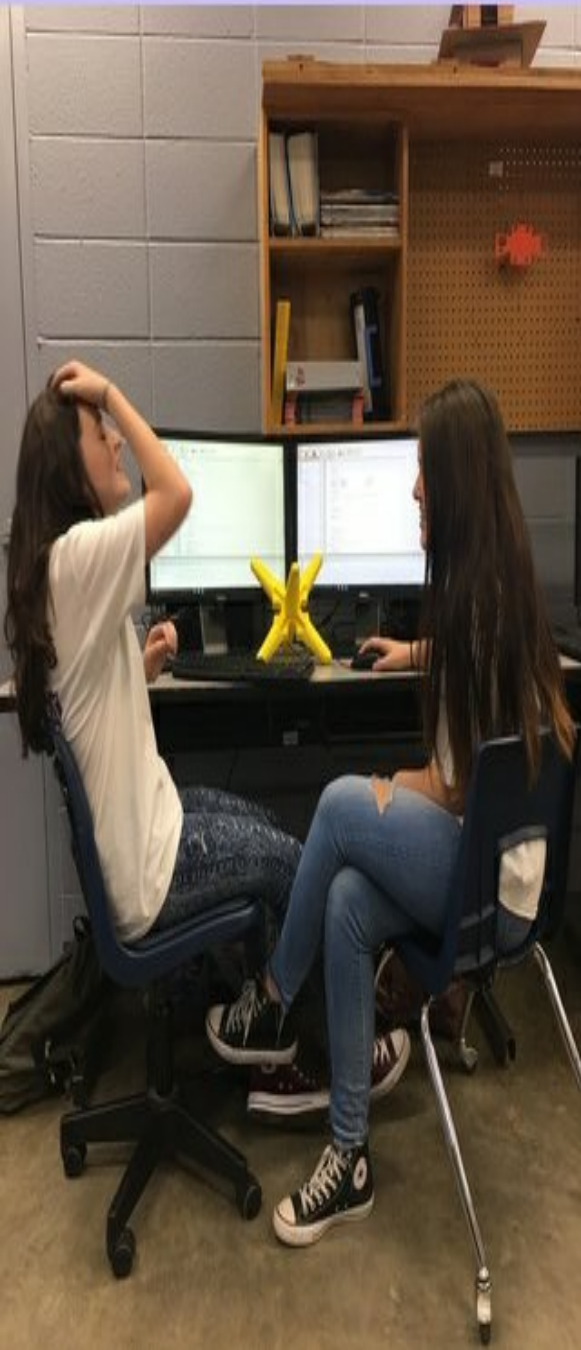


Faith, Trust, and Programming Dust

Written by Hope Coffman and Alison
Mashburn



Beginning of 1338B

It was the beginning of the year, and we were sitting in Mr. Price's room listening to the job opportunities of the robotics team. As he explained the programming job, we both perked up with interest. We glanced at each other, knowing that this was what we wanted to do.

After he explained the possible jobs, he set out two pieces of paper. At the top it said "1338G" and "1338B". Knowing the people we wanted to work with, we signed our names under 1338B, and our jobs as programmers.

This is where our year began.

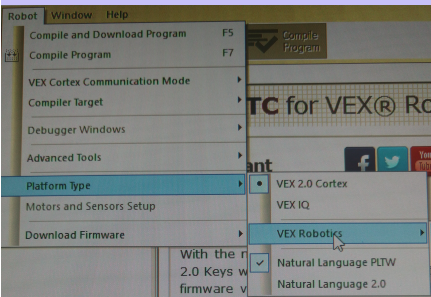


Don't You Wish Your Girlfriend Could Program Like Me

The first day learning how to program is the hardest. You have no idea of what this new language is. As Mr. Price taught us about the doors and basics of our soon-to-be second language, it started to click. The opened and closed doors of brackets all fell in place.

We could start, run, and stop motors like it was second nature. The lines of code all made sense to us. We never knew how much we would enjoy programming. Programming controllers or making autonomous programs were just something that made us feel complete. We had found our new world. The world of robotics.

After we had learned all the tricks needed, we set out on our own without help from Mr. Price. The work became all on us, and we realized our importance to the team.

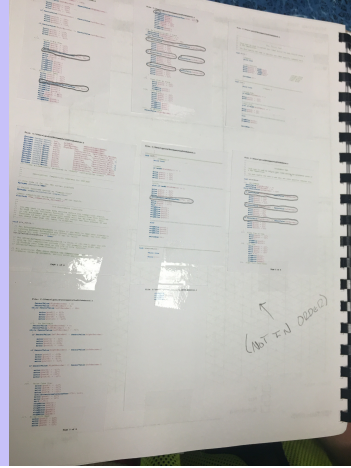


Struggles of Our Job

Even though programming clicked for us, there were still challenges and obstacles we had to overcome. We were faced not only with technical issues, but we also faced discrimination. On the team, we weren't considered to be the best at what we do, and we weren't. We struggled with autonomous. The robot would get out of wack, causing it to miss what it was supposed to hit.

We tried and tried to perfect our programming, but it wasn't just us. The design of the robot caused it to turn so much, and it differed each time. Setting up the robot was a challenge, because each time it was a different set up. It wasn't the design of the robot that was blamed, we were blamed.

Not to mention trying to program to where the autonomous wouldn't fail no matter it's set up was our huge challenge. Trying to beat something that's not consistent is nearly impossible, and with this being our first programming job we weren't sure how to beat it.

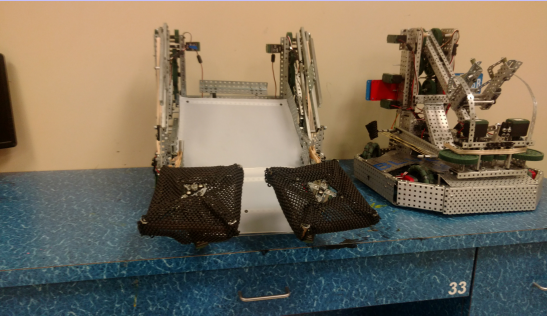


First Failure

After our first competition, we realized that our robot was not capable of competing with the other bots. Our's couldn't stand alone, it was inaccurate, and wasn't consistent. We had to change it.

We saw the dominating robot there, and decided one similar to it would be best to have a chance at going to state and ultimately world's. We began redesigning our robot and built a whole new one, all based on a picture. The programming was difficult, it had 12 motors and multiple sensors. It was almost too much at one time.

Even though it was a difficult program, the autonomous was way easier to set up, with nothing getting out of place when started. It wouldn't get off track and was very consistent. We had made a robot that could take us to where we wanted to be, world's. We were able to practice and fix anything needed because we knew it was programming, not set up or just an off run. This time our programming didn't lead to the unneeded criticism that the group usually threw at us.



New Designed Robot

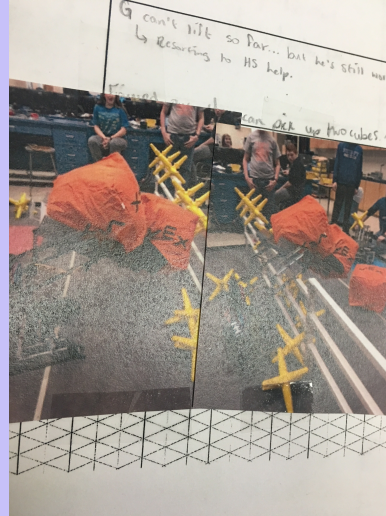
Challenges of the Success

Even though our new robot was a success, we had a new challenge ahead; skills. We had to now program the robot to drive itself for a minute, trying to score as many points as possible. With our first programming for skills, we got 20. This wasn't enough for anyone on our team.

"The high school had a higher skills", "We need to beat high school", and "We need at least 28 points" were the phrases that seemed to come infinitely our way. We were pressured and pressured to perfect a programming when we were imperfect programmers. Our best wasn't perfect. Our best was the 27 points we could get on a good day, it wasn't always perfect.

We were pressured to be perfect every time, and it didn't help us. Even the ones who we considered our close friends piled on the pressure. We were almost at the point where we wanted to cry and give up. We knew better than that, though. We stuck together. We were each other's reason to stay and program because our friendship was going to stick out through the troubles.

Needless to say, skills was almost the breaking point of our time in robotics. But the pressure turned us to diamonds, and we were two diamonds that were incapable of being pulled down.



State Competition

Our robot took us to the gateway to worlds, state. We knew that our programming needed major upgrading, from autonomous to skills. We needed to plan out what we wanted and how we wanted it. Skills needed to be as perfect as it could possibly be. Autonomous NEEDED to be perfect every time, because that could be the determining factor that decided whether we lost or we won.

This led to, you guessed it. Stress. Stress caused us to lose our focus. We weren't worried about fixing what was wrong, as much as making it perfect. It could just be how the setup was a few degrees off, but we blamed it on the programming. It was bad, and we had to get back on focus.

Finally, we took charge and started to relax a little more. Everything had been so stressful we hadn't been enjoying what we were doing. We began to start loving what code came from our fingers, started to love every imperfect movement because it only meant we can improve.

With our loving of our job again, we began to improve our programming. The autonomous started to be consistent, WE were happy with our skills. We did the best we could, and once people realized we were happy with what we did, they started to accept it as well. It was our best, and we can't do any better than that.

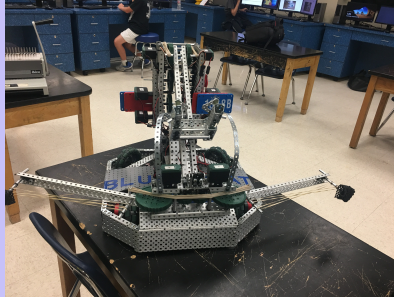
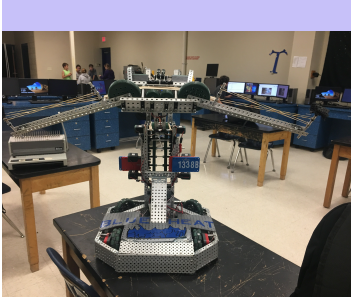


Beginning of Worlds

After state, we started to research. Who had the highest skills score ? What was the design of their robot ? How could we improve it to make it more compatible with our drivers ? These were all questions we had to find answers to.

We started with finding this highest scoring robot. It had a dragon drive, which was a tank drive for the front two wheels and an x-drive for the back. It had a claw and tossed over its back. This robot also had 12 motors, encoders, and potentiometers to program. It was by far our most difficult program. Everyday we went in and programmed. We started with the remotes and how the drivers wanted them. Then we started autonomous, trying to get as many points as possible. Autonomous was a struggle. The alignment and consistency of it took us longer than expected.

Next thing you know, worlds is a 2 months away and we haven't typed one line of code for skills. We then had to focus on skills, and accept our autonomous even though it wasn't perfect. Skills wasn't perfect either, it was a struggle to find your place in the hundreds of lines of code. We eventually finished it, but it wasn't consistent, but as long as it was set up correctly it would get us where it needed to be.



Our Time at Worlds

Worlds was an adventure. A crazy, chaotic, adventure. We had our rushed skills, autonomous less than perfect, and our drivers weren't accustomed to driving this new robot. Our first experience at worlds wasn't the best. The programming we did wasn't as good as it needed to be. Skills messed up and we got fifteen, when we usually got at least in our thirties, neither of which could have competed with the other teams there. Our robot just wasn't compatible to win at worlds. Autonomous was iffy, we'd tip over due to the design of the robot, and being able to hang didn't help us at all.

Worlds was an adventure. It wasn't the best first round for us, we were stressed more than should be capable for two girls. Although, we had more fun than expressed. We met people from all over the world, and even made a friend from Tennessee. We had more fun than anything, and learned from all of our mistakes.



Hope's Journey of the Year

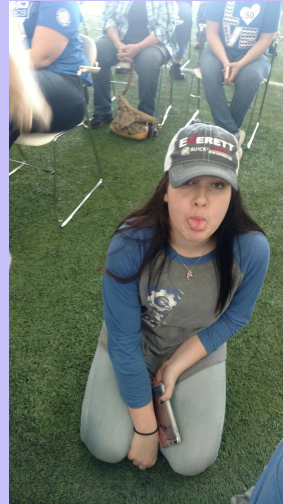
The stress was hard to bear at times, but we made it through. I personally feel that our friendship is what kept us in. Being discriminated was hard. We were told that we should not get days to remind us that being a girl in the STEM world was hard, but girls could do anything. The ones who are the reason for us getting this day thought we shouldn't be able to be reminded. Girls are able to do anything that a guy can do, girls are equal to guys just like guys are equal to girls.

The year brought a lot of discrimination, but a lot of fun too. The fun and friendship gained through this adventure in robotics was way worth the pain we went through to be there. We got to miss school to go to Kentucky, we met people from around the world. It was amazing. I wouldn't trade this journey for anything.

Now we're on a team of all girls. We won't discriminate on each other just for being us. We're all supportive of each other. We understand each other's background and here to help each other, not tear each other down.

We are now on Athena. Athena was the goddess of wisdom and battle, that is what our team is now about.

- Hope

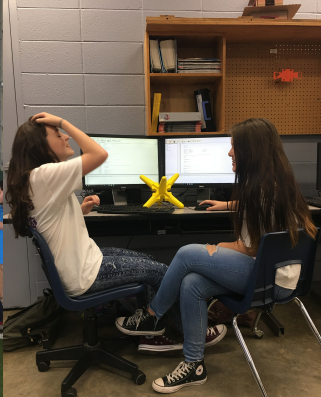


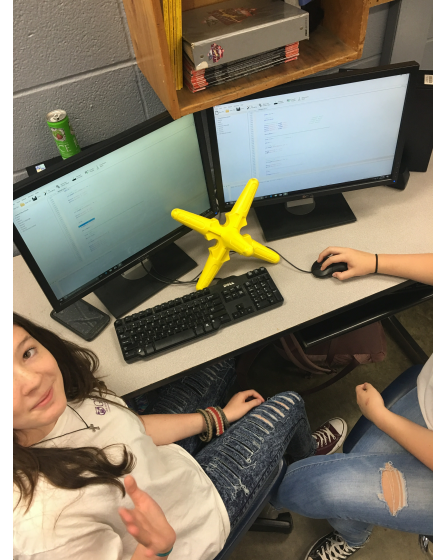
Ali's Journey of the Year

Was the journey throughout the year hard? Yes. Sometimes even almost unbearable, but we made it through together. The only thing that kept me going at times was having Hope there with me through it all. We had each other and that is how we made it to world's.

The discrimination never stopped and it is still going, but we have learned that we can do it no matter what other people say. We stayed positive and had each other's backs and that is how we made it through the tough times.







Conclusion Page

The year was a crazy journey. There was a lot of ups and downs. We found our friendship there, and we also found our passion there. Programming was what made us happy to show up to school everyday. We looked forward to robotics, even though we were constantly dealing with hate and discrimination. Robotics was still an exciting and amazing journey, and neither of us would trade it for the world.

We're doing it all over again now, but without the discrimination. We are on an all girls team, able to enjoy what we do with others who won't judge us for being of another gender. We are able to enjoy and perfect our jobs a lot easier than last year, with hatred spewing out of the mouths of those we called our friends. Now we just hear constructive criticism, nothing that offends us but makes us better. It is way easier to deal with the pressures of the year without the pressure of pleasing others.

- Hope and Ali

Hope Coffman

Alison Mashburn