

The study of science constantly poses new questions. I want to continue to explore many different fields of Chemistry and I am particularly attracted to the subject at university by the opportunity to discover new topics which will make the experience stimulating and varied.

I enjoyed studying Chemistry at GCSE but my passion for the subject really developed in my A Level years and I am eager to study it in much greater depth. The relationship of the subject with other sciences such as Maths and Biology fascinates me. One topic where this was particularly relevant in the A level course was buffer solutions. This incorporated the use of logarithms and demonstrated how these solutions are used in the human body to maintain blood pH. Chemistry allows me to understand many everyday occurrences in greater detail and on an atomic level. This includes how carbon monoxide is dangerous to humans due to the molecule acting as a ligand in haemoglobin that does not detach as the oxygen ligands do.

I have found the study of Maths interesting as well because of the way I can relate it to things around me, for instance how the Fibonacci Sequence occurs throughout nature, flowers and shell spirals being examples. I have read *Why Do Buses Come in Threes?* by Eastaway and Wyndham which describes the Maths behind everyday life. One point of interest is how the irrational number pi is key to many equations such as those related to circles or pendulum cycles. I believe that Maths is an important component in the study of Chemistry and studying it has enabled me to tackle problems logically and develop my data analysis skills.

The prospect of studying Chemistry at university excites me as I will be able to further my knowledge and practical skills. I found the double end point titration that I performed in my EMPA interesting because I had to use both phenolphthalein and then methyl orange to find two equivalence points. The experiment required attention to detail and accurate observation to spot the subtle colour changes of the indicators. It has been inspiring visiting various university departments and seeing the wide range of equipment available to undergraduates. I was particularly impressed by the NMR Spectroscopy machines, which I have learnt about only in theory, and I look forward to using them myself.

Recently, I have read *Periodic Tales* by Aldersey-Williams which describes the history of the elements. While some elements appear to have been discovered by accident, the author highlighted how persistence paid off in the discovery of others, for example Tennant's isolation of iridium and osmium. These stories relate to a fascinating talk I attended at the Cheltenham Science Festival called *A is for Arsenic* by Kathryn Harkup. She discussed the use of poisons that Agatha Christie wrote about, covering topics ranging from the discovery of phosphorus and phosphorescence to how cyanide acts as a poison. This summer I did an online course in Biochemistry run by UEA and currently I am reading *Foundations of Physics for Chemists* to broaden my scientific knowledge and fully make the most of my Chemistry studies.

At school, I was selected as a House Official with specific responsibility for providing support and guidance to the new lower school pupils. Also, I volunteered as a mentor, helping GCSE students with Maths and Chemistry. This year I am tutoring an A level student in these subjects. Breaking down concepts and explaining them in different ways is helping me to develop my presentation skills along with my ability to give feedback to others. Also, I am working as a lab technician in my former school which will enable me to maintain my practical skills and learn new ones.

I work at Waitrose where I am always face to face with customers which has developed my inter-personal skills as well as my efficiency. In my spare time, I enjoy running, swimming and playing the piano. I recently attained my Level 1 Certificate in British Sign Language.