of students only one voice gets heard. In addition, collecting sufficient primary data has been difficult – at one point we had to borrow a Year 10 class to help!

I am very much looking forwards to teaching core maths next year, in part because I have been through the process already and so have a much better idea of what to teach and how to teach it but also because I should have a class that is big enough to really allow the students to take control of their learning in a way that has only been partially possible this year.