## Team 6546D PRESENTS:

# A Part of the Change

Aarna and Juyeon Singapore American School, Singapore

#### Who Are We?

Located on the tropical island of Singapore, team 6546D is an all sophomore team from Singapore American School.



Aarna: While Aarna is new to robotics, she was able to make contributions to designing the intake of the robot. She also took on the role of being the main driver. Her understanding of the robot's CAD allowed her to easily adapt to driving the robot.



Juyeon: Juyeon is also new to robotics. Despite being new, she is one of our main designers and builders. Through this role, she is able to grasp how the robot comes together. This allowed her to be flexible in case of error or trouble.



Charlie: Charlie is the newest member of the team. Prior to joining robotics, he had no experience in coding and robotics. However, he was able to learn VEX code in a matter of weeks and served as our second programmer. Triston: Triston has a passion for computer science. While he is new to VEX, he quickly picked up VEX programming and became our main programmer. Like Aarna, he helps out our CAD and building. This allows him to get a firmer grasp on how to code individual components and trace the lifespan of our robot.



With prior robotics experience, Uddalak encouraged us to try various roles to find out which roles we enjoyed doing. But even with our roles settled, we still help our teammates when they need a hand. Uddalak: With experience in VEX code, CAD, and driving, Uddalak was able to oversee majority of the designing and building process. He worked with Aarna to help her drive the robot better.





#### How We Work







We put in a lot of emphasis on making sure everyone agrees with the parts of the robot design. For instance, when we worked on the drivebase, we debated for days on whether to continue doing the X-drive or change to a 6 motor drivebase. Triston, Uddalak, and Charlie wanted to try something new but Juyeon and Aarna thought that it would be too difficult to get it to run smoothly. We ended up choosing the 6 motor drivebase.

We took into account everyone's perspectives and priorities, and it helped us minimize flaws and come up with the best possible design to aim for a successful robot.

Therefore, by challenging each other's ideas and giving constructive feedback, we develop a collaborative team with a growth mindset and great chemistry.

### **Our Inspiration**

When we see how we became more open to various viewpoints, we think about one person. His name is Mr. Craig.

Aarna, Juyeon, Triston and Uddalak all had a math teacher named Mr. Craig for math during their freshman year of high school. One thing we'll always remember about him is his open mind.

When we solved a math problem using a different method than the one posted on the answer key, Mr. Craig would put his fingers on his chin, trying to understand how we solved the problem. He believed that there are many different ways to solve math problems, and we shouldn't be restricted to following the steps firmly listed on the answer key. As someone who was always inviting to curiosity and differing perspectives, it is no surprise that he served as a role model for inclusivity in our team.



"Try finding a problem that bothers you, and then be a part of the change"- Saylar Craig in his documentary No In-Between

#### Juyeon in her Jewel

Aarna and Juyeon noticed the gender inequality in STEM classes and activities at SAS from middle school and elementary. Sometimes, their ideas were even ignored and excluded by boys. Both being interested in STEM, they wanted to change this unequal distribution. As Mr. Craig said, they wanted to be a part of the change. With Mr. Craig's belief that everyone had their own unique way of solving a problem, Aarna and Juyeon decided to approach this issue through their own ways. Therefore, they participated in many STEM clubs such as robotics.

Juyeon started a club called BiOLab where she makes biology and chemistry more interesting and less intimidating for people who have no experience in those fields. Her leadership role in the club makes her a female role model for BioLab members at SAS.



The BiO LaB officer team.



Juyeon's first BiOLaB meeting.

#### Aarna in Action

On the other hand, Aarna joined a Women in STEM empowerment club in her freshman year, called Geek Girls. In Geek Girls, members get opportunities to meet inspirational women including Nobel Prize winners and university deans. As well as that, the Geek Girls officers expose female members to different areas of the STEM field through workshops and activities. Aarna joined robotics because an officer of Geek Girls encouraged her to do so. She also sparked Aarna's interest in the engineering field by hosting different workshops. This year, Aarna is one of the co-presidents of Geek Girls SAS. She tries to encourage other girls to be part of the change, the same way her former Geek Girls president was.



#### High School || Women Who Inspire Us

Nobel Prize winner Elizabeth Blackburn speaking at a Geek Girls webinar.



Geek Girls retreatwhere Aarna introduced members to engineering by hosting activities such as the egg drop challenge.

### The Girl Powered Workshop

Aarna and Juyeon's leadership experience in STEM clubs taught them to make significant contributions to getting more girls into science. In hopes of fixing the gender gap in the robotics program at SAS, they helped out at a Girl Powered workshop targeted towards middle school and high school girls. Here, they showed the fun in robotics by teaching the girls how to fly drones and drive VEX robots. More importantly, they taught the girls that robotics is for girls, too, and encouraged them to join robotics.

Aarna and Juyeon want to be a part of the change, and advocate for a world where girls are equally understood and represented in the STEM field including robotics.



Aarna and Juyeon teaching girls how to drive robots in the Girl Power workshop.



#### What Girl Powered Means to Us

Whether through roles assigned or ideas shared, everyone shines equally in our group. This continued implementation of inclusivity in our team allowed us to produce the ideal robot. This is also what we think Girl Powered is. Our team makes sure to prioritize inclusivity, setting an example for empowering women in the STEM field.

By advocating for a world where girls are equally understood and represented in robotics, we are not discouraging other brilliant ideas.

Instead, we believe that Girl Powered should advocate for the inclusivity of ideas regardless of what gender the person is. Girl Powered advocates for the voices that are not heard, whist maintaining the nature of the collaborative environment. To achieve this, girls should believe that we are ALL capable to be a part of the change.



#### Sources

Saylar Craig's documentary Youtube.Com, 2023, https://www.youtube.com/watch?v=GqtA4ZpOny0&t=264s. Accessed 11 Jan 2023.

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