

- Which STEM career or company did you select, and why?

NASA because they are famous and also delve right into STEM engineering robots to explore the surface of Mars and how to reach it. NASA uses math to find the right path for the rocket, science to make it work, engineering to build it and technology that even reaches us, like memory foam. Originally made for Astronauts to get used to gravity again then for everyday people.

The robots they build are also like ours, with an objective, restrictions and the need for the ability to adapt, but much, much more cool. Advance, just bigger and better overall. Basically what we make is sort of mini practicing versions of what they are, the perfect match.

- What resources did you find to learn about professionals in this career or company and how they use the engineering design process?

The NASA websites, they say they have many people specialised in each area and then specialised even more. There are IT people, Astronauts, Engineers from many degrees including mainly aerospace engineers like my cousin who is a student there.

How do professionals in this career or company apply steps of the engineering design process?

The engineers at NASA first find the question they want to solve, they think of solutions, trial them, create small experiments that slowly as they get tested become more complicated, better suited to the task and big enough for the real thing. Or small enough, depends.

According to Zeplin the design process is

Empathize, Define, Ideate, Deliver, and Test

But I think that it's Question/Problem, (half-step, finding the aim (to climb to run to jump) Solution ideas, Planning and making it and then testing it and repeating it all over again on what to do to make it better.

- How does the professional approach to engineering design match or differ from the approach used by your team?

Quote from the NASA website "Engineers must ask a question, imagine a solution, plan a design, create that model, experiment and test that model, then take time to improve the original – all steps that are crucial to mission success"

This is eerily similar to how our team functions. We face the problem, think of solutions, build many different plans, test them and the ones that work the most efficiently are then worked upon to be improved.

For example our catapult was a shooter, a rolly thing and a puncher. The catapult had a weird gear ratio and was too tall (got in the way of the climber) so we simply improved it by making the gear ratio the same but with the smaller gears instead of the bigger ones (we used the largest one:84 with the middle sized one:32), and turned it on its side.

It's weird how simple the solution was, other attempts were much more unnecessarily complicated...

- How has participation in VEX Robotics prepared you for a future career?

VEX has inspired me not to be a doctor. Just kidding. I don't know what I want to do yet and my whole family does medicine, VEX competitions and building robots itself has made me want to try something new, make something new, do something new. I love the trial and error and the pride of a creation fully your own and your teammates, even though during it can be tough. Working with other people has helped me so unbelievably much in teamwork, from barely being able to speak to someone else, I can talk to them figure out what they need and want, and what everyone else does too and figure out a solution. Oh, but it hurts so much when it gets taken apart, but that's the best part... Starting and trying all over again to do it right.

An adventure that seemingly never ends.

