

FIRST Impact Award - Team 2338

2023 - Team 2338
Team Number
2338
Team Nickname
Gear It Forward
Team Location
Oswego, IL - 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.
2338 teaches problem solving skills needed for college & has a successful track record of preparing students for higher education with 100% of members continuing STEM careers beyond highschool. Skills learned on 2338 help members earn internships & employment at our sponsors like CAT & SD308. 2338 alumni return to FIRST to mentor teams, share knowledge, experiences from college, & professional careers. This shows the impact that FIRST has on us & the value in continuing to be involved with 2338.
Describe your community along with how your team addresses its unique opportunities and circumstances.
Over 2k students in our district are a part of the Special Education Department (SPED). 2338 connects with SPED students in classrooms & collaborates with teachers to innovate solutions to overcome obstacles. We host a SPED open house- inviting students into the shop to see what FIRST has to offer. Our shop is accessible for students with mobility needs with wheelchair accessible doorways & workbenches. We create an inclusive & welcoming environment for these students- helping them succeed.
Describe the team's methods, with emphasis on the past 3 years, for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?
2338's legislation for IL. FIRST Robotics Day was created to recognize FIRST, spread awareness, & promote STEM literacy in schools. More than 1000 teachers across IL received our grade-specific flyers, & posted photos of students on Facebook using #FIRSTisforeveryone- resulting in a 323% increase in engagements on Facebook. This year, we collaborated with FTC team 18183 to spread FIRST Robotics Day. They were able to use our fliers- promoting STEM & showing the versatility of our resources.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
2338 prioritizes mentoring girls. We run a Winter STEM Camp & Girl Scout Workshops where female members model mentorship & introduce younger girls to tools, robotics, & FIRST, helping to increase

female involvement by 79% in 3 years on 2338. Sharing our materials and experience with team 1625, we helped generate ideas for increasing diversity on their team. We hold a Women Who STEM meeting during our Week 0 Scrimmage, to share our support system with teams, growing diversity across FIRST.

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

Mentorship begins by building relationships & teaching the basics of FIRST. 2338 prepares teams for independence by teaching programming, CAD, mechanical, & electrical. We continue to mentor 8880 through their 2nd season with in-person & virtual help, continuing mentorship until they stand on their own & can mentor others as we did with Team 5847. Our training library is available online for other teams to utilize. We raised \$12,150 to start & mentor 13 FLL teams making them free to join.

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?

2338 provides students with a hands-on STEM learning experience that had been lost due to budget cuts with our annual distribution of over 1,300 STEM Kits. These monthly kits engage students in learning; exploring concepts & developing critical thinking skills. According to Teachers, these kits increase interest in STEM, inspiring students to ask questions & make discoveries, helping to deepen understanding of the subject matter, become leaders in the classroom & help bring students to FIRST.

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

2338 partners with Congressman Bill Foster to bring FIRST to congress through H.Res 259 National FIRST Robotics Day. Our relationship began by introducing Rep. Foster to FIRST by bringing him into our shop. In 2022, he was our keynote speaker at our Week 0 Scrimmage & guest at the Midwest Regional. With this partnership, we have introduced 5 new congresspeople to FIRST & together are on our way to passing H.Res 259, encouraging \$1.17B to be used to start robotics teams in underserved schools.

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

2338 improves equity within our team & FIRST by delivering STEM kits to underserved schools in the community. We promote diversity with our Women Who STEM group- which is a place for girls to find their voice & place in FIRST through encouragement from each other & allies. 2338 increases inclusion & support through our work with the Special Education Department- showing all students that they have a place in 2338. Our goal is that every student feels a sense of community in FIRST.

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

On 2338, we mentor to build continuity & pass knowledge to future generations. We mentor FLL, to create a base of support for students- building excitement for FRC. Working on adaptive toys, Community Helping Utility Companion for Kickball (CHUCK), & STEM kits allows us to see the empowerment they bring & the importance of inclusive design, such as CHUCK which allows students in

a wheelchair to participate in gym. Sharing passion for projects inspires students to continue as members graduate.

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

In order to increase EDI, 2338 aligns with sponsors who have similar missions. Our team worked with mentors from Caterpillar as we formed our Women Who STEM group. Our first CHUCK was developed for the daughter of one of their employees as a way to show 2338 was using what we learned to give back. In 2023, we recruited CCG & Molex to join our mission of #FIRSTisForEveryone through presentations showing them how we impact the community. They eagerly joined our mission with funds & assistance.

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

2338 started an EDI committee to improve diversity on our team. This committee is a crucial step to creating a more diverse & inclusive environment through working to reach underrepresented groups & bring them into the FIRST family. Initiatives we have implemented are our Women Who STEM group, free FLL teams, English to Spanish translations, & accessibility adaptations to our shop. These things are helping us create a more welcoming & inclusive environment.

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

2338's #FIRSTisForEveryone aligns with the FIRST mission. By mentoring FLL we are making FIRST accessible to younger students & giving them the foundations of critical thinking & creativity. 2338 has fulfilled our goal- helping students develop problem-solving skills, learn from mistakes, build confidence, & practice leadership. These capabilities will serve our alumni throughout their life as they approach college, the workforce, & other life endeavors.

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.

2338 is building more than robots; we are building workforce leaders of the future. We foster confidence that equips students with the tools they need to impact their community through 2338 University- a course designed & led by students. During this 7 week course, students explore how to become an effective leader. 2338 supplies opportunities for members to apply newly learned leadership styles to mechanical, & electrical projects in order to immediately benefit the team & communities.

Essay

Team 2338: Gear it Forward has a mission to spread STEM & promote #FIRSTisforeveryone. When you join our team, you join this mission. Through workshops, training, & outreach projects, 2338 makes a difference in this world. We are improving equity, diversity, & inclusion (EDI), building leaders, & spreading FIRST locally, at the state level with IL FIRST Robotics Day, as well as nationally with National FIRST Robotics Day. 2338's pursuit of these goals ensures our entire team is unified showing #FIRSTisforeveryone.

2338 starts each year with our EDI Workshop: a program that we developed in 2021. This year we incorporated hands-on experiences by creating an interactive presentation. Students worked through their misconceptions & bias by learning together what EDI is. This step allowed students to understand the differences between equity vs. equality, diversity vs. separation, & inclusion vs. overlooking. We commit to achieve 100% participation in workshops that focus on these important topics. 2338 is dedicated to educating members about equity, diversity, & inclusion which strengthens our commitment to our mission, #FIRSTisforeveryone.

Next, our students enroll in 2338 University. This student-taught leadership training program was developed by our team in 2014 and updated in 2022 to include a 7-week program focusing on different styles of leadership & empowering students to take initiative. This training prepares students for projects they will work on throughout the year, whether it be in the shop or in day-to-day life. One of our members, Ruth, developed the confidence to manage group projects at school because she discovered the leadership style that worked for her through this course. This year, as part of 2338 University, we introduced a preseason game that gives members new opportunities to lead. We divided our team into groups, each having a mix of new & veteran members. This game evolved from last year's electrical training & now focuses on building robots as well as developing leadership skills on the team.

2338's initial two courses provided us with a foundation for our Diversity Committee members to discuss ideas on how to improve EDI & reach underrepresented students with FIRST. This committee ensures that students of all backgrounds are empowered with a voice on our team & have the opportunity to tell their stories. Different perspectives help us understand our members' backgrounds & how we can remove barriers. When 2338 discovered an elementary school lost funding for hands-on science kits, we saw an opportunity to increase equity by supplying them with monthly STEM Kits. Every month, we design, assemble, & deliver over 130 kits to an underserved school in our district. Each month debuts a new activity, increasing exposure to different concepts. These kits include instructions in both English & Spanish to allow the 62% of Spanish speaking students to engage in learning. In the last 3 years, 2338 has raised \$4,500 in grant money to provide nearly 4,000 hands-on STEM Kits, free for schools. We work to remove other barriers for these students by also hosting an FLL camp at their school, allowing for everyone to attend regardless of access to transportation. With these barriers removed, 2338's next step in improving access for these students is already in the works, raising money to start two FLL Challenge teams at this school for the 2023 season, bringing FIRST to them.

Furthering our equity plan, 2338 collaborates with our Special Education Department (SPED) to show this underrepresented group that #FIRSTisforeveryone with our program called "Garret's Friends." Garrett, our team's mascot, is a welcoming friend for younger children at the programs we facilitate within the SPED classes. Our adaptive toy program; focuses on increasing the usability of toys through the addition of an 'easy activation' button. 2338 has collected & adapted over 100 toys since 2019. Adapted toys also help kids with limited mobility learn concepts such as cause & effect, paving the way

for future independence such as operating a motorized wheelchair. Their teachers have reported that interacting with these toys keeps students engaged & excited to learn. We utilize skills learned on 2338 to increase inclusion in gym class with a device we built called, the Community Helping Utility Companion for Kickball (CHUCK). CHUCK gives a student in a wheelchair an opportunity to actively participate in gym for the first time. This year we were able to raise \$1,500 to supply three new schools with a CHUCK. We are focused on building a culture of inclusivity and accessibility within the community. 2338 had the opportunity to showcase these outreach initiatives on Chicago's own WGN Evening News in May 2022. We reached over 700,000 households- showing them what FIRST can do for students and beyond.

2338 also shared what FIRST can do with our longtime supporter, Congressperson Bill Foster. He was our guest at the Midwest Regional, in 2020, where he was able to see first-hand the impact FIRST has. 2338 presented Representative Foster with a proposal for a National FIRST Robotics Day bill which he introduced in Congress as House Resolution 259. Celebrated annually on the 3rd Friday of March, this holiday will recognize FIRST's impact on students- it encourages state & local agencies to fund after-school robotics programs using \$1.17B from the Every Student Succeeds Act. 2338 is collaborating with other teams to pass this resolution by demonstrating how they can contact their representatives to be a co-sponsor. To recognize FIRST locally, we worked with State Representative Stephanie Kifowit to pass IL FIRST Robotics day legislation- House Resolution 564. Our members testified to the State of IL Government Administration Committee in 2022. After explaining FIRST's purpose & mission, the committee voted unanimously to pass the Resolution. To celebrate the day, 2338 creates grade-specific FIRST Robotics Day resources for teachers that contain STEM related activities highlighting FIRST & show how to start a team. Since 2022, IL school districts have utilized our resources, sharing photos with #FIRSTisforeveryone on social media generating over 200K impressions. This year, in addition to sending out new resources, 2338 is promoting FIRST at an expo in our district to show all levels of FIRST. This event features hands on STEM activities, presentations on FIRST & information on how to join & start a team.

2338 started a Women Who STEM program to foster diversity on our team & beyond. Our monthly meetings feature people in the STEM field- providing a window into a world where engineers look like them. During these discussions, participants & allies are able to support each other as they talk about barriers, how to overcome them, as well as educate members about opportunities. It encourages involvement, helping to increase diversity & inclusion in 2338 & in STEM. We reach younger girls with STEM by hosting three free events. Our Girls Who STEM Winter camp for grades 3-5 keeps girls engaged in STEM outside of the classroom setting. The next two events are geared specifically to Girl Scouts- helping them receive a Robotics badge. At these events, girls come to our shop & we teach them how to drive the robot, work with tools, & introduce them to FLL. These events help introduce young girls to FIRST. Our initiatives empower women in FIRST & show #FIRSTisforeveryone.

In 2338, we value service to FIRST as our team hosts & runs FLL qualifiers to support IL FLL. During COVID, 2338 created training information for FIRST LEGO League Program Director at FIRST Illinois Robotics, Sara Lubic, teaching coaches how to run an FLL team remotely. This format allowed kids to continue to participate in FIRST during a tough time. 2338 supports schools in our district by starting & mentoring 13 FLL teams- bringing FIRST to every student. 2338 has raised \$12,150 to make joining FLL free- removing financial barriers.

As part of 2338's service to FIRST, we support FRC teams by sharing our training, mentoring teams,

being an official Kickoff location, & hosting annual scrimmages like our Week Zero Warmup (W0W). At W0W, teams have the chance to drive together on a full field with elements for the first time. We provide a robot inspector, 2338 alumni & mentors to troubleshoot challenges with teams. During the event, we host workshops such as Women Who STEM & scouting training where we debut this year's scouting app, Gear Scout. After seeing the positive impact our Women Who STEM has had through social media, team 1625, Winnovation, reached out for assistance on promoting diversity. We shared our materials & ideas on ways to reach underrepresented groups in their community. Our team shares all of our training materials & resources on our website- allowing all teams access to our resources. Additionally, last year we mentored team 8880 through their rookie season by providing weekly meetings where they discussed issues. We provided mentorship- sharing our experiences with strategy, mechanical & electrical to them as they faced challenges during their first season. This year we are continuing to mentor them & have created a discord-server where our members can discuss strategy for Charged Up & answer questions as they arise. Through mentorship & assisting teams in the FIRST community, we are able to spread our mission that #FIRSTisforeveryone.

As team 2338: Gear it Forward grows, so does our ability to impact our community & spread FIRST. Every member does their part, uses their talent, knowledge, & passion to better the community. Gear it Forward is proud to show how #FIRSTisforeveryone as we break down the barriers that have excluded students from STEM, allowing diverse backgrounds, languages, & genders to have their voices heard. ;

