

VIQC Middle School - Career Readiness Online Challenge

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When we were picking our career, we wanted to try and find one that we thought was prominent in the STEM field. After some consideration, we found that a roboticist was the job that fit that label. This is because right now we as a team are working with robots in order to pass a challenge and it is similar to a roboticist using robotics to solve problems.

In order for us to learn more about the career we went to different sources of information. These include websites like

<https://www.northeastern.edu/graduate/blog/how-to-become-a-robotics-engineer/> ,

<https://www.careerexplorer.com/careers/robotics-engineer/> ,

<https://www.shrm.org/resourcesandtools/tools-and-samples/job-descriptions/pages/robotics-engineer.aspx> as well as databases such as World Book Online. After reading these resources, we were able to understand more about the career, and more about how they use the design process in their work.

People in this career utilize the design process by first thinking about the function of what they are designing, and what it needs to do. After this, they try to figure out the appearance of the robot because they need to make it look a certain way to make it practical.

After figuring that out, they look for materials to use for the building that are suitable for the design they are using as material can impact a lot. For example a heavier material might be used for a more tank-like robot, or maybe a lightweight type may be used in order to make the robot more mobile.

After sorting out all the kinks of their design, they start to use their materials in order to create their robot, making a prototype of their design. After creating their prototype they will start to test their robot in the environment in which the robot is going to be used in. After conducting the test they figure out what needs to be changed and improved. Then they continue this cycle for months. This is because even after years, there can be new technology that they can base their robot designs on, so truly there is no final design.

The approach that professionals apply to the engineering design process is similar to our process, in the ways where we plan out and try to figure out what design will be the most practical for our challenge, then build it. After this we test it and find the weak parts of the robot, then improve the robot and repeat the cycle of remaking and testing the robot until we like the result, just like real roboticists in the STEM field. Although it does differ in some aspects such as the planning process is much more complex than our process, they have more factors to consider, while it's much easier for us to plan out as we have some sort of frame of the robot.

Participating in Vex Robotics has helped us prepare for future jobs in the technology field. This is because we learn many things along the way while we try to build the robot. We have learned different things about how each part interacts with each other and how we can use things such as gear ratios in order to increase or decrease torque or speed. Another aspect that it gives insight into would be programming which is an essential part of a technology field. Even though it is block code, it still has a part. It gives us a taste of what would be to come if we choose to proceed with a STEM job such as a roboticist