TIPPING THE SCALES OF GENDER INEQUALITY

Chiara Chen, Priscilla Wong, Emily Hsu, Jessica Yang

Team Number: 16099A

Location: 37-02 Main St, Flushing, NY 11354

OUR TEAM

EVERY MEMBER HAS A ROLE ON OUR TEAM, FROM DESIGNING THE ROBOT TO PROGRAMMING. WE RESPECT THE STRENGTHS AND WEAKNESSES OF OUR MEMBERS, ENCOURAGING THEM TO DO THEIR BEST AT WHAT THEY EXCEL AT WHILE ALLOWING THEM TO IMPROVE THROUGH EXPERIENCE AND LEARNING FROM ONE ANOTHER. BY DISREGARDING GENDER STEREOTYPES, WE CREATE A SAFE AND COMFORTABLE ENVIRONMENT FOR EVERYONE TO GAIN EXPERIENCE IN THE ENGINEERING FIELD.

ABOUT US (BOYS)

ISSAC

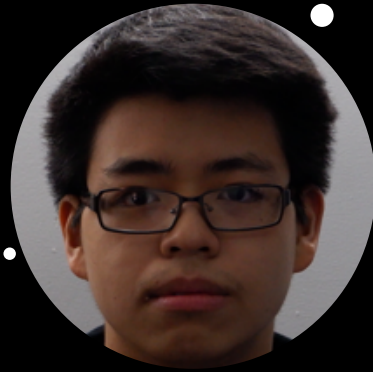Captain and proficient driver!

ERIC C

Jack-of-all-trades!

BRANDON

Attentive builder and writer!

WILLIAM

Drive coach, who excels in CAD and robot design!

ERIC H

Ambitious programmer and confident constructor!
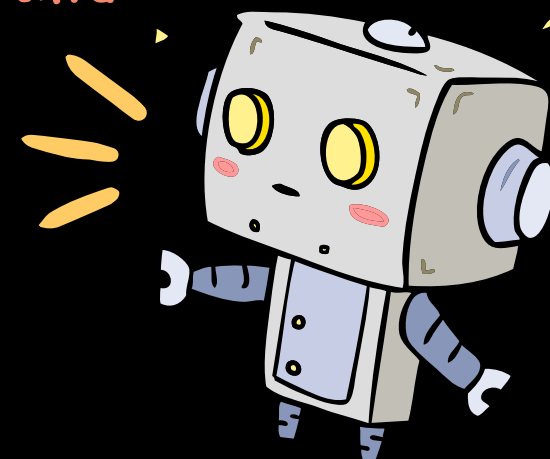
TONY

Physical and digital engineering specialist!

IVAN

Game strategist and the primary competition scouter!
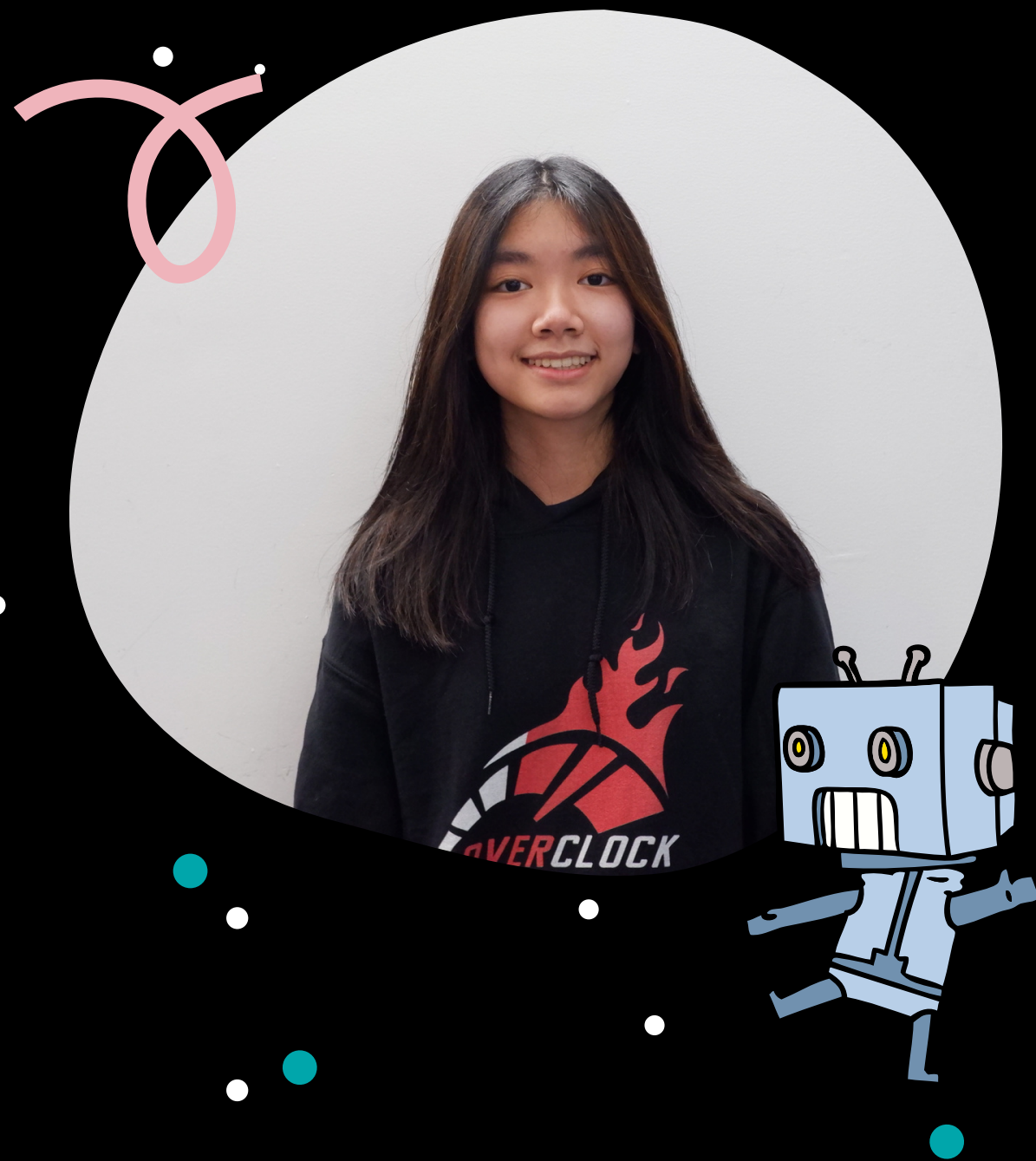
JUSTIN

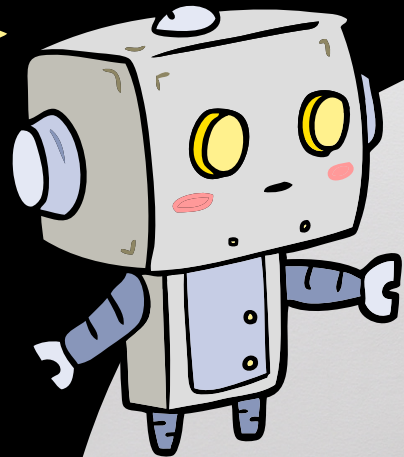Passionate designer and brainstormer!

CHIARA CHEN

CHIARA IS A FRESHMAN WITH TWO YEARS OF VEX EXPERIENCE. SHE IS THE SECRETARY OF THE TEAM, WHO ASSIGNS TASKS TO ALL THE TEAM MEMBERS AND OVERSEES THE QUALITY OF THE ENGINEERING NOTEBOOK. ADDITIONALLY, SHE IS INTERESTED IN PROGRAMMING AND HAS CODED A FEW AUTONOMOUS PATHS UNDER PRISCILLA'S GUIDANCE.

PRISCILLA WONG

PRISCILLA IS A JUNIOR WITH THREE YEARS OF VEX EXPERIENCE. SHE IS A COACH ON THE DRIVE TEAM, A BUILDER, A DESIGNER, AND BOTH THE CHIEF EXECUTIVE PROGRAMMER OF THE TEAM AS WELL AS THE VICE CAPTAIN OF OUR TEAM. SHE IS IN CHARGE OF PROGRAMMING THE SKILLS AUTONOMOUS AND EDUCATING LESS EXPERIENCED PROGRAMMERS ON THE COMPLEX ASPECTS OF VEX C++, SUCH AS ODOMETRY AND PID.
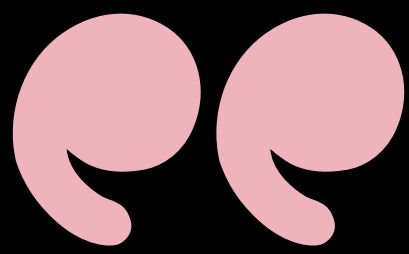
EMILY HSU

EMILY IS A JUNIOR WITH TWO YEARS OF VEX EXPERIENCE. SHE IS THE CHIEF EXECUTIVE SECRETARY, CONSTANTLY IMPROVING NOTEBOOK QUALITY IN THE OVERCLOCK ORGANIZATION AND ENSURING THAT ALL NOTEBOOKS ARE UP TO DATE. THIS YEAR, SHE IS ALSO CHALLENGING HERSELF BY PROGRAMMING A MATCH AUTONOMOUS PATH FOR OUR ROBOT.
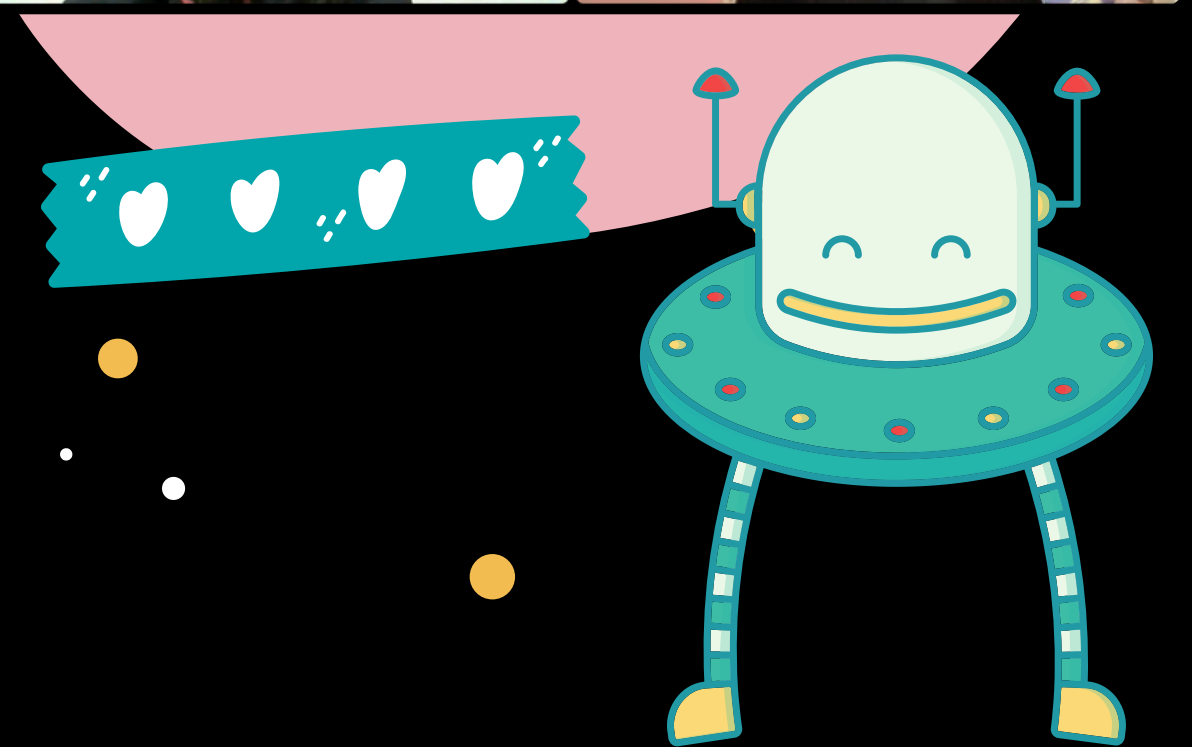
JESSICA YANG

JESSICA IS A JUNIOR, AND THIS IS HER FIRST YEAR IN ROBOTICS. THIS YEAR, SHE IS BECOMING MORE EXPERIENCED IN ENGINEERING WITH THE HELP OF VETERAN MEMBERS. SHE EXPRESSES HER CREATIVITY BY ELECTRONICALLY DESIGNING THE NOTEBOOK COVERS AND DIVIDERS AND LEARNING VEX C++.
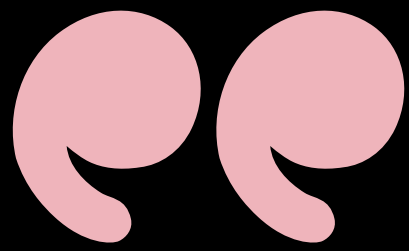
WHAT DOES "GIRL POWERED" MEAN?

Girl-powered is about defying gender stereotypes in an environment that is predominantly male. The Overclock organization strives to create an inclusive environment where everyone, regardless of their gender, gets an equal opportunity to learn and participate in STEM. More and more girls try out for the team each year through the summer VEX Robotics program, which provides experience in CAD development, mechanical engineering, and programming. Collaboration is encouraged in several group projects, allowing all students to understand what it feels like to be on a robotics team.
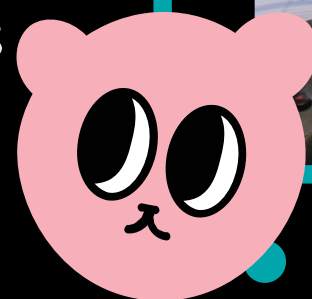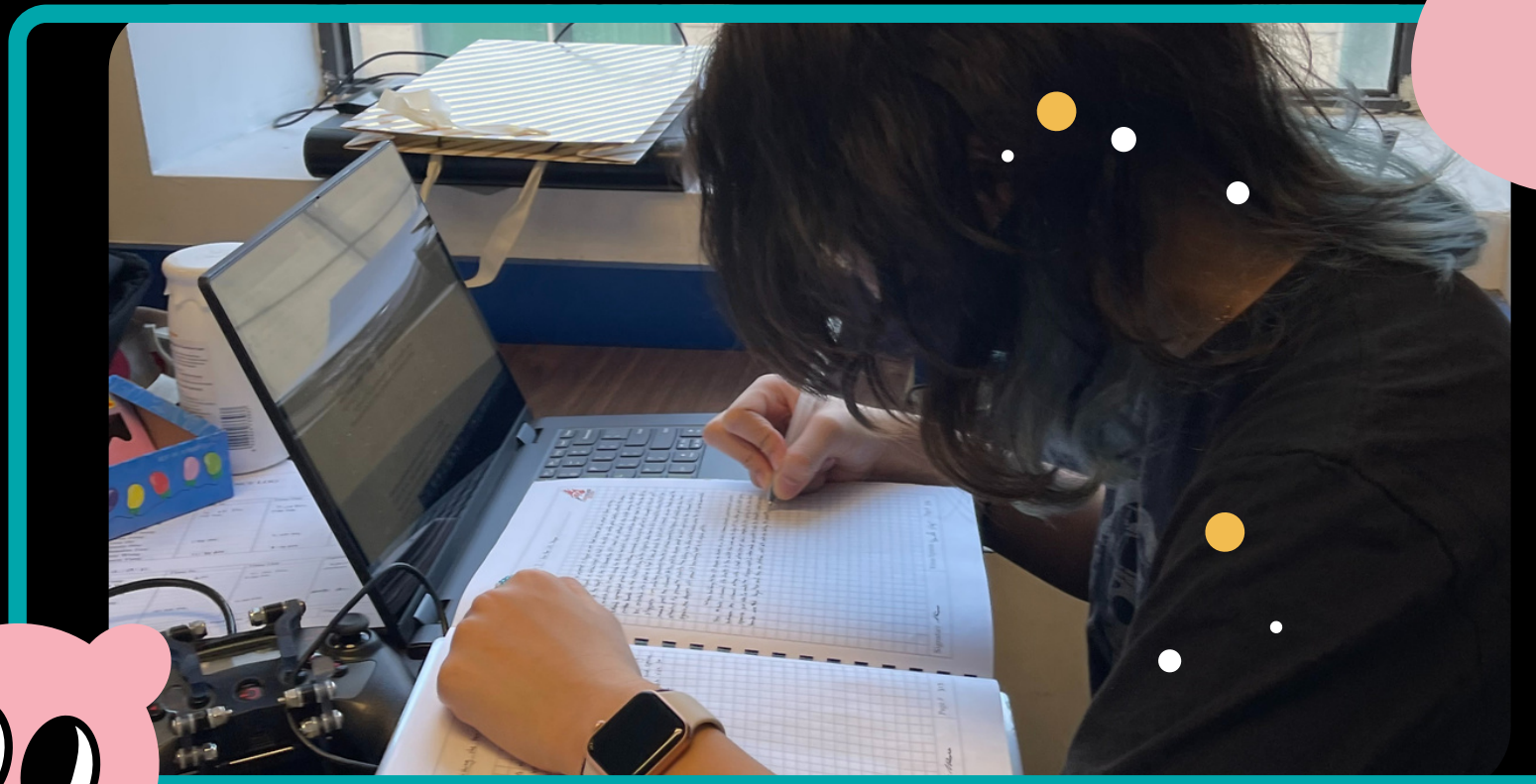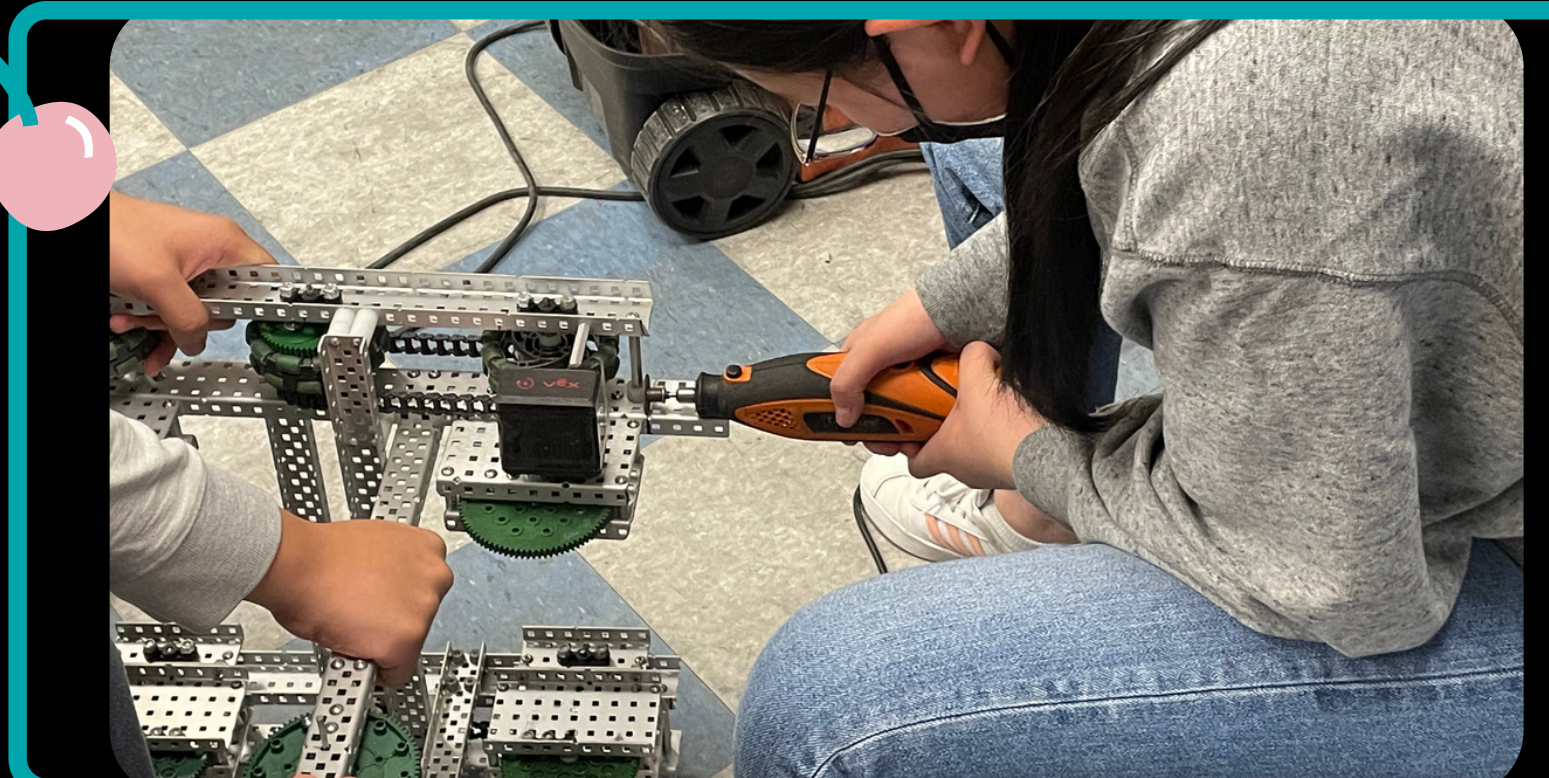
WHAT DOES "GIRL POWERED" MEAN?

Girl-powered is also about stepping out of your comfort zone and confronting fears. During the start of the season, we had little experience and were hesitant to work on the robot. Through practice, we became more confident in ourselves, despite making mistakes along the way. Now, we frequently contribute to the construction and maintenance of the robots. Regarding programming, many of us were new to programming and were scared to use our autonomous paths at the competition. However, as we continued to tune our code with the help of Priscilla, we became more assured in our programming skills while improving our coding expertise.

TEAMWORK!

As a team, we strive to become better by working with each other. During meetings, we actively engage in educational discussions to benefit our team. We oversee the robot's construction, the progress of the notebook, and the coding of several autonomous paths for both matches and skills. For example, Priscilla has coded this season's skills path, scoring 164 points at the WAVE @ WPI signature event. Emily and Chiara have coded their 15-second autonomous paths, helping us win matches at competitions.

GIRL POWER!!!

Priscilla tuning the skills autonomous at the WPI tournament

Chiara using the saw to cut a c-channel for the robot

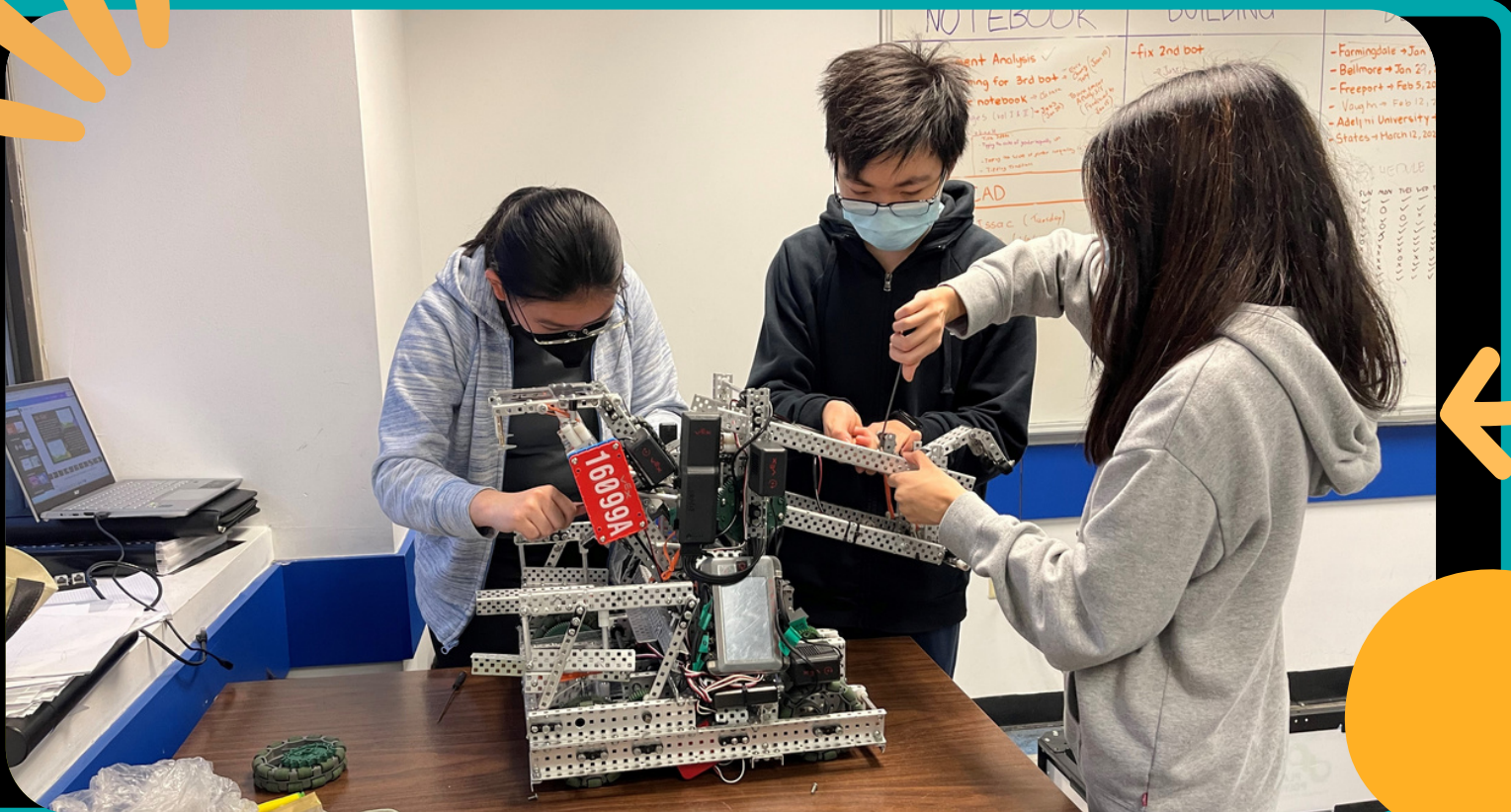Jessica constructing a part of the drivetrain

Priscilla grinding off excess debris from a c-channel

THE TEAM

MANY ASPECTS OF ROBOTICS INVOLVE BRAINSTORMING AND DESIGN, INCLUDING THE ROBOT'S CONSTRUCTION. BY HAVING A DIVERSE TEAM AND RESPECTING EVERYONE'S OPINION, WE CAN COMPILE VARIOUS IDEAS THAT HELP US FIGURE OUT SOLUTIONS TO OUR PROBLEMS. FOR INSTANCE, EACH TEAM MEMBER DESIGNED THEIR MATCH AUTONOMOUS PATH.

OUR COMPATIBLE CHEMISTRY ALLOWS US TO EXPRESS OUR PERSONALITIES WHILE WORKING ON ROBOTICS. IT ENABLES US TO SUCCEED IN MANY ASPECTS OF VEX THAT REQUIRE COLLABORATION AND THINKING. IN ADDITION, MEMBERS GET ALONG WITH ONE ANOTHER AND CREATE A FRIENDLY AND COMFORTABLE ENVIRONMENT, EVEN FOR NEW MEMBERS.

XIA PEISU

MANY WOMEN HAVE ACTED AS PIONEERS IN THE ENGINEERING FIELD THROUGHOUT HISTORYS. ONE OF THE MOST INSPIRATIONAL HAS TO BE XIA PEISU, AN ENGINEER WHO BUILT THE FIRST ELECTRONIC DIGITAL COMPUTER IN CHINA. PRIOR TO XIA'S INNOVATION, CHINA HAD BEEN FALLING BEHIND TECHNOLOGICALLY DUE TO MANY YEARS OF WAR, ESPECIALLY AFTER THE SOVIET UNION WITHDREW AID FROM THE COUNTRY. THEN, IN APRIL 1960, CHINA'S FIRST HOME-GROWN ELECTRONIC DIGITAL GENERAL-PURPOSE COMPUTER CALLED THE MODEL 107, WENT LIVE THANKS TO ENGINEER AND DESIGNER XIA. FOLLOWING THIS, SHE TAUGHT THE FIRST COMPUTER THEORY CLASS IN CHINA, HELPING SHAPE THE FIELD AND INDUSTRY OF COMPUTER SCIENCE TO MAKE CHINA A WORLD LEADER IN THE FIELD. HER INNOVATION AND DEDICATION TO TEACHING OTHERS HAVE INSPIRED US TO PERSEVERE AND GROW OUR ENGINEERING EXPERTISE THROUGH VEX ROBOTICS.

CITATIONS

Editor. "Xia Peisu 'the Mother of Computer Science in China' and Her Impact – Women of Rubies." Women of Rubies, 27 Feb. 2020, womenofrubies.com/2020/02/27/xia-peisu-the-mother-of-computer-science-in-china-and-her-impact/.

McNeill, Leila. "The Computer Pioneer Who Built Modern China." Bbc.com, 2020, www.bbc.com/future/article/20200219-xia-peisu-the-computer-pioneer-who-built-modern-china.

"The Founder of China's Computer Industry, the First Female Scientist Named after Her-Xia Peisu – INEWS." Inf.news, 2022, inf.news/en/history/333f27e669f7348b27c45ff81b3109ac.html.