BRIANA BERGER | HEATHER DIXON | CINDY JIE

THEIR BOT,

ADA

A NOVEL BY TEAM 13729A

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Chapter 1:

Who Are We? How Did We Find Robotics?

Each of us are female students from F.W. Buchholz High School in Gainesville, FL where we compete on the team 13729A. We each slowly fell in love with robotics differently. Briana saw robotics as the future and as a way to make an impact on a person's life. Heather saw robotics as a way to express her love for the sciences. Cindy saw robotics as a way to mix her passions in computer science and physics to create something that would change the world. Each of us came together in unity amongst other teams filled with boys. We used our sisterhood to empower each other to continue our passion in robotics.

To give you background on each of us, Briana is a senior and will be attending Stanford University next fall majoring in Computer Science. She is the founder and CEO of coderGirls, an

international nonprofit organization to educate and empower female K-12 students in computer science. As the founder and CEO, she has implemented chapters and curriculum with 36 chapters, 85 Girl Scout councils, and over 350 schools to impact over 500,000 girls in over 6 countries, such as Bangladesh, Nepal, Ukraine, Philippines, etc.

Cindy is a junior and has had much success playing chess for Team USA at World Youth Chess Championships. She is a five-time qualifier, and from 2014-16 was a member of Team USA, and in 2016 was the official Team USA member for the Girls Under 16 Section. Besides her passion for STEM and chess, she fell in love with dance at the age of four. She was even eligible to qualify for the United States Dance Team to travel to Europe to compete in the World Championship in 2012.

Heather is a sophomore and self-classifies as a nerd because of her love for books, video games, and learning. She aims to get a PhD in Computer Science and to create the future of technology through

research and innovation. At school, she is a member of the school's Future Business Leaders of America chapter (FBLA), where she is able to develop her financial and entrepreneurial skills that will help her in her career goals.

To understand why each girl has become passionate about robotics, it is best to hear it in their own words. For Briana, she recounts her first experiences in tech and how she became encouraged in the field with the following quotation insert.

"Growing up, I never imagined becoming a computer scientist let alone a CEO. I thought of becoming a writer when I was obsessed with the Harry Potter series. I thought of becoming an

architect when I would build homes for my dolls. My family has no roots in computer science or business. I somehow discovered the world of computer science by my boundless curiosity.


I knew I wanted to pursue coding as a career, but I felt isolated at times. The constant stares and whispers only made me feel more alone, and I was discouraged. I felt as if I didn't belong in a world that I loved. So, I took initiative. I had to research countless tutorials and books to learn. Then, I joined my school's robotics team, and I remember anxiously waiting for our first meeting, and all I could think was: will any girls come? Thankfully, girls came, and the sisterhood that developed made me realize that I wasn't alone, and I began to feel empowered, in not only computer science, but also the world of robotics. "

For Cindy, her first experiences in robotics started of this year because she began to see robotics as a place to mix her passions of physics and technology. She looks back upon her decision to join our robotics team with the following quotation insert.

"I was first introduced into the world of robotics by Briana. At the time, Briana's VEX Robotics team was missing a Lead Engineer, and Briana though that his role would perfectly suit me. Why you might ask? Well, that is because I am a fanatic for physics and creation, and robotics is the place for me to stretch my wings and fly. Being able to tinker with parts and building an amazing bot gives me the greatest sense of accomplishment. Taking one screw, one bolt, one piece of metal at a time, I slowly see my robot come to life. I felt like I was on Cloud 9. When I found out my robotics team was one of only girls, I finally felt like I belonged, and the girl only team further empowered me to pursue STEM."
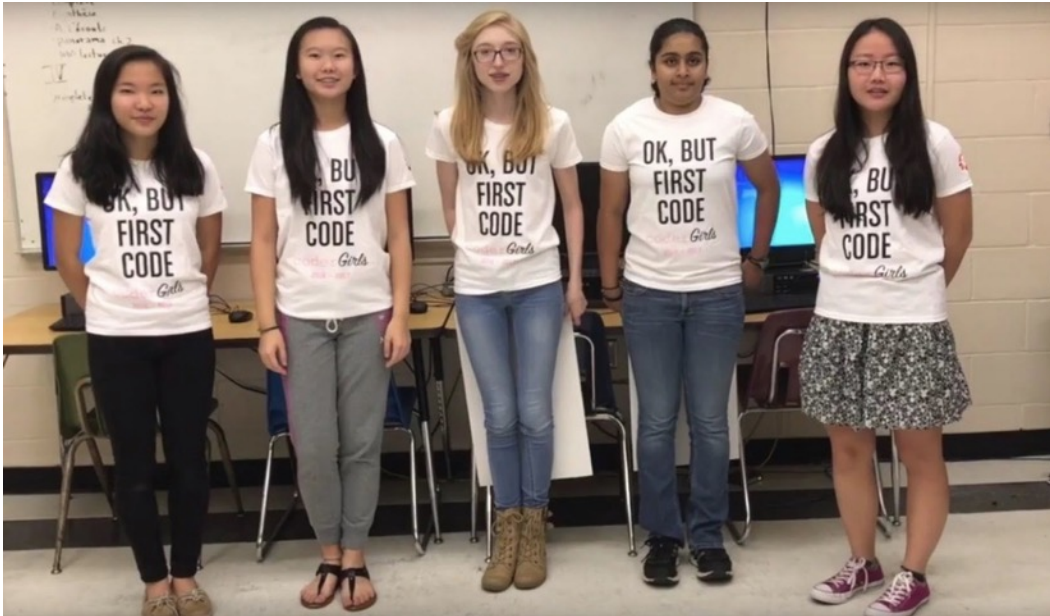
For Heather, she started robotics last year, and at first like many other girls, she had to face the gender gap. To get a better idea of what it was like through Heather's eyes, she recounts her experience in the following quotation insert.

"I discovered the team from my female science teacher in 9th grade. She invited me to the first meeting, and I have to admit, I was very nervous. Walking into the room, I noticed right away that the club room was dominated by boys. Scanning over the room, I saw very few girls. However, I didn't feel discouraged. To be honest, it

inspired me. The few girls and I in the club formed a team, an alliance, to distinguish ourselves from the sea of boys. Even in our first ever competition, we got all the way to the finals, and even though we lost, the near victory was enough to boost my confidence. We were the only all girls' team at the competition, and we beat nearly everyone."

Chapter 2:

Why is the Gender Gap Significant? What does Girl Powered Mean to Our Team?

Gender inequality in technology sabotages women's contributions and discourages females from STEM. According to the National Center for Education Statistics, in the 1984-1985 academic year women accounted for nearly 37% of all computer science undergraduate

students. Yet, the number quickly dropped as the use of home computers became more common. In movies, men were displayed as programmers and were labeled as "nerdy." In addition, the stereotype still standsFor instance, in the Journal of Experimental Child Psychology, they assessed 6-year-old children's stereotypes about STEM fields and tested an intervention to develop

girls' STEM motivation despite these stereotypes. First-grade children held stereotypes that boys were better than girls at robotics and programming. Yet, when the girls experienced programming, their interest and confidence in those subjects rose.

The issue is incredibly imperative because half of the world's population will not be represented in the future's technologies. Girls and women in the U.S. are users of technology, but they are significantly underrepresented in coding. For example, due to the lack of women,

LinkedIn only autocorrected for male names and not female ones. It demonstrates that due to the technology industry lacking women, they forget about females and their needs. To ensure an equal and representative future, we need the other half of the world's population in STEM: women.

The lack of women in STEM didn't stop our team. We saw it as a catalyst for us to make a change in the STEM community. As cliche as it sounds, we

saw ourselves as Girl Powered. We saw the phrase as empowerment. It encouraged us to reach for the stars, despite what society told us. The phrase allowed us to keep our team going when our coach left our team. The phrase kept us going in times of self-doubt and sexism. It had us

realize that we were good enough to be in robotics. The term taught us

to be brave and to always persist.

Chapter 3:
Our STEM Role Model

When we first formed our team, we were challenged with a question: "What do you want to name your bot?" Within moments, we came up with the name "Ada." Every single one of us lit up at the name because it stood for Ada Lovelace, the first female programmer.
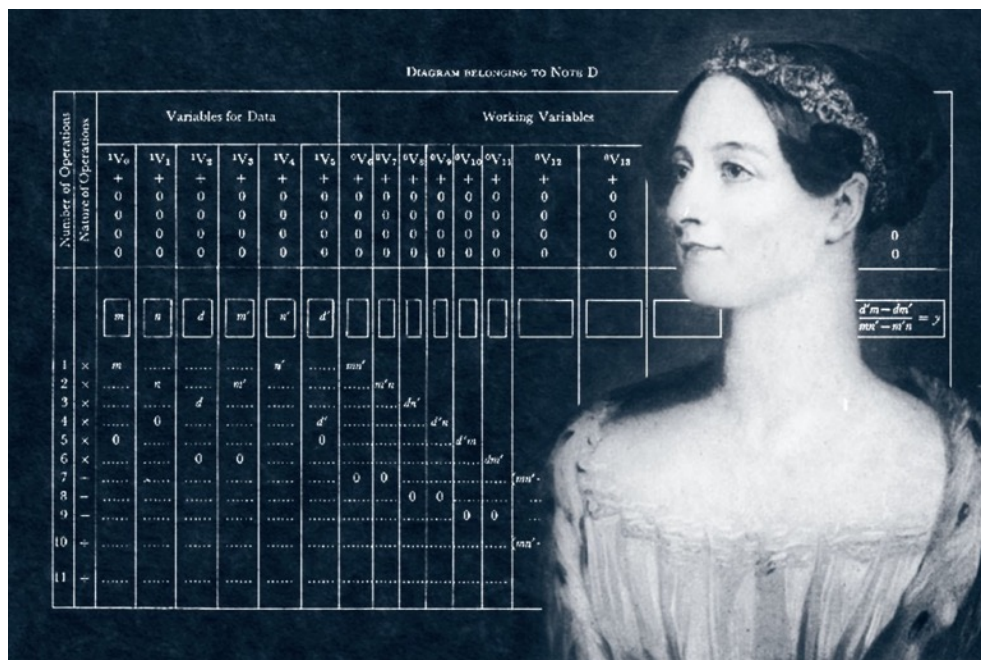
The name became a symbol for who we were: a group of girls trying to trail blaze a way for other girls to join robotics. Ada showed us that despite living in the 1800s, she was able to conquer so much. She lived in a time where women were solely expected to stay at home and take care of the children. She had to go against an entire society's worth of prejudice. She stands as a role model for each of us because we aspire to be as brave, as determined, and as Girl Powered as she was in her goals.