

## ✔ Personal statement

My great interest in physics has developed from when I was young and since GCSE, when it was first taught separately, it has been my favourite subject at school. This is evident in my HPQ and EPQ titles. My HPQ was based upon the concept of warp travel, where spacetime is bent around the travelling vessel. The subject area of my EPQ is superconductors and their possible uses in scientific research, such as the Large Hadron Collider and in commercial products. Not only have these projects given me the ability to conduct literature reviews independently, they have allowed me to contextualise some of the physics I have learnt and I now have a greater appreciation of how ideas can be used in the practical world. Most importantly these projects forced me to organise efficiently at an early stage.

For the last year, I have been regularly attending lectures organised by the Institute of Physics at my local university. These lectures have given me an insight into the specific and diverse academic fields that a physics course can lead into, from the ability of aquatic animals to survive Antarctic conditions, to whether or not Jupiter should be considered a planet. The sessions have allowed me to understand how physics can be applied to a vast variety of situations and how it links with all other pursuits in life.

My work in school has given me the opportunity to be able to assist other students who may not understand some of the topics covered. During my time in the Lower Sixth, I provided lunch time revision sessions for year 11s taking the Free standing mathematics qualification. This year I am leading revision sessions in maths, chemistry and physics for my peers. These sessions are mutually beneficial, as while other students are able to improve their understanding, I consolidate my own knowledge and enjoy discussing these subjects with others. This experience gives me confidence that I will be an active member of my course, engaging in student revision groups.

I also enjoy problem solving which means I approach difficult concepts with a practical mindset allowing me to work through until I have a full understanding. This means that I do not give up even when the topic seems particularly complex. I also have a competitive nature, demonstrated by my participation in school sports teams, such as basketball, football and cricket. As a result, I give my all in everything I do, despite not an obvious interest in the subject matter.

In addition to physics, I am especially interested in maths and chemistry. These two subjects are crucial for understanding physics as many of the concepts link, yet the different skills required improve my ability as a physicist. This past summer I completed a chemistry course which introduced me to NMR spectroscopy and gave me the chance to experience how the two disciplines overlap.

I had the opportunity to take part in a Nuffield Research Placement at Cranfield University. The project I was assigned was in materials science with strong links to chemistry. It involved an investigation into the synthesis of lanthanum oxide aerogels using epoxides as a precursor. I found the experience very inspiring, as not only did I learn useful lab skills, such as data gathering, processing and interpretation, I also had the opportunity to talk to PhD students about their chosen career.

These discussions have led me to believe that my future career will be in research, as I want to be able to understand the world around me. By placing myself on the frontline of research, I not only have the ability to prepare my own work, but I am provided with a platform to assist others. I do not have a single field in physics that I know I would like to commit myself to as I have not had the exposure to many of the possible disciplines. This means my time at university will not only give me a degree, it will direct my career based upon my experience of each field.