

FIRST Impact Award - Team 6352

2023 - Team 6352
Team Number
6352
Team Nickname
LAUNCH TEAM
Team Location
Surprise, AZ - USA
Describe the impact of the <i>FIRST</i> program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in <i>FIRST</i> programs as mentors/sponsors.
FRC6352 has a 100% college attendance rate with over 85% pursuing a career in STEM, and some pursuing post-graduate Master's programs. Several alumni have returned to mentor new students. Our team learns to use formal documentation in a real life setting, giving us chances to utilize valuable skills for the workplace. All current members plan to continue in STEM after high school. Our team founder, Stephen Robertson, formed the FIRST Alumni Organization at ASU with all interested ASU students.
Describe your community along with how your team addresses its unique opportunities and circumstances.
FRC6352 has dedicated itself to the underserved community of the West Valley, with a focus on the City of Surprise and surrounding areas. As a community team and one of the first in the area, we struggle with a consistent build space and funding. After introducing the city leadership to FIRST and showcasing our abilities through GAIN night, SciTech Festivals and Tech the Halls, we have created a partnership for space with them for 2 years.
Describe the team's methods, with emphasis on the past 3 years, for spreading the <i>FIRST</i> message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?
We spread FIRST by creating opportunities. We've reached 1000+ K-12 kids by sharing FIRST@Home curriculum in videos, and providing 2000+ STEM kits. We're featured in the 2021 FIRST Annual Report for adapting the FLL Challenge season into a virtual classroom to support remote learning. Our LEGO Education grants provided FLL Explore and Discover materials we shared with teachers to run free seasons, reaching 3000+ students and starting and mentoring teams. These numbers help measure our success.
Please provide specific examples of how your team members act as role models within the <i>FIRST</i> community with emphasis on the past 3 years.
FRC6352 members are role models supporting all levels of FIRST. We welcome new AZ FRC teams with our LAUNCH Accelerator care packages filled with items we wish we had as rookies. Our students bring

FIRST opportunities where they see it is needed by starting FLL teams, teaching FLL at Boys and Girls clubs and connecting FLL alumni with other FIRST programs. Internationally, our team loves supporting the diverse FIRST GLOBAL community by mentoring teams like Vanuatu through the Global Stem Corps.

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

FRC6352 has started and assisted many FIRST teams, including writing grants and providing resources for FRC8021, FTC14940 and 17469 in partnership with Paradise Honors. We also started, mentored, and assisted FLL53597 at Phoenix Modern, FLL59745 at Empower College Prep, and FLL46894 at Scottsdale Prep. We started 24 FLL Discovery, 28 FLL Explore, and 24 FLL Challenge class pack teams via schools in Surprise, El Mirage, Glendale, Peoria, Phoenix, Paradise Valley, Scottsdale and Whittmann.

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

We bring interested students to volunteer at regional events, provide STEM materials and lessons to K-12 students, as well as robotics kits for use at home and in the classroom. FRC62352 proudly presents the Awesome Award to recognize student leaders in their community. Our team members take on leadership roles outside robotics such as the city Youth Council, BSA Patrol Leaders and VEX team leaders. Results show that all students we've recognized go on to participate in FIRST activities.

Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years

Our strongest partners are those we gain through community outreach. In partnership with the City of Surprise and the AZTechCelerator, we have a new home base at the Water Department and attend city events. We provided the AZSciTech Institute with 1000+ STEM kits for their Little Library and presented FIRST Fridays, and they invited us to join the STEM Hub Steering Committee and the Westmarc STEM Workforce Development Pipeline. We also partnered with FIRST Education for curriculum development.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.

Through fundraising and sponsorships, membership on team FRC6352 is completely free. As a community team, we accept interested or curious students. Thus, we have students from 7 different schools including homeschools and 70% of our team members are from an underserved demographic. Whether it's CADing, building, programming, or administration, we encourage all team members to try anything and everything that they are interested in. All our mentors and students have also completed EDI training.

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

We believe our team and mission will continue because of our community outreach. Creating and mentoring teams at every level ensures that students will always have another program to graduate into and additional opportunities to learn new skills. We are excited to expand our outreach beyond the school year by providing programs in the summer with FIRST@Home and remote FLL teams. Our latest

program has involved creating resources for BSA and Girl Scout teams to get their Robotics merit badges.

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years

FRC6352 works to learn from the way our sponsors work and build a relationship. Our Toyota mentors instill an engineering mindset and introduce us to Kaizen “continuous improvement”. By presenting our robot at their facility, we bring in additional mentors and interest, such as the leaders of Tundras to Sedona. Recruiting new sponsors can start with a family member seeing value in our program, (e.g. Waymo, GoDaddy) or by demonstrating our meaningful impact on our community (e.g. NASA, Bechtel).

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

FRC6352 has almost doubled in size this year! This created more opportunities to explore areas of design, CAD, 3D printing and outreach which bring a deeper level of learning. However, the team lacked specialized mentors and supplies like a 3D printer. We asked our alumni for support and they responded by bringing their real world knowledge back and our college mentors are teaching us as well. We're currently writing more grants and trying to reach into the community to secure more resources.

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

Our mission as FRC6352 is to “inspire young people within our community to get excited about science, technology, engineering, and mathematics, by both engaging them in and increasing community awareness of the exciting opportunities available to students through FIRST.” Our team started in Peoria but as we grew our reach and “community” grew too. We started very small but now our impact reaches as far as CA, UT, NM and FIRST Headquarters in MA, and well as across the Valley.

Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.

FRC6352 members belong to Girl Scouts and BSA Scouting troops. Our team was inspired to “show” their knowledge by recording videos that have been shared with numerous troops in our local community as well as outside of Arizona. After viewing these clips, troops have the opportunity to earn their patches and badges in robotics. This recorded method provides an easy and accessible way to see robotics demonstrations and gain a deeper level of understanding of STEM which we hope inspires students.

Essay

In Arizona, there are 65 FRC teams registered for the 2023 season according to FIRST. Of these, 49 are located in the Phoenix Metropolitan Area. Looking closer, however, a geographic inequity emerges. 40% of the population of Phoenix lives West of the I-17 freeway, with more than 1.5 million people living in the West Valley according to Westmarc. There are exactly 4 FRC teams West of the I-17, and only 2 West of the Loop 101. Stated another way, the cities of Glendale, Peoria, Surprise, Goodyear, Buckeye, Avondale, El Mirage, Youngtown and Litchfield Park have a combined population larger than Chandler and Mesa, but 1/3 as many FRC teams. Similar trends can be seen for all levels of FIRST programs. THIS is the reason LAUNCH TEAM 6352 exists. Dedicated to getting students interested in STEM fields through FIRST, our team is working hard to bring robotics to under-served communities across the entire state. Our unique method for spreading FIRST focuses on early exposure to FLL Discover and Explore programs. We ignite students' interest in STEM at a young age and take advantage of their natural curiosity to ensure a lifelong love of engineering. The key to these programs is bringing materials to the schools as a "free trial" of FIRST thanks to our grant from LEGO Education and UC Berkeley. Teachers borrow everything they need to run a season and return it at the end of the session. If they enjoy it, we help them start their own team with grants. During the last three years of this program, we've reached out to Nadaburg, Empower, Phoenix Modern and community groups, such as Boys and Girls Club Sand's Branch, and the Robson Branch, for a total of 28 Explore teams. We then expanded to include FLL Discovery class packs, starting 19 total teams and reaching students and mentors at Kaleidoscope, Phoenix Modern, and Empower, awarding students with medals and certificates to recognize their achievements. The goal was to not only give them a fun robotics opportunity, but to foster a lifelong appreciation for the FIRST Core Values. Our team also works to spread FLL Challenge in our community. In 2020, we received the FLL Connections Grant for 2 class packs. To date, even during COVID, we've started 20 class pack teams at Nadaburg, Empower College Prep and in community groups. Team FLL46894 at Scottsdale Prep. Academy was a unique case where, not only did we introduce them to FLL and provide them with resources, a LAUNCH TEAM member who had participated in one of our community FLL class pack teams took charge as the youth coach using his FIRST experience. Our team members have volunteered at official FLL events like the Central Phoenix, North Phoenix and Tucson Qualifiers as judges and referees. After working with Empower College Prep and Phoenix Modern for the past three years, we saw a shining example of the impact our outreach has and proof it develops students into lifelong learners. The students and supporting mentors at the schools were ready to take on a new Challenge, literally, and form FLL Challenge competition teams. We started teams FLL53597 at Phoenix Modern, and FLL59745 at Empower College Prep, and mentored them during their weekly meetings. At their qualifying event, the teams may not have won any awards, but you wouldn't have known from the students' reactions. The Mod Squad students were thrilled to be the finalists in the playoff bracket and vowed to continue working on their robot when they got back to school. Ms. A, coach of the Launch Empower team, has decided she wants to go even further and will now be teaching a robotics class for grades 7-12 using a competition FTC team. We are writing grants to start her team and lending her a competition field. LAUNCH TEAM was integral to starting the only school-based FTC and FRC teams in Surprise. We started and provided resources to FTC14940 and FTC17469 at Paradise Honors MS and funded them through rookie grants. We started Panther Robotics, FRC8021, at Paradise Honors HS and wrote several rookie grants to support them. We also created resources specifically for them, like a packet with "Everything You Need to Know About FRC", including info about AndyMark, the KoP and WPILib as a guide through the basics of where to get tools, parts and software help. During COVID, we helped them apply for bridge funding and provided resources for navigating the virtual season. During regular competition, we demonstrate cooperitition by sharing resources, like practice space and 3D printing, but also ensuring we are competitively independent. We mentor them by keeping weekly contact to collaborate. Another way that we help FRC teams is our "LAUNCH Accelerator" care

packages. Started in our second year, LAUNCH Accelerator kits for rookie FRC teams contain things we could've used during our rookie year, like document templates, bumper paint and a first aid kit. Over the past 3 years we've sent packages to all 12 new AZ teams. Last year, we started creating short videos for rookie teams, called One Minute to LAUNCH, explaining things like fundraising, FIRST awards, and documentation. We also participated in the first ever Arizona Robotics League in Peoria to show support for robotics events in the community. None of this would be possible without our sponsors over the years, including Bechtel, Toyota, Waymo, Whataburger, and Tundras to Sedona. Our sponsors are more than financial support, they represent an opportunity to learn from their businesses. Our retired Toyota mentors for example bring Kaizen (continuous improvement) and Toyota Way engineering. We have multiple new sponsors this year, like General Dynamics, GoDaddy and NASA. Perhaps most importantly, we have gained the City of Surprise as a sponsor for our team. We've been working with Surprise for many years, participating in STEM-based events like sitting on the SciTech Festival planning committee and attending Tech the Halls at the AZTechCelerator to showcase our student's work to local tech startups. They supported us in distributing our "Awesome Awards" to recognize students who help others and show an interest in STEM. When our team was no longer able to meet in our mentor's garage, the city Water Department even graciously sponsored our team by letting us use their facility as a build space. During the pandemic, we forged a unique partnership with the directors of FIRST Education. We created virtual classroom materials for FLL Challenge to adapt the season to remote learning environments and to include students who may not have access to a traditional team. By redesigning the engineering notebook and adjusting team meeting structures, we also provide a flexible schedule to fit any coach's timeline. This work with FIRST was recognized in the official 2021 annual report. In addition, we worked to promote the FIRST@Home curriculum and have integrated it into our core outreach materials. In conjunction with the SciTech Institute, we used these materials as part of the Virtual SciTech Fest by hosting live-streamed STEM presentations as part of FIRST Fridays in February, mailing STEM Kits to over 150 families across 3 states, and new this year, creating over 1000 FIRST@Home STEM Kits for the Institute to distribute across all of Arizona to their network of Little Libraries. We've learned to look beyond simply starting teams to spread the word about FIRST. Participating in public events can have a big impact. Again with the AZ SciTech Institute, we've joined the West Valley STEM Hub Steering Committee, attended the West Valley Workforce Pipeline Conference, and presented at the Barrett-Jackson STEM Fest, the Dback's Science of Baseball and STEM Dugout showcases, demonstrating our robot and sharing info about FIRST programs across the state. When talking with over 500 families, we're always happy to surprise some by explaining that they don't have to travel far from the West Valley for robotics! As a result, our team has grown by 50% this year and we've had more people contact us than ever before with interested students. Other ways we increase STEM awareness include our community service. This year our annual food drive was featured in the Daily Independent newspaper for collecting \$300 and 395lbs of food for St.Mary's Food Bank during a period of record high need and record low donations before Thanksgiving, keeping pace with the over 440lbs of food donated to Saguaro Jane's Food Bank in Wittmann, serving 200+ weekly families. Our most emotional activity honors Salt River Police Officer Clayton Townsend, who was a friend of team alumni and killed in the line of duty. We share his story via our acronym F.I.R.S.T. "Forget It, Really, Stop Texting", giving keychains for pledges to not text and drive. Our efforts were recognized by 12News and we've continued to provide STEM holiday gifts to his son for the last three years. This year, we've started a brand new outreach initiative in partnership with both the Boy Scouts of America and the Girl Scouts of America. Scouts have the opportunity to earn robotics merit badges and patches for learning about robotics programming, design, career paths, and applications, but their troop leaders often don't have the resources to teach those badges. Our team members saw this need and decided to share their knowledge with others by providing the tools to teach it. We created a digital course for scouts to take individually or as a troop,

taking them through the individual requirements to fulfill the three badges for the Daisy and Brownie Girl Scouts, as well as the BSA Robotics merit badge. Using creative, unique, teaching methods, our curriculum can be utilized by anyone and everyone. With seven total years behind our team, we've had time to learn and grow but there's still so much we can do. As we plan for our future and continue our outreach, we will continue to uphold the values of FIRST and inspire students about STEM wherever we can.;

