



## APPLICANT 1 – A DRONE

What does/did your project aim to achieve? **Please write up to a maximum of 300 characters**

Drones in the modern era are a common product, used in many different industries. In an age where the Earth's resource and environment management are becoming a crisis, I decided I would attempt to make drones more sustainable, as drones are not very sustainable at the moment. They use power from fossil fuel and nuclear plants, and are made of plastic or materials that do not decompose, so I set out to fix as many of the environmental issues with drone designing and building as I could.

Please describe and explain your project making clear and direct reference to your supporting documentation. **Please write up to a maximum of 1000 characters**

I began by having to create a list of issues with drones, so I could pinpoint the areas that would need improving later on. After locating issues, I came up with design changes I could make to drone designs that would improve their sustainability and functionality. The best idea I had was to use solar powered batteries, and materials that have less impact on the environment, like recycled plastic. These decisions were important as they created a base for the manufacturing part of the project.

What have been the successes and failures of you project so far? **Please write up to a maximum of 500 characters**

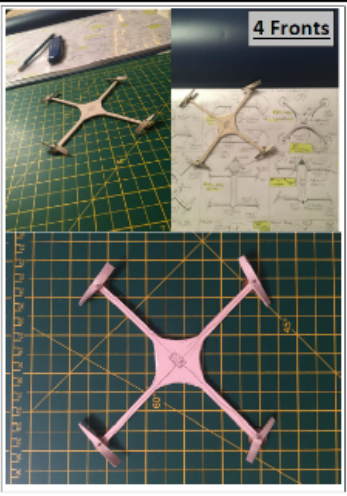
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What lessons of an engineering nature have you learnt from working on this project? **Please write up to a maximum of 500 characters**

I have learned how important planning and designing is to get a product manufactured correctly, and I have also learned how to use multiple types of machinery, including laser cutters, bandfacers, reciprocating saws, 3D printers and pillar drills. I have learned the importance of sustainability, and how important it is to keep our environment alive. I have learned to be more precise when drawing cutting lines on my material, as I needed to be for my prototypes to be accurately cut.

## VISUAL EVIDENCE

Problems	Solutions
The design is boring and not very innovative.	Add interesting details such as clipped wings.
The propellers are out in the open and could collide with something.	Create and add propeller guards to avoid collisions with propellers.
The camera only faces in one direction.	Add a motor that the camera attaches to in order to spin it.
It could be confusing to use due to the headless design.	Simple buttons on the controller would make it easy to understand.
The body has thin parts that are liable to snapping in a crash.	Make the body out of a robust material or thicken it.




Drone I'm using for manual research.jpg



## **MARKER'S COMMENTS**

This applicant has chosen a popular project to write about. The applicant uploaded a whole project folder and we have included a page from it. The drone in the second image (used in research) was not made by the applicant but was uploaded by the candidate. It doesn't really help us learn more about the applicant's engineering capability: we advise that all uploaded images be relevant. It is important to note at this stage that we do not assess the quality of the project but what the applicant has to say about it. In this case the idea to improve upon existing drones by using solar power seems a little ambitious and it is not clear from the information provided if the applicant managed to achieve this when the application was submitted, but they may have done so by the interview date. The 'lessons learnt' section could have been written in a slightly more expansive way and possibly included more information about drone flight and weight and how solar power may have helped. In other words, the applicant could have linked their aim more closely to the engineering lessons learnt.