

2023-2024

INSPIRING ENGINEERS

OUTREACH BINDER

FRC 4639 - THE ROBOSPARTANS



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OUR TEAM

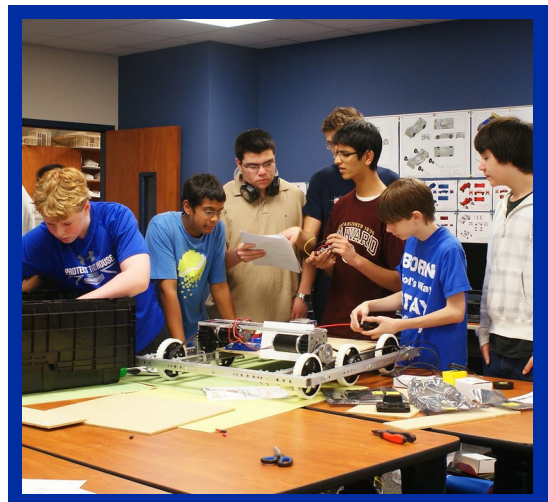
WHO ARE THE ROBOSPARTANS?



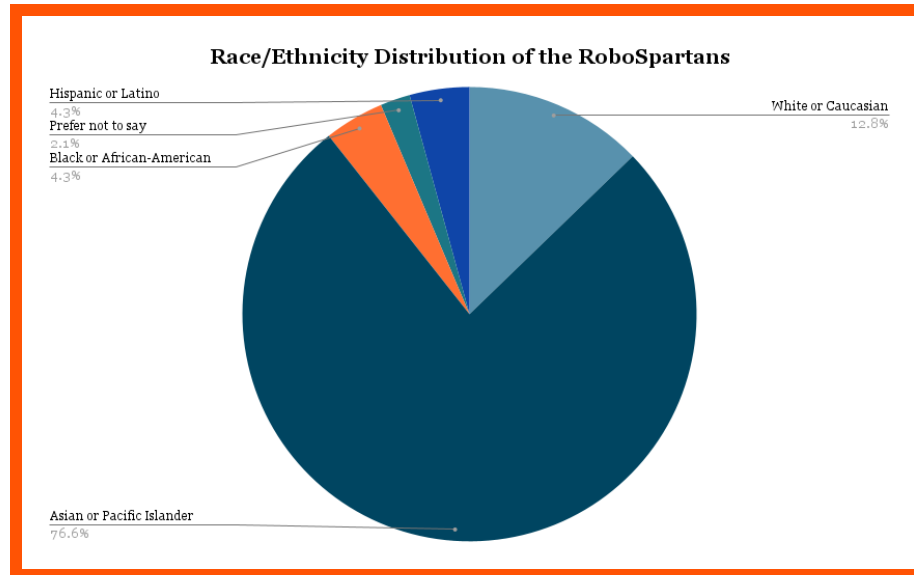
The RoboSpartans are a multicultural team of students engaged in inspiring a passion for science, technology, engineering, and math within our local community. We do this by hosting a variety of STEM-based camps and events, teaching underprivileged students, and searching for every opportunity possible to help out in our area. By working alongside adult mentors and volunteers, we gain skills in project management, team building, leadership, and communication that prepare us for the professional world and provide us with the resources necessary to become well-rounded individuals.

**"I LOVE TEAM 4639 BECAUSE IT GIVES ME A VENUE TO
EXPLORE MY INTELLECTUAL CURIOSITY TO THE FULLEST
EXTENT." - SPENCER POOLE, 4639 ALUMNI**

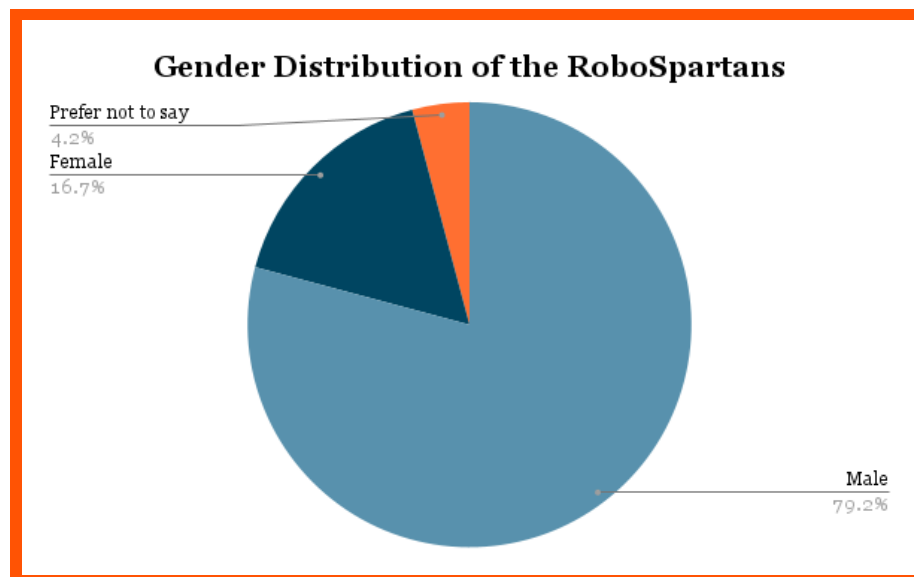
The journey of the RoboSpartans began ten years ago in 2012 thanks to Curtis Alden, an engineering teacher at Seven Lakes High School. In our first year, we had around 15 members. We started off by working in his classroom and members' garages, later transitioning to our current build site, the Robert Shaw Center for STEAM. We have steadily improved as a team, gaining traction and building our identity into the spirited RoboSpartans you know today. We currently have over 100 registered members, with even more joining each year.



STUDENT STATISTICS



The RoboSpartans are proud to consist of a highly diverse group of individuals. Everyone is given a fair chance to learn and work from the beginning to the end of their time on the team, and having multiple perspectives on topics and issues allows us to solve problems in unique, creative ways. We pride ourselves on the assurance that every individual is treated equally and feels a part of the robotics family we have created over the years.



We recognize the disparity of gender minorities in the STEM field and make an effort to support non-male members of our team, ensuring they are given an equal chance to participate and contribute. Recently, the number of women on our team has increased, leading to a greater number of women attaining leadership positions in both Build and Outreach and a higher rate of active female involvement.

GRACIOUS PROFESSIONALISM



The RoboSpartans define Gracious Professionalism as not simply respecting and working in collaboration with others but treating everyone as if they were members of our own team. We share our build site with 6 other FRC teams within our school district as well as many VEX Robotics Competition teams, helping each other in every way we can and building lasting bonds. We have also had many rookie FRC teams reach out to us for advice and assistance, and we continue to support them through their first seasons. We also provide online resources on our team website that many non-local rookie teams have stated as being extremely beneficial in their first seasons.

"THE PEOPLE ON TEAM 4639 ARE REALLY DEDICATED AND KIND AND COLLABORATIVE. THEY ARE ALWAYS WILLING TO HELP AND SUPPORT US." - SASHA ROBINSON, TEAM 624

Besides working in the same shared workshop, we loan each other materials, help each other with projects, support each other, teach each other, host events together, and, of course, have fun together. This collaboration between teams has shaped our culture to be as welcoming and helpful as possible to every team we meet. We are always trying our best to support others and promote a helpful, welcoming environment.





WHAT SPIRIT MEANS TO US

Spirit is the soul of our team. You'll find us cheering at competitions, hosting team socials, and making FRC events fun! From our trademark foam hats to our LED numbers, the RoboSpartans are vibrant and LOUD; our rhythmic chants dominate the soundscape and add an aura of spunk and electricity to competitions.

WHY WE CHEER

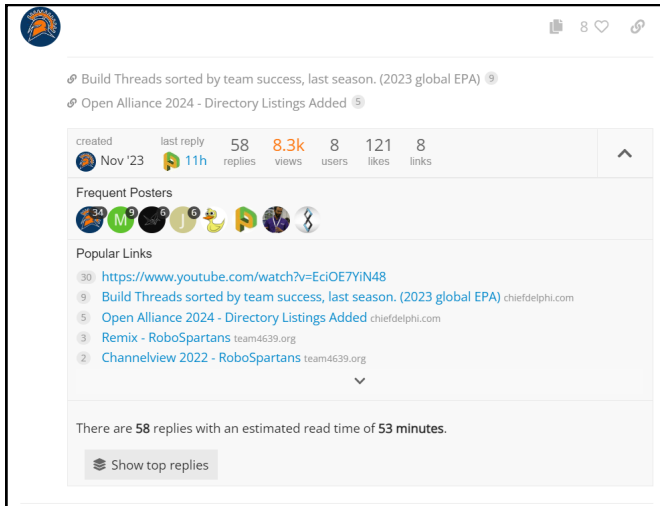
The light-up signs, foam hats, and our giant mascot - some people may ask "why bother allocating so many resources to something so seemingly trivial?" For us, this investment is a no-brainer; we cheer to electrify the competition environment, invigorate our teammates, and celebrate each other and FRC as a whole.



MOVING FORWARD

Given its integral role in our team's culture, spirit is a continuous investment for our team. We look forward to working on new projects and further developing our methods in order to best continue instilling excitement into the culture of FRC.

THE OPEN ALLIANCE



We started our journey with the Open Alliance in the 2023-2024 season. Being a “rookie” team within the community, we’ve learnt a lot of lessons and seen moderate success with a relatively popular OA blog on Chief Delphi. So far, we’ve amassed over 8,000 total views with that number continuing to rise every day. A main motivation behind starting this blog was to share our ideas and concepts to help and get help from other FRC teams, promoting collective excellence. This blog and our daily entries has also allowed us to keep track of our progress and hold ourselves accountable to meeting our set milestones. In our journey, we’ve also gained valuable ideas and suggestions from people of different teams and areas. We plan to remain a part of the coalition for future seasons and are hoping to be chosen as a Featured Team in the next few years.



PARTNERSHIPS



THE GIRL SCOUTS OF SAN JACINTO COUNCIL (GSSJC)

Over the past several years we have hosted several Girl Scouts badge workshops to help Girl Scouts ages 9-13 earn their three Robotics badges. We have helped hundreds of Girl Scouts to earn these badges and will continue to host future workshops to encourage more young women to gain interest in the STEM field.

THE ROBERT SHAW CENTER FOR STEAM

In addition to holding our school district's robotics teams, the RSC also organizes numerous STEM events for children of all ages that we help to host. At these STEM nights, we teach kids about *FIRST* and show them our robot and workspace in hopes of sparking an interest in STEM.



KATY ISD ELEMENTARY SCHOOLS

In order to first spark an interest in STEM in younger students, we visit several elementary schools every year to show the kids our robot and tell them about *FIRST*, FRC, and our team. The kids are able to interact with the robot in a safe environment while also being able to ask questions.



WOMEN IN STEM

Besides collaborating with GSSJC, our team has made many other contributions towards encouraging girls to pursue higher education and careers in the STEM field. We ensure that our female members are not only respected but feel welcome on our team and that female leadership is held to the same regard as male leadership.

WOMEN IN STEM WEBINAR

Great experiences



Work Experience

Pharmacy Technician CVS ; Long- Term Hospitals	Axiom Space Event Coordinator
Space Center Houston Program Coordinator – STEM programs	
NASA – OSU & USRA Contract Program Coordinator – OSU	

“Young girls need to see role models in whatever careers they may choose, just so they can picture themselves doing it.”





Our Women in STEM webinar features accomplished women from diverse STEM industries who serve as role models for young girls. By showcasing successful women in STEM, we aim to inspire and empower girls to pursue their own careers in these fields and remind them that they are not alone in their journey.

EDUCATIONAL CAMPS

STEM CAMP



In the summer of 2019, we decided to organize our very first camp. In this new STEM Camp, we split over 50 kids into 3 different groups. Over the course of three days, we then cycled them through various STEM-related activities such as building bottle rockets, programming Spheros, and experimenting with wind tubes. Since, we have made it a yearly event, gaining over 40 students per year. The camps were a hit and provided over 25 hours of STEM fun! Subsequently, we have even noticed kids from these camps join the team.

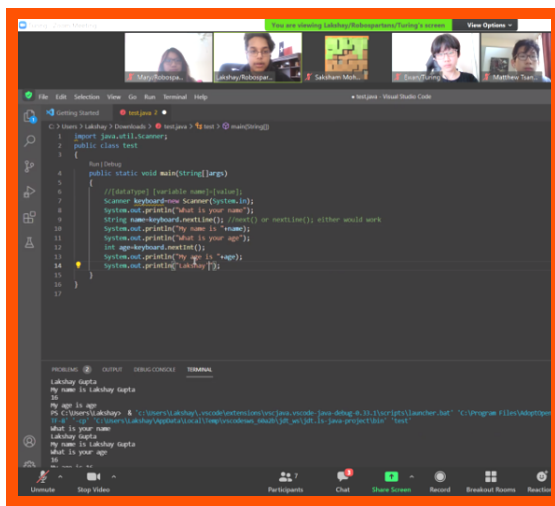
WINTER JAVA CAMP

With the success of our STEM camp, our team decided to host a camp for middle schoolers to teach them the Java programming language. Our first one was in 2019 where we taught 30 middle schoolers the basics of Java in preparation for the AP Computer Science A course. This camp was over the course of 2 days for a total of 12 hours, and, by the end, the participants were well prepared for further Java education.

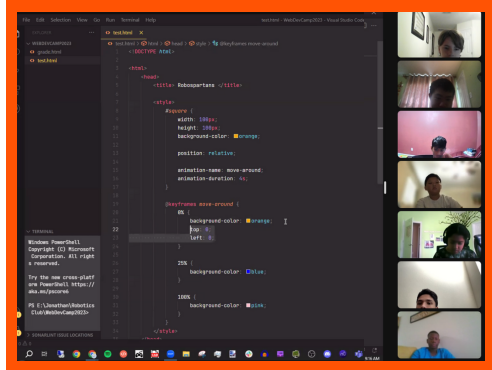


ONLINE CAMPS

Due to COVID-19, we were unable to host in-person camps, so we decided to host online camps for the summer. Our first online camp was a 5 day Java camp. Although the switch to an online platform made these camps very different, they were just as if not more successful than our in person ones. Following the success of these camps, we went on to host three more online camps: a third Java, an Engineering Design and a Web Development camp. Hosting them online gave us a few additional perks, such as allowing kids from out of state to join us. as well as being able to raise the member count. We still continue to host our online camps to this day!



EDUCATIONAL CAMPS



WEB DEVELOPMENT CAMP

This summer, we hosted a web development camp that lasted three days and hosted over 25 Elementary - Junior High students. Within this camp, we taught the foundations of HTML, CSS, and JS, inspiring the future generation of computer scientists and software developers. This interactive camp gave them the resources to explore creative programming and helped them build their very own personal project!

LEGO MINDSTORMS CAMP

Following the success of our other summer camps and the interest for applied STEM in our community, we also hold LEGO Mindstorm Camps. Here, we teach the basics of programming and building through interactive LEGO Mindstorm kits! We've had great success, reaching over 100 students in the different formats of the camp. Attendance has grown with every passing year, especially for our latest iteration in the 2023-24 season.



ENGINEERING CAMP

This Winter, we hosted a joint Engineering + Programming camp where we taught over 30 elementary students the core ideas that our FRC team utilizes. We presented an engineering challenge and allowed them to discover solutions through trial and error. Our participants left the camp having learned the basics of the design, prototyping, and iteration process that we ourselves follow throughout the build season.

FIRST LEGO LEAGUE

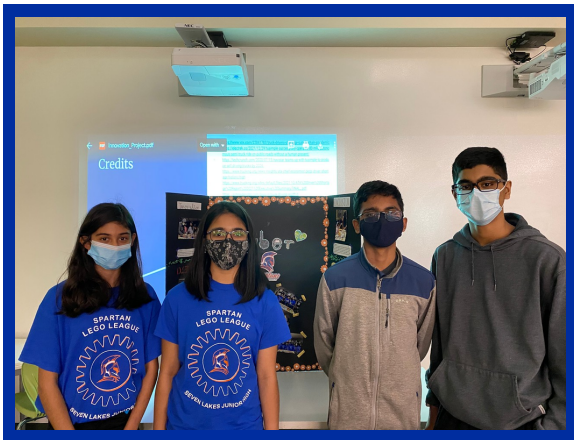
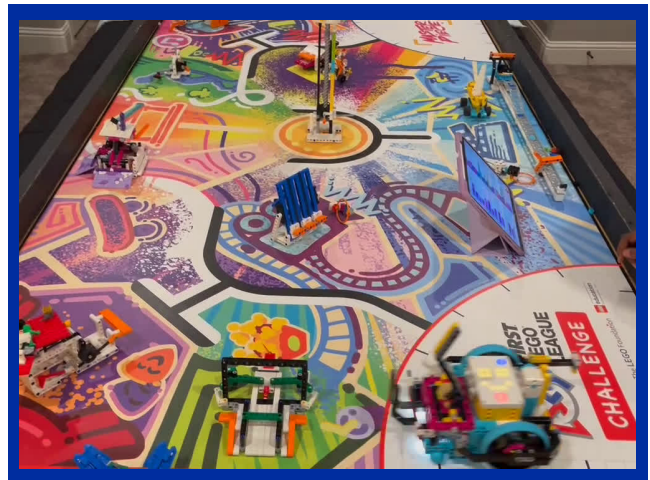


FLL TEAMS AT SLJH

In 2021, our team started two FLL Challenge teams at Seven Lakes Junior High: Team 54280, the CyberSpartans, and Team 54494, the Spartan Mechanics. Additionally, we started Team 59488, the Psycho Spartans. Every other Thursday, we host and attend meetings and teach the kids how to use LEGO Mindstorms by looking at past FLL games. Once they had learned the basics of FLL, the students were then placed into the FLL Challenge teams to compete. These teams are not completely independent, able to operate and compete without much mentorship.

CURRENT STATUS

We've continued our efforts to promote STEM and FIRST values through FLL in our community. We've started 2 rookie teams in Adams JH that have had immense success. ViKonics, one of the teams, went onto win their rookie competition with perfect scores in all judging categories. From hosting scrimmages to starting/mentoring FLL teams, we continue to enrich our community and inspire younger generations to pursue STEM and robotics.



OUR FUTURE GOALS

With our success with FLL and even FTC teams, we wish to continue the process of guiding new teams and also expanding our horizons to inspire students in lesser fortunate areas. We have ambitious goals to spread FIRST values and are excited for the journey it will bring us!!

ASSISTING FRC TEAMS

With over a decade of experience in FRC, we strongly believe it is our responsibility to help other FRC teams. In 2019, we helped Cypress Springs High School transition from a VEX Robotics Competition team to FRC team 8144. We also regularly assist team 8576, Golden Warriors Robotics, with their electrical systems and programming, as well as our sister team, 9181, in their rookie season last year.

THE PUMPKIN RUMBLE



We have a long-held tradition of hosting the Pumpkin Rumble, an unofficial off-season tournament, at the RSC. Designed to mimic real competitions, this event gives us Katy ISD teams a fun chance to interact. We often modify the FRC games to accommodate differences in the teams participating and also our wooden field. Along with a string of scored and ranked matches, we host exciting Halloween-themed activities, making it a memorable experience for all. In 2023, we played *Charged Up*, garnering a lot of interest and enthusiasm from all the teams in our area with a total of 6 teams participating. In past years, we've even invited teams from outside of Katy. The Pumpkin Rumble offers teams' new members the opportunity to experience a competition early in the school year, giving them valuable experience for the following Build Season.

FUTURE PLANS

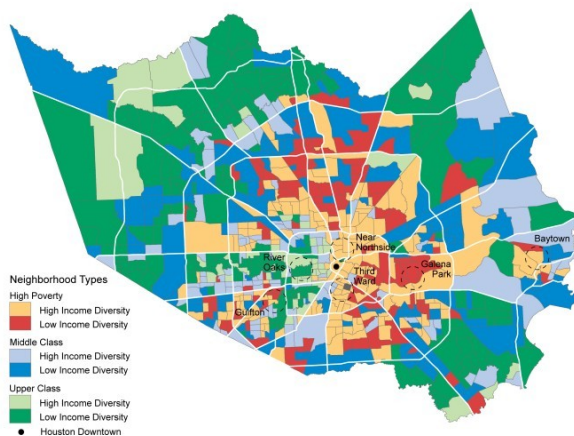


A FIRST CULTURE

Even with the creation of 1 FTC and 6 FLL teams and our continued assistance of FRC teams throughout our school district, our initiatives haven't ended here. Our ultimate goal is to establish a *FIRST* pipeline that leads students from FLL in elementary school to FTC in middle school and, finally, FRC in high school.

FIRST IN INDIA

There are several FRC, FTC, and FLL teams in India, but due to a lack of *FIRST* teams in the nation overall, they are forced to travel out of the country to compete, even at the district/regional level. In the world's most populous country, this severely limits the growth of *FIRST*. In the future, we hope to partner with several India-based FRC teams and *FIRST* officials to establish competition infrastructure and enable them to compete locally.



INNER CITY HOUSTON

In the past, we partnered with iEducate, a tutoring organization that primarily serves underprivileged students, to host STEMspiration workshops in lower-income areas. Unfortunately, after the organization went bankrupt, we lacked the funding to continue the workshops on our own. Now that we are a much bigger team, we hope to eventually restart these workshops ourselves.



CLOSING

By inspiring children of all ages across our local community and beyond, we hope to build future STEM leaders and motivate students to pursue higher education and careers in the STEM field, even after high school. Our priority as a team is to further foster the educational growth of children in our community and, through our efforts, make a long-lasting impact.

