

## FIRST Impact Award - Team 3473

### 2025 - Team 3473

#### Team Number

3473

#### Team Nickname

Team Sprocket

#### Team Location

Diamond Bar, CA - USA

**Describe the impact of the *FIRST* program on team participants within the last 3 years. Think about percentages of those graduating high school, attending college, in STEM careers, leadership skills, and serving as mentors/sponsors in *FIRST* programs.**

100% HS graduation & college attendance rate(including current attendance at MIT, Berkeley, CMU, UCLA, Purdue, CSU SLO): 90% continue on to pursue STEM careers. Notable alumni jobs include Northrop Grumman, L3Harris, Boeing, JPL, SpaceX, JP Morgan. Many continue FIRST contributions: 1000+ hours mentoring 6 FIRST teams, initiating Aerojet Rocketdyne Grant to 8 teams, & one FIRST Volunteer of the Year. Alumni apply FIRST values of service, inclusivity, & sustainability to their thriving careers.

**Describe your community along with its unique opportunities and circumstances. Think about your geographic region, diversity of town/school, language barriers, socioeconomic barriers, and cultural expectations.**

Our community is abundant in its pursuit of arts & athletics, but deficient in STEM focus. 3473 bridges this gap with our STEM excellence, showcasing robotics & STEM programs(Dronescape, Brahma Tech, SWE, etc) at community events. With low STEM emphasis in our area, we persist through hardships in obtaining & retaining mentorship. Our challenges push us to mentor the FIRST community: host 25 annual community events, guide 6 MS robotics teams, and foster FIRST team creation in 3 districts.

**Describe the team's methods, with emphasis on the past 3 years, for spreading the *FIRST* Mission in ways that are effective, scalable, sustainable, and creative.**

Beyond Team Sprocket, members promote STEM on campus as leaders of Print3dWorks, Kode4Kids, Dronescape, SciOly, FBLA, and USACO clubs. Consistent recurring efforts to engage with international partners: annual Taiwanese, Chinese, and Kenyan educational visits support global awareness of FIRST. We aim to engage more students into STEM through invention challenges, Yimbo FLL teams, and our RoboticsAccess website that allows FIRST teams(20 prototyped) to share their stories and resources.

**Describe your team's goals and the progress you have made towards them to fulfill *FIRST's* Vision.**

Hosted 2 annual STEAM Fairs engaging 17 STEAM clubs, 8 FIRST teams, 4 authors, 1300+ guests; donated 800+ books & led student literacy workshops to produce 60+ stories. Partnered with Tonies® to create 3 FIRST-based stories & published 2 STEM Magazines, capturing the efforts of 11 global FRC teams in 2024 & 6 VEX, FLL, FTC teams in 2025. 3473 Invention Challenge: competition for 12 MS & elementary school teams to explore creative engineering. 55% of members join after attending past outreaches.

<p><b>What impact has your team seen from your efforts described in the above question? How does your team measure impact?</b></p>
<p>We measure impact through our 31 members &amp; countless participants who engaged in STEAM after involvement at our past outreaches: elementary &amp; MS robotics initiatives, joint events, etc. Inspired WVUSD teachers to promote STEM at 100% of WVUSD middle schools, leading to 6 Sprocket Invention Challenge team creations and 4 MS organization exhibits at our STEAM Fair. Additionally, WVUSD MS teams FLL 67962 &amp; 67584, FTC 19510 participated in our recent FLL &amp; FTC events, including co-host FTC 22471.</p>
<p><b>Please provide specific examples of how your team and team members act as role models within the <i>FIRST</i> community with emphasis on the past 3 years. How do you share these best practices with other teams?</b></p>
<p>Outreach includes all 57 members(2800+ volunteer hrs annually). Volunteer at FIRST events: Beach Blitz &amp; Social Showdown 2021-23, ran 6 FTC ILT and 2 FLL for 200 teams. Furthering FIRST: 16 CAD workshops for 9 FTC teams &amp; 170 WVUSD students, donated 800+ 3D printers and 12-page guide to 250+ FIRST teams &amp; education organizations. Provided CHLA pediatric patients with STEM picture books &amp; 20 activity kits/IV caddies. Donated 50+ fire relief kits for families impacted by CA wildfires.</p>
<p><b>Describe your team's initiatives to Assist, Mentor, and/or Start other <i>FIRST</i> teams with emphasis on activities within the past 3 years.</b></p>
<p>Hosted 8 years of international annual exchange programs with Taiwan's Kaohsiung Municipal High School, China's Tsinghua HS &amp; Xiamen University, guided them through design workshops &amp; robot design challenges, assisted in the establishment of Taiwan's FRC 7526. Technical support, resource assistance, game field access for FRC 7526, 7157, 968, 5857; Secured 14 Lego Mindstorm Kits &amp; initiated 3 FLL teams for 2024 season. 3D printer distribution &amp; grant impacted 250+ teams, nurturing coopertition.</p>
<p><b>What other initiatives have you created, grown, sustained, or participated in (<i>FIRST</i> or otherwise) to help inspire young people to be science and technology leaders and innovators? What outcomes have you seen from your efforts in the past 3 years?</b></p>
<p>Annual 5-week middle school Engineering Academy with 50% return rate teaches creative design to 150 students. Introduced 3 UC-approved engineering courses: Innov. in Tech, IDEA I &amp; II at DBHS with 125+ students; 45% complete all 3; applied across 24 OC schools. Hosted tech &amp; inclusivity workshops with WVUSD Student Leadership programs, 10 years of hands-on robot demos at Evergreen Elem Family Night. Efforts led to 50% more enrollment &amp; completion in DB Brahma Tech Academy over the past 3 years.</p>
<p><b>Describe the partnerships and relationships that you've created with other organizations (teams, sponsors, educational institutions, government, philanthropic entities, etc.) and what you have accomplished together, with emphasis on the past 3 years.</b></p>
<p>15 outreaches to 2000+ students with 10 sponsors(e.g. 2 Kiwanis STEAM fairs). XYZPrinting partnership provided 400+ 3D printers to 250+ FIRST teams. Friends of Yimbo: tours of our facility for Kenyan educators, 4th annual 8K walkathon with D2L Inc. raising \$4000 to bring STEM resources to 472 Kenyan students; supplied arduino kits, laptops, and member-created STEAM lessons to teachers of Muguna Primary &amp; Barkenyango HS. Expanded 2025 walkathon to include local elementary schools.</p>
<p><b>Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, <i>FIRST</i>, and your communities.</b></p>
<p>Partnered with The SF Foundation to provide sixty 3D printers, 20 cases of filament, and 10 webcams to tribes of Navajo Nation. CAD workshops for La Habra Boys &amp; Girls Club and students with special needs; hosted Boy &amp; Girl Scouts STEM badge events. Showcase &amp; event sponsor for Gamma Zeta Boulé and Alpha Kappa STEAMposium (400+ attendees; 70% minority population; 9 yrs running). Promoted FIRST to 1000+ guests at Asian Fall Festival, CAPA Lunar New Year, and Rotary Red Ribbon Festival.</p>

<b>Explain how you ensure your team and the initiatives you have created will be sustainable.</b>	
Leveraged K-12 district connections by organizing workshops, school robot demos, and 8 team field trips to regional competitions, creating a system for engaging WVUSD students in becoming STEM participants, including & beyond 3473. Invite local community to FIRST: Kiwanis, Dedicated 2 Learning Inc, DB Senior Center, ensuring continued support of our workshops, STEAM fairs, demos, sponsorships. Further Alumni relationships with updates & invites to attend our Kickoffs, outreaches, and meetings.	
<b>Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.</b>	
Based in suburbs: 30+ miles away from engineering companies. Less accessible mentorship results in an independent student-led team with 1-2 college mentors the past 3 years. To address our challenges, we continue reaching out to local businesses & alumni, securing mentors from L3Harris, Spyder3D, CSULA. This season we have 2 professional engineering mentors who maintain weekly visits. We retain mentors through gratitude: compensations, team apparel, and delicious food to form close connections.	
<b>Briefly describe other matters of interest to the <i>FIRST</i> 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, particularly noteworthy, or had a large impact.</b>	
XYZ 3D Printing Initiative: a parent from our Engineering Academy, inspired by our efforts, secured company support to endow Team Sprocket with 1400+ printers for distribution, to foster creativity and innovation through tech access. We leveraged connections with FIRST coordinators, teams and industry partner, SpyderLab, to provide 3D-printer grants. Ongoing distributions of these resources allow us to establish new partnerships and strengthen STEM education—promoting FIRST and its core values.	
<b>Judge Feedback</b>	
	<b>What is one area of improvement in our community outreach initiatives that you would like us to improve on for the next season?</b>  <b>An area the team has an opportunity to improve.</b>  <b>Something that really impressed the judges.</b>
<b>Essay</b>	
ODYSSEY: Just as every star in the cosmos shines with its own brilliance, 3473: Team Sprocket shines in bringing unity through uniqueness and identity to the FIRST community. We put the “I” in FIRST by empowering each member to find their unique place in the vast universe of STEM, forging their trajectory while staying anchored to our core principles.  Through Inspiration, Inclusivity, Innovation, Impact, and International outreaches, we cultivate a framework where diverse ideas orbit together to create meaningful change. By uplifting one another and collaborating with other orbiters, we propel beyond limitations and launch the next generation of engineers, business leaders, and problem-solvers.  To us, the “I” in FIRST doesn’t just mean “Inspiration”—it also means Individuality. It’s who we are, what we create, and the mark we leave behind.  GENESIS: Our journey began in 2011 as the first FIRST team in the Walnut Valley Unified School District. However, financial setbacks forced our team to disband a year later. Yet, like a rocket awaiting its next launch, our passion never faded. In 2014, we reignited, fueled by determination, and today, Team Sprocket has 57 dedicated members,	

25% more than three years ago. We have an array of supporters, including Raytheon, Boeing, Gene Haas Foundation, and Aerojet Rocketdyne, as well as local business partners SpyderLab, XYZPrinting, and Dedicated to Learning, Inc. Our foundation has given us the momentum to reach new heights, uplift communities, and expand access to STEM education—transforming it from a privilege to a right.

**CONSTELLATIONS:** Like a widespread and diverse constellation of stars, our team is organized into two departments, with three captains who navigate six vital subteams: Operations, Publicity, Outreach, Manufacturing, Programming, and CAD. Each subteam consists of leaders who fuel their modules and prepare each individual to lead challenging projects in their specific fields. We're further ignited by support from our mentors, who are extensively experienced in engineering, business, and FIRST. By fostering leadership within each subteam, we emphasize that every individual has the potential to shine in their own way while working collectively toward a greater goal.

Our legacy is the gravitational force that binds us, built by generations who have left behind guiding constellations for us to follow. The wisdom and experience of our past members act as a supernova igniting new ideas and fueling our drive to reach new frontiers. With this foundation, we continue to expand our universe, ensuring our impact stretches across light-years.

**THE MILKY WAY: NUCLEUS (LOCAL):** At the core of Team Sprocket's mission is empowering local students through immersive STEM education. For 6 consecutive years, our Summer Engineering Academy has launched 200+ middle schoolers into new frontiers, offering 150 hours of lessons in engineering, programming, graphic design, 3D printing, drones, and robotics. Through this annual initiative, Team Sprocket is able to advocate for individual development and exploration. We've also embedded FIRST core values within Diamond Bar High School by introducing three UC-approved classes: IDEA I & II, where 125+ students are learning engineering concepts that add fuel to their fire for careers in technology, and our newest UC-approved course, Innovations in Technology, launched in 2024. These curriculums have been applied to 24 schools across OC and explore the intersection between business and engineering innovation—proving that STEM is as diverse as the individuals who pursue it.

We expanded upon our annual 6-week CAD workshops to accommodate students with special needs, helping them make their mark in the world of STEM and giving students the resources to innovate. By addressing diverse needs and abilities, we ensure that every individual can find their place in STEM. Additionally, we introduced RoboticsAccess, a business platform designed to empower rookies, helping them manage their resources and navigate the challenges of starting a robotics team—igniting innovation across local FIRST teams and student organizations.

This Spring, the Sprocket Invention Challenge was launched to inspire 12 student teams to create sustainable, recyclable inventions—fostering individual innovation and problem-solving across the community. We also released our 2nd FIRST magazine, celebrating the efforts of 6 FIRST and VEX teams, and providing students with hands-on experiments to start their own robotics subteams—all while capturing the essence of putting the I in FIRST by Inspiring students to Innovate and lead. These events highlight the importance of collaboration while celebrating the unique skills and ingenuity of every participant.

**BULGE (STATEWIDE):** As we extend our reach, Team Sprocket continues to propel STEM education across our region. Through our annual STEAM Fair, we brought 800+ attendees together on our campus to engage with FIRST teams and 17 STEM clubs in interactive tech demos. Our fair is a platform for students to showcase their creativity through art installations and performances—proving that Innovation transcends the boundaries of science and into the arts.

For nine consecutive years, we have participated in the STEAMposium at Pasadena City College, an event dedicated to empowering minorities with limited access to STEM. Our presence illuminates the possibilities of STEM and FIRST robotics, helping students chart a course toward innovation. Through interactive robotics showcases and

hands-on activities, we provide a safe harbor for young minds to explore, experiment, and realize that STEM is an open sea of opportunity.

Our California Fire Relief Effort demonstrated our commitment to building resilient communities by creating supply kits in collaboration with FIRST teams, BrahmaTech, and Diamond Bar Community Leos. Furthermore, our collaboration with Children's Hospital Los Angeles to distribute 20 CAD-decorating kits with our STEM picture books allowed young patients to customize their IV poles, bringing creativity and comfort to their hospital stays—demonstrating that engineering can heal and support individuals in unexpected ways.

Additionally, we ran multiple FIRST competitions, including FLL and FTC events, where teams from across the region gathered to launch their robotic creations into the competitive universe. We've propelled (2) 2023 FTC Powerplay Interleagues, (2) 2024 FTC Centerstage Interleagues, the 2023 FLL Masterpiece Qualifier, 2024 FLL SUBMERGED Interleague, and 2025 FTC INTO THE DEEP Interleagues with over 200 FIRST teams participating and Boy Scouts earning their STEM badges for volunteering.

DISK (NATIONAL): Team Sprocket has continuously expanded its impact in the FIRST community by distributing 3D printers to 52 FLL teams, 163 FTC teams, and 35 FRC teams. With these devices, 250 FIRST teams now have access to technology tools that enable them to reach for the stars in their robotics programs. An additional 200 devices will be distributed by the end of this year, ensuring that more teams and educational organizations have the resources to thrive.

We aim to distribute our STEM magazine and picture book into the hands of students and educators across schools, libraries, and programs. We are currently publishing and donating 60+ picture books and magazines, providing tools for individuals to explore STEM in ways that best suit their needs.

INTO UNIVERSES (GLOBAL): Our international partnerships have extended Team Sprocket's reach beyond borders, fostering a global constellation of aspiring innovators. Through our partnerships with Kaohsiung Municipal Girls' and Boys' High School in Taiwan and Tsinghua High School in China, we have mentored and connected with over 100 students, forming a gravitational pull that unites diverse cultures under the shared mission of FIRST.

Additionally, through our collaborations with Muguna Primary School and Barkanyano High School, we have helped establish their first-ever STEAM club and Engineering & Business curriculum, running 10 online workshops with 60+ students. Expanding upon this orbit of impact, we initiated their engineering program, teaching students essential engineering topics for 10+ weeks. Our annual 8K charity walkathon, a journey mirroring the vast distances students in Yimbo, Kenya, traverse daily to access education, continues to grow each year—gathering 100+ attendees and raising ~\$4,000 annually, which we've used to route engineering kits designed by our team to 472 students, inspiring and advocating for discovery within students in Yimbo.

Through this, we've inspired local elementary schools to walk alongside us, deepening their understanding of global education. Their participation has led to the incorporation of Yimbo-focused curriculum into their classrooms, expanding awareness and reinforcing the belief that education—like water—should flow freely to all, despite the distance.

Expanding our reach across the globe, Team Sprocket has coordinated with Coderina, a technology-based nonprofit in Africa, to run 4 online STEM workshops emphasizing innovation through introductions to engineering and project-based learning for 400+ students and teachers in Ghana, Nigeria, Kenya, Tanzania, South Africa, Togo, and Sierra Leone.

EXPLORING BLACK HOLES: Team Sprocket propels innovation, creating a launchpad for students and mentors to drive meaningful change. We constantly chart new courses and explore ways to expand STEM education and global outreach. Looking ahead, we aim to ignite new opportunities by sharing our knowledge with educators, spearheading

more workshops, and developing sustainable programs that empower students of all kinds. With every step, we expand the universe of opportunity, to emphasize that putting the 'I' in FIRST means guiding individuals to reach beyond the horizon and push the boundaries of what's possible.

We put the 'I' in FIRST.;

