

## My Robotics Journey

When I first hear the phrase “Girl Powered”, I think of the increasing number of girls joining STEM programs. There are only 27% of girls in the STEM programs which means the other 73% of people in STEM programs are males. When I think of “Girl Powered”, I think of the equality that we should have amongst males and females in our STEM programs. I think of the future that should be open to both boys and girls that join their STEM programs. A future that we should be able to see in one of our STEM programs— Robotics.

When I was in 5<sup>th</sup> grade and looking for a middle school that piqued my interest, I heard about John F. Kennedy’s BEAT program. From the things I had heard, I was really interested in the robotics program. I eventually went to the school’s fairs to learn more about it. When I had been accepted into the school and attending 6<sup>th</sup> grade, I constantly wanted to apply to robotics. During our first robotics meeting, our instructor, Libni Simons, passed out activity books and instructed us to design a robot with our teammates. He chose teammates based off grade level and had those students work together. This activity allowed us to plan our robots with our teammates based on the 2019-2020 VEX IQ Challenge. Each team designed their



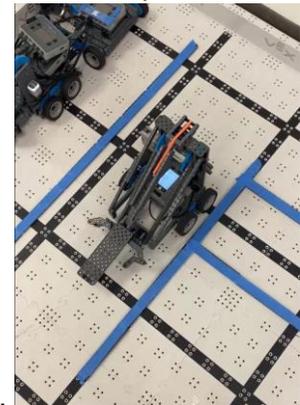
robots and was given a starter robot and super kit then started to build their robots based off the design. Working to build the robots was hard because we could not agree, and one problem was that we didn’t have enough experience. After some meetings, we got along so we could build the robot and test the problems we had with it. As we were inexperienced, we didn’t know how to maximize our robots using motors. So, we did the best we could without them, but that meant we couldn’t make any arms move. After building, we drove it around the field to get a handle and a feel for driving the robot. We took turns driving the robot, getting advice from the older kids, as well as getting input from our teammates working on their robots. Soon enough, a VEX IQ challenge was coming up and we all started to work together by practicing and figuring out which strategies would allow us to best utilize our robots and achieve the greatest number of points. As time had passed, everyone started to understand their position and what they could do for the team. Some students wanted to try new positions and gain new skills. Our teammates were ready and willing to learn what they could achieve and do.

In our robotics team, we have different roles and positions that everyone contributes to help the team. Everyone contributes whether it means building robots, driving, or coding. Some people are willing to give their thoughts and input to help the robot better function. When we first

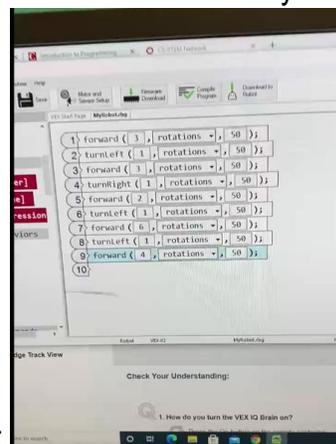
started robotics, everyone had the same role to build robots. As time had progressed, the roles have started to become more diverse. We went from having just builders to drivers to students coding the robots for autonomous driving. When people weren't coding, they would be building or driving robots. There were some people that had the creative ideas rather than the technological know-how. These people would give their ideas about the robots and even ask questions which would cause the builders to rethink their designs to make it more efficient. While we had a robotics program with VEX IQ robots, we also had drones. Other parts of our robotics program were the coders and drivers of the drones. They also contributed to the robots as well. Some of the pilots were also robot drivers and builders, meaning that they could take what they knew about both drones and robots, to improve the robot.



Our team becomes very inclusive when the drivers and builders interact, also allowing for different perspectives to come into play. This is because the robot may have a complex form or



way to work and it is up to the builders to explain the robot to the drivers. When this happens, the two roles will naturally start to form possible strategies with knowledge from the driver and the builders. Drivers aren't the only ones that work well with the builders, the students that code also use input from the builders. The coders and builders must also interact for the autonomous challenges involving the robots. When they come together, they



must discuss the works and features of the robot. After they must discuss plausible strategies to gain the greatest of points. These interactions with different

perspectives allow for a more inclusive environment and an overall better robot. With these different perspectives, people, and roles, our robotics team is given the chance to better improve our relationships and cooperation with our teammates also giving our team a better group chemistry.

While there are many people in the STEM field, they are the many people I didn't know about. When I was in elementary school, students didn't have a STEM or STEAM or environment and because of this we didn't know about the people that work in those environments. When I came to middle school, I had access to a more STEM inclusive environment. At my middle school, we had a variety of classes as well as extracurricular activities. One of the STEM extracurricular activities were robotics. As time had passed, I had learned who my STEM role model was and it was my robotics instructor, Libni Simons. The reason I chose him as my role model was because I noticed the way he encouraged other students to do better and he was never prejudice to any of us. He was always willing to offer help to any of the students in the club whether we did robots or drones. At competitions, he is always pushing us to do our best and encourage as many of us to go and participate since we switched drivers sometimes. He inspires me to have a more inclusive program because he always encourages students to do well and for us to work as a team. If the students are all encouraging each other and pushing each other for success that will reward the whole team's efforts, that would not only make for a more inclusive program, but that will also increase the bond between students and increase the team's chemistry. With these benefits in mind, this should push anyone to make their robotics team a more inclusive environment, not only for them but for their team.

Joining the robotics team has not only given me a chance to experience a STEM environment but is also given me a chance to meet new and different kinds of people with different kinds of experience. It has given me the chance to witness a very inclusive club with all sorts of roles that you can partake in. I like to think my club is "Girl Powered" and not because girls are the main of our priorities, but because we have a place where everyone is welcomed and valued and that should be a feeling that anyone gets when they join their STEM programs.

## **Credits**

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Title of Submission: *My Robotics Journey*