**Applied for:** Mechanical with Automotive Engineering and Motorsport Engineering

**Offers:**

University of Bath – A\*AA

Oxford Brookes – Unconditional

The majority of my time revolves around engineering. In school, I'm part of the GreenPower team where we have been creating, testing and racing a Formula 24 car. As a team, we disassembled and renewed most of the car, enabling me to practice; wiring, assembly using bolts and rivets, setting up a brake system and problem solving. Outside of school building a bike from parts, with my own style, feels like much more of an achievement than buying one. I have my own MIG welder as a result of wanting to learn to fabricate things for myself. I try to find time to learn when I can, as it's a skill that I want to master.

Recently I repaired a vintage Raleigh Chippy. It needed a plastic clip, to hold the wheel to the fork, that is no longer produced. Using the clip on the other side for measurements, I was able to accurately reproduce it in CAD software, send it for 3D printing and install with rivets. For product design, I chose to base my product on my interest in bikes, choosing to design and prototype a bike holder that goes on an interior wall, enabling safe and secure storage. For the project, I have been able to use my CAD skills to make digital prototypes of my designs. Problems I have solved so far include: deciding on materials to meet both the user's desires and the requirements for the product's strength; solving how to get multiple shapes and sizes of tubing to fit in my holder and still be secured tightly. I have done this
whilst keeping to the timeline.

In physics, my favourite topic so far has been mechanics, as it really highlighted the links between maths and physics. It just made sense. In my PAG work I have shown that I can communicate my ideas both scientifically and mathematically. I am able to problem solve, finding mathematical relationships as well as being able to plan an experiment to test them.

As I achieved the highest maths mark at GCSE in school, it seemed only natural that I continued to A-level. I have so far particularly enjoyed the algebra sections; many people don't like it, but I enjoy how methodical it is to rearrange something.

With my EPQ, I created links to all three of my subjects. I began with research to ensure there was enough information for it to be a substantial enough project. Then I established what I wanted to learn, my title was "Assess how an entrepreneur becomes a million/billionaire, more specifically, how did Elon Musk do this through PayPal and Tesla". Before beginning my write up I carried out the majority of my research. As the project developed, I had to do additional research to fill gaps in my knowledge, being sure to compare and evaluate the usefulness of sources and then adding citations when used.

For work experience, I spent a week at Moog in their testing department. This was my first true taste of what a working week was like in engineering. I shadowed an apprentice who was building a hydraulic test rig for a tiny part of an aeroplane wing. He showed me what he had to test on the rig during the set up and how to fully test each part. I also spent 5 days working at Poeton, in 5 different departments. I most enjoyed Aptec; they handled the whole process a motorbike cylinder went through when recoated, so I was able to get a complete understanding in a day.

I attended a 17-week Cheltenham design academy course in 2015, which helped me to develop my design skills including; drawing, basic Photoshop, modelling, group design and photography. I was most interested in the drawing, they taught us to sketch in an almost abstract way to get ideas down on a page and then the ones that you like you can develop into something more realistic, that way you don't limit your designs nearly as much. I have been able to apply
these skills to my DT.

In summary, you can see my life is all about engineering and I am eager to develop and expand my skills at university; this will keep future options open rather than specialising with an apprenticeship at the moment