Career Readiness Online Challenge

Implementing the Design Process in Our Robot

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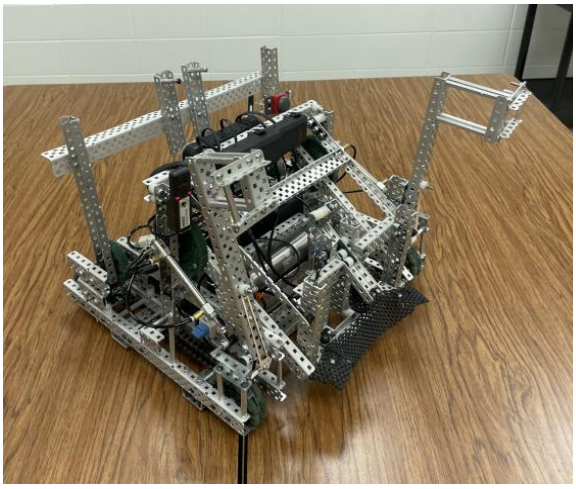
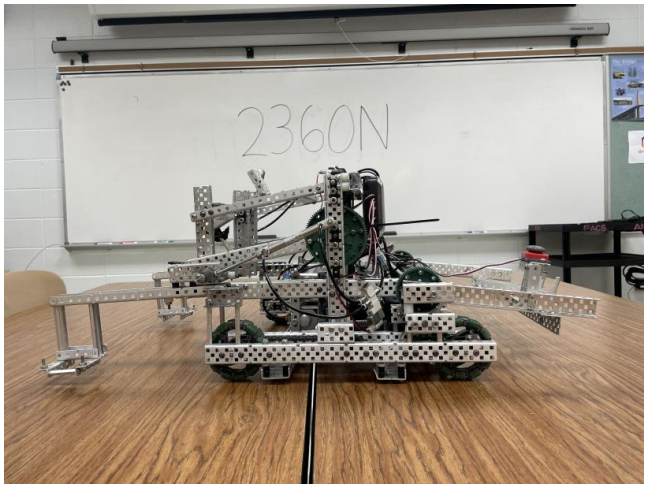
With engineering design becoming a necessity in the world today, many professionals benefit from a combination of mechanical and electrical engineering as well as robotics and STEM-related knowledge. Pursuing a career in robotics today will make a huge difference, as the world is advancing quickly with the help of technology. We, 2360N, have studied many of these topics and we are willing to become professionals in this career field.

A professional's use of the design process in robotics matches our team's design process because we define all the possible problems of what we are building. Our team brainstorms, evaluates, and tests each solution based on what problems we might encounter and what goals we need to accomplish to create a prototype.





Using the engineering design process, we, 2360N, designed a sophisticated robot with pneumatics and various abilities.

We selected engineering as a STEM career because it greatly benefitted us in the long run. Ryan and Valeria know how to use and program pneumatics and were able to design and with the help of others build a highly sophisticated robot as shown in the picture above. With this advantage, we were able to overcome many of the challenges of VEX VRC since we could use pneumatics as extra power instead of trying to stay below the 8 motor limit because of the design constraint.

Additionally we used advice from other skilled team members and the internet to find and learn about professionals in engineering. We found out that robotics is helping change the world by helping humans do things more accurately, efficiently, and safely, and with the design process, many people who specialize in the field of robotics can figure out what they need to do.

Engineering professionals in STEM-related fields apply the steps of the engineering design process by defining problems and solutions to a particular situation. They research ideas about their topic and establish criteria for their prototype. The main part of this process is that there should always be continuous improvement so that the prototype can always be up-to-date and the best it can be. This process has allowed many big organizations such as VEX robotics to prosper in activity.

The approach that our team took was a more “see it fix it” approach rather than outlining the problems that we might encounter along the way, which does follow the engineering design process because it falls under trial and error, but we think that if we had followed the engineering design process more carefully, paid more attention to the small details, and thought out each step more carefully that would eventually have big impacts, we would have been able to be even more successful.

Lastly, we feel that participation in VEX Robotics has greatly improved our understanding and chances at achieving a future career in STEM-related fields, such as machine learning and AI. VEX Robotics has allowed all of us to become better engineers, and with this ability, we can invent tools, technologies, and other products that will better humanity in the future.

All in all, robotics has prepared us all for the future, as more and more engineers, designers, and people involved in robotics will be needed for humanity to advance. Acquiring a career in a robotics related field will greatly help the world and one’s chances at getting a job, which is why pursuing a career in robotics will be the best choice to become a future innovator with a successful career.