MATHS

I never thought that a maths book would change my outlook on life. Maths was always a subject that I excelled at, but not one that particularly intrigued me - at least not until reading Timothy Gowers' "Mathematics: A Very Short Introduction". From that point on, maths has been the only concept that never fails to capture my interest and imagination.

As an independent learner, I relish the freedom to explore a subject that has no limits - but mathematics provides me with more than just that. The satisfaction that comes with solving a once baffling problem and the adventure of finding my own solution are unmatchable in any other discipline. Furthermore, the rigorous nature of mathematical proof is tremendously appealing, for it provides me with the almost unique opportunity to develop an argument that cannot be challenged. My curiosity has led me to read beyond the topics covered in school, thus deepening my mathematical understanding. I have just finished Ian Stewart's "From Here to Infinity", which opened my eyes to the various practical applications of maths; as well as to some of its beautiful, newer areas - topology, for example. Yet most of all, it never ceases to stun me that so much amazing mathematics arises in comparatively simple contexts - such as fractals being applied to the length of coastlines. It is this omnipresent aspect of maths that drives me to study it further.

To develop my problem solving skills, I have tried to expose myself to as much mathematics as possible. Taking part in my school's team for Glamorgan University's Sixth Form Maths Quiz 2009, which came 2nd out of over 30 teams, was a wonderful chance to tackle some interesting questions. Furthermore, teaching my older sister AS maths was profoundly beneficial, as it required me to explain ideas clearly - consequently developing my own appreciation of the concepts. However, the most invaluable experience has been working through STEP past papers and Anthony Gardiner's "The Mathematical Olympiad Handbook". Completing this style of question has taught me to approach maths from a fresh perspective and to realise that cracking difficult problems involves a great deal of logic and lateral thinking - skills I have greatly developed over the past 12 months. After completing A-level Mathematics in a year, I now look forward to widening my knowledge through the study of Further Maths and the additional AS, whilst continuing to explore the boundless areas of the subject through wider reading and problem solving.

However, mathematics is not my sole interest. I am a budding musician and have the role of principal clarinet in my school and county orchestras, as well as being a member of the National Youth Orchestra of Wales. In addition to this, I performed with Cambridge's Shadwell Opera Company at the Edinburgh Fringe this summer and will be playing at the Music for Youth Schools Prom at the Albert Hall this November with my clarinet quintet. The extent of music in my life has greatly developed my personality, making me a more confident and well-organised individual. Moreover, maths and music possess an indisputable link, acknowledged even in classical times by the Pythagoreans. My enjoyment of both disciplines comes simply from my appreciation of deeper patterns and my desire to understand them. As for my other A-levels, choosing to study French and German will open up countless opportunities to travel and be part of the international community. Most importantly, though, studying them has proved to be highly enjoyable! Languages will be invaluable preparation for the world outside of education, providing me with a different perspective to complement my mathematical focus. I look forward to starting a maths degree and know that it will be both an enjoyable and an insightful experience, which I will fully appreciate.