

Judges, Senior Project
Sequoyah High School
4485 Hickory Road
Canton, GA 30115

Dear Judges,

My name is Michael Gray and I am eighteen years old. I have played and lettered in lacrosse all four years of going to school here and one year of speech and debate. I also became certified in an architectural CAD program while taking the architecture class here. My goals in life are to join the United States Navy and then get a job in engineering or architecture. My choice for the Senior Project is to design and 3D print out a lacrosse head.

My paper topic was about how using 3D printers was more advantageous as compared to traditional manufacturing methods such as injection molding and other techniques common in the manufacturing field. The issue that was researched is why traditional manufacturing is commonly used over 3D printing. What was found were the multiple advantages of 3D printing. A few advantages were the time saved, the cost over time, and the ability to create more easily with the 3D modeling programs directly associated with the printers themselves. The most prevalent advantage was the ability to produce a prototype in a few hours rather than a few days.

My finished product was a 3D printed lacrosse head. Only half of the head was printed out due to size and what my facilitator discussed. We both decided rather than make a full-sized model to just make half of it to show the improvements I added in. I added in extra supports on the neck of the head and made it thicker and more solid, so it would absorb blows better than the skinnier heads. The successes I achieved in this process were the time management skills alongside the skills I developed by having to do research and development tasks. The obstacles faced were mostly while modeling the head in Inventor. Occasionally the program did not want to do exactly what I wanted, but with the help of my facilitator the issues were easily overcome.

The topic and research all relate to a career of 3D modeling and any type of designing job. The career choices are wide because 3D modeling can be from interior furniture all the way to spaceships. I learned that I can adapt well to time sensitive situations and being organized in stressful situations. My time management skills were both tested and greatly improved due to this project. I would still like to pursue this career one day. It still interests me and if anything, this project increased my interest and passion for design and engineering.

Thank you for your time. I hope you enjoyed the presentation and maybe learned something new.

Sincerely,

Michael Gray