

## Breaking Barriers with Girl Power

“Every girl deserves to take part in creating the technology that will change our world and change who runs it.” These words, spoken by Malala Yousafzai, capture what it means to be part of the Space Cookies robotics team. The girls on our team grew up in environments where we were encouraged to be whoever we truly wanted to be. At school, parents would discuss their careers, and despite how dull these conversations seemed at the time, they wanted to inspire us, open new doors, and push us to our full potential. It had become such a norm in our experience that we thought it was standard everywhere. Finding that other girls and women weren’t allowed the same opportunities was shocking. At one point or another, every girl on the team had thought that gender discrimination was a problem of the past. We couldn’t have been more wrong.

Having felt pushed to the side by boys in the past, we were all attracted by the idea of building robots with other girls. Now, we work to show that gender differences are a misconception when it comes to intelligence,

problem-solving, and engineering. A female is no less capable than a male in any field, including STEM, and our all-girls robotics



team has the power to prove it. Everyday we put in our best efforts to make a dent in the barricades discouraging women, but gender inequality is not a quick fix.

Three little words have the ability to make us feel like our efforts are inadequate. We still occasionally hear, “I’m so dumb” slip from a girl’s lips. It’s a lie, even if she might feel otherwise. But the Space Cookies have each other to bring ourselves up. We show that girls have the power to come up

with creative solutions to problems that our mentors couldn't even conceive. We think outside the box to tackle not only engineering dilemmas but everyday conundrums. We value listening to what other girls have to say and take their suggestions seriously. We now know what we are capable of.

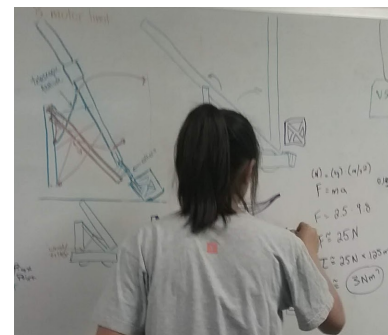
The words we dream of hearing are those of excitement over an engineering breakthrough. With no previous training in mechanical engineering in the case of four girls on our team, and only a year of



experience for the other two, we've had to discover the abilities we have individually and together. Within a few days of knowing each other, we needed to find the courage to build a robot. The girls new to the team had a daunting learning curve. Whenever they make an engineering breakthrough, they should

congratulate themselves, but instead, they're more concerned about failure. They have every right to recognize their achievements in becoming better engineers. However, they still see themselves as being the same rookies they were back in August. In truth, they've grown a tremendous amount. From being naive recruits, they've become the engineers of tomorrow, devising new, more effective ways to build mechanisms and write programming code. Using those new techniques they do everything in their power to achieve their ultimate goal of proving that girls and boys are the same, especially in fields that demand more recognition, primarily STEM.

The words we value the most are those spoken during brainstorming and debriefs. They are treasure troves full of knowledge and puzzle-solving ability. Every word is precious and, when released to the world, should be cherished. Whenever we see a puzzle, we leap to solve it. We search our brains for both complicated and simple



solutions to each problem. We attempt to teach other girls in the troop to do the same, but in their own style. Our solutions are also impressing our friends at school, increasing respect from peers and teachers.

Being involved in a Girl Powered team has boosted the confidence of all the girls' on the team. This new-found power has enabled us to embrace all of our strengths. The robot wouldn't be the same



without us, and we wouldn't be the same without this experience. We've all learned many valuable lessons.

Annie now knows that she is capable of making valuable decisions and contributions to an organization that has a truly profound purpose. Samhita has

discovered that programming is her true forte. Sophia

Lew has learned that she can build something intensely

complicated under constricting time pressures. Jacqueline now adapts in stressful situations to make quick changes. Sophia Liao has recognized that being together on a team brings out the best ideas. And lastly, Carolyn has unearthed that her brains are beautiful and deserve to be recognized by more people than just her teachers.

We can see the difference we are making in the STEM community. Despite the demanding schedule and stress that building and competition evokes, we still manage to challenge the barricade that is keeping so many girls from participating in the activities they love. We host several events throughout the year that introduce girls and underprivileged children of all ages to the engineering process, giving them the opportunity to try out their new skills. Girls know how to design, how to build, and how to redesign. Every member of the team grows throughout the season to have a competent



mindset and view competition as opportunities to improve. No engineer is skilled in all fields, but by working as a team, we can push each other to improve. Girls can be amazing engineers; we want the rest of the world to see it.

The problem-solving skills we have learned from being on the team have not just played a crucial role in our school and robotics lives, but also in our outreach adventures. Every time we go to an outreach event to introduce more girls to STEM, something always goes wrong, from small things like overheating motors, to major crisis like power cuts and missing outreach accessories. We must think on the fly to make the event as memorable as possible for the girls who are attending. Every crisis requires a new set of problem-solving initiatives and tactics, and every time, we always pull through and make the event as inspiring as possible. One day, we want to see the barricades restricting girls broken, crumbled to the ground. We know that our hammers are made of our confidence, and that we are making a difference when people hear the word STEM.

Being Girl Powered to us means that no girl is left behind. Every girl is given the same opportunities as any other girl on the team to share ideas, participate, and know that each girl counts. As members of an all-girls team, we don't just see each other as teammates; we're sisters. By being a part of



this journey through STEM side-by-side, we learn to understand each other's highs and lows. We realize that sometimes our brains will refuse to work at full capacity. We know that some days our lives outside of robotics can be crazy and the need for a comforting hug is necessary before building. The Space Cookies have stopped second-guessing their ideas, motives, and ability to do the



seemingly impossible. Now we add input onto any subject we can. Every one of us is done with our smarts being silenced and are now screaming them to the world.

Being a part of a robotics team and competing can be stressful and pressuring, but being beside other girls with the same interests helps us progress. We see each others' accomplishments and are inspired to do better. We find another girl's problem-solving abilities to be one step closer to a future of no discrimination. We regard the engineering feats of empowered women as inspiration to do better as the engineers of tomorrow and to go the extra mile to increase the number of girls entering STEM fields. We have no idea how long it will take to tear down the gender barrier, but our sister from space, Sally Ride, said it perfectly, "I would like to be remembered as someone who was not afraid to do what she wanted to do and as someone who took risks along the way in order to achieve her goals."

## Credits

Entrants: Carolyn Bremberg

Samhita Konduri

Sophia Lew

Sophia Liao

Jacqueline Li

Annie Tran

VEX Team 1868Z

Title: Breaking Barriers with Girl Power