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An Introduction on Girl Power

My story, the camaraderie, and the impact

By Sophia Zhang

At twelve years old, I decided I wanted to go into STEM. I signed up for a computer science elective in seventh grade, excited to learn to program and explore the world of digital endless possibilities; I was the only girl in my whole grade in that class.

In eighth grade, I signed up for STEAM instead, hoping there would be a more balanced gender distribution. Luckily, there was a grand total of five girls in the class of thirty-seven, a small number, but better than one. I loved the





class, and I had the blessing of being taught by a wonderful teacher. Then, the robotics unit rolled around. We worked with Vex IQ and I loved it. The teacher passed around the sign-up sheet for the school's robotics team, and I eagerly jumped at the opportunity.



The next day, it was announced that the team was canceled. I mean, it made sense- after all, why would you expend resources and money for the single person who signed up?

By the way, in case you didn't realize, that single person was me.

Things are different now. The sound of clashing metal and whirring instruments is a familiar, almost comforting sound. For one, I'm not the only member, and I'm not the only girl by far. To say it was a shock would be an understatement. We filed into an empty classroom, the three of us forming a measly, messy team, and covered the whiteboards wall to wall with design sketches for the upcoming season.

Where we lacked in experience we made up for in enthusiasm. When I stepped into that doorway, I stepped into a different world. To see the backpacks strewn across table tops, to hear the chattering coming from the room next door, to hear the



cheers from the field room next door, where another team had successfully ran their auton for the first time- I say with certainty that it's like a family.

There's an indescribable feeling of joy of having people who share the same interests as you, who are willing to spend precious hours on your robot, of not being the



only one anymore. This is what I mean, when I say 'girl power'. It's the feeling of knowing you're not alone, knowing that you can relate to the people around you. It's the feeling of contributing to something bigger, of creating something from nothing.It's

hammering in the fact that we belong in STEM too, that we might be small and wrong and crazy but we're trying, and one day it's going to pay off. My team has its highs and lows, but we know how to bounce back. and



but we know how to bounce back, and our progress is incredibly satisfying. Robotics has taught us so much, from time management to goal setting, and now it's given me a group of friends I can be comfortable with. We all come from different backgrounds, and as an all women-of-color team, I'd say we provide a fairly unique perspective. Through our discussions, I learn to see a different outlook on the same problem. I learn to compromise, I learn to step up, but I also learn to step down. When something doesn't work out, we build on each other's voices and create endless other options. Working together enhances our individual ability to succeed by making us adapt to situations we aren't comfortable with. The engineering process also helps us solve problems outside of robotics, and well, to us at least, I'd say robotics has definitely made a huge impact on our lives.

Now, I'm not saying that this doesn't apply to my fellow male club members; there are plenty who's skills I respect and admire. The point of 'girl power' isn't bashing guys. It's also not saying that girls are better. It's simply saying that we matter. We're here. It's giving all of the other lonely girls a home, a sign that with effort you can make it, that someday you'll find your people, and you won't be alone.







Now for... A STEM Girl Moment!

A true pioneer for women entering STEM and a mathematical genius, Katherine Johnson (1918-2020) was an African American woman who contributed greatly to NASA's efforts in sending astronauts to space in 1959.

Working during the late 50s, Johnson undoubtedly faced



"You will do better if you cause other people to want to learn." -Katherine Johnson

discrimination in her career not only as a **-Katherine John** woman but also as a woman of color. Johnson's incredible intellect earned her many opportunities to work in her



field of passion. However, it was her tenacious drive and resilient nature that powered her path to success. Johnson models what it means to unapologetically take up space-that is, to not rely on the validation of others to perform at the best of your



abilities, and to not let anyone hold you back from unearthing your true potential. Taking up space means learning to be comfortable with providing your opinion (even when it isn't welcome) and affirming

that your presence in the room is just as valid as everyone else's. It is much easier said than done, especially when you can walk into a robotics room and *see* the lack of diversity both in gender and ethnicity. However, instead of feeling a sense of displacement as a minority in the male-dominated field, we can find comfort in knowing that because of perseverant women like Katherine Johnson, we are not alone and will always have a role model. Her success inspires us to realize that our chances of success are never compromised



by our gender identity, and as she once affirmed, women are every bit as capable as men in all fields.



See our... Visions for the Future!

A 2019 study in the Journal of Information Technology Education: Research revealed that only 31% of the total students in VEX robotics are female. This statistic begs the question: How can VEX Robotics be girl-powered when there are not enough girls to power it?

Why Should We Further Encourage Girls to Join VEX?

 VEX is one of the best STEM programs for K-12 students.. It allows students to gain the experience and knowledge they need to confidently enter a STEM field.
 So, if we support girls in VEX, we also increase the possibility of decreasing the gender disparity in STEM careers.





Female mentors play an important role in keeping female students in STEM (Texas A&M University). Female mentors play an undeniable role in providing comfortable, encouraging

environments for female students.

• Vex is fun! There is nothing as satisfying as building an awesome robot and competing with other teams. If we can provide this experience for more girls, then why not?

How Do We Make Our Space More Diverse?

 We recruit. We are incredibly lucky to have amazing, supportive teammates and dedicated mentors that helped us begin our VEX journey.
 Whenever possible (at club fairs and similar events), we try to extend that same hand to other young women



who want to join VEX.

We share our
 experiences. All
 three of us have
 the unique ability
 to share both our

experiences as girls in VEX and as newcomers to the competitive VEX world. By telling others our stories (haphazardly sawing through C-channels in bath tubs, first learning how to use a sander), we try to get other girls excited and interested in robotics.

 We encourage each other to take on various responsibilities. In addition to diversity of background, we value diversity of opinion. We all participate in every role (building, programming, and driving), knowing that all of our different perspectives make for a better robot.



Meet The Team!









Natalie



Valeria



Sophia



Jingles (our robot)

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