

Chairman's Award - Team 2338

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2022 - Team 2338

Team Number

2338

Team Nickname

Gear It Forward

Team Location

Oswego, Illinois - USA

Describe the impact of the *FIRST* 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 *FIRST* programs as mentors/sponsors.

2338 is creating lifelong learners. Due to participation in FIRST alumni have received scholarships, allowing them to study STEM in college. At our kickoff event, two of our alumni spoke about internships they received at Caterpillar (CAT), because of the experience they gained from 2338. Alumni begin giving back at graduation by becoming FTC roving mentors, mentoring FRC while in college, participating in Robot in 3 days, volunteering at events, & coming back to mentor 2338 after college.

Describe your community along with how your team addresses its unique opportunities and circumstances.

Over 2,000 students in our district have a disability. 2338's motto #FIRSTisforeveryone includes these students & integrates them into our robotics family. We introduce them to FIRST with classroom visits, leading team building activities & showcasing robots. Our open house & parent meetings provide shop tours, robot demos, & tool training. 2338 uses accommodations which includes communicating through Ipads & having a parent or aid during practices, which helps them find their place on the team.

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?

Our FIRST Robotics Day initiatives seek to strengthen funding to support after school robotics programs & encourage schools & educators to celebrate the day with activities that teach students about robotics & engage them in STEM. We provide resources that include grade specific learning activities & information about FIRST, which are emailed to schools across IL. Photos of activities posted using #FIRSTisforeveryone are entered into a raffle & are tracked to reveal our engagement.

Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.

Mentoring girls is a priority to 2338. We ran a Girls Who STEM camp during winter break teaching them about power tools & programming a robot, while learning about FIRST's mission & core values in the process. This along with our Girl Scout Workshop is growing female involvement on our FLL, FTC, & FRC teams. 2338 has female members at outreach events to show girls that they have a place on our team. These events show our community what FIRST has to offer women.

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

Gear Scout, our web based scouting app, is translated into Spanish, French, & Hindi for international teams at competitions to collect game data. Our Week Zero Warm up is held to assist teams without access to a field. There they receive in person help to troubleshoot problems. 2338 mentors rookie team 8880 with weekly calls, a discord chat & sharing our training slides. 2338 raised \$18,795 in grants to start, fund, & mentor 13 FLL teams & 5 FTC over the past 2 years 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 packages nearly 1,000 STEM kits each year for 4th graders at a Title 1 school in our district. Due to a lack of funding this school has cut hands-on learning experiences for students. Our STEM kits give students the opportunity to make discoveries on their own enhancing their critical thinking skills. The teachers have reported that these kits are helping students learn English & improving classroom engagement. We introduced these students to FIRST & started an FLL team for them to join.

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's has grown our relationship with US Representative Foster into a partnership, allowing us to introduce him to FIRST. We grew this relationship by inviting him to our events, showing him the impact of FIRST. National FIRST Robotics Day, H. Res 259, is introducing other Representatives to FIRST. These policy makers are making changes in their district through H. Res 259 by committing that the federal government makes hands-on STEM a true priority by unlocking increased funding.

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

Our STEM kits promote equity by giving equal opportunity for underrepresented students to gain a strong understanding of STEM principles. We support diversity through our Women Who STEM group which provides a space for young women to find their voice, while promoting STEM to young girls by holding events such as our Girls Who STEM winter camp. Our Garrett's Friends program reaches students of all abilities showing them they fit on our teams, proving that #FIRSTisforeverone.

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

2338 creates a culture of giving back. This starts with our alumni who come back for kick off, competitions, & mentoring 2338 through the build season. 2338 students give back by mentoring our FLL & FTC teams, showing these students what they are capable of by progressing through FIRST. Our gear up program provides 8th grade students the opportunity to shadow 2338, learning mechanical, programming, electrical, & our outreach initiatives to ensure that 2338 & our programs continue to run.

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

We offer our stakeholders various sponsor packages with different rewards such as their logo on our robot & promoting them on social media. We recently recruited Representative Stephanie Kifowit as she donates her time to sponsor H Res 564 as well as being a speaker for our events. Our founding sponsor CAT, provides us with experienced mentors & a keynote speaker at our annual kick-off event. Women engineers come in to mentor & speak with us at our Women Who STEM meetings.

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

2338 is working to diversify our demographics & be more accessible to Spanish speakers as 22% of students in our district are English learners. We are getting FLL teams in schools with high percentages of English learners by first introducing these students to FLL with STEM kits & then providing them a place to join a team. We are also targeting girls at a younger age through our Girls Who STEM camp, encouraging them to continue with STEM & robotics, working their way through our programs.

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

2338's motto, #FIRSTisforeverone drives us forward as we work to promote FIRST to our community. We allow everyone access to our FIRST teams with no fee or application process. In our program, 8th grade students can move up to FTC allowing them to work together in smaller teams & develop skills before moving to FRC. We promote FIRST robotics in our school district by starting & mentoring FIRST teams at our 5 junior highs ensuring sustainability.

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 builds more than a robot. It is building a workforce with problem solving skills. Leaders are built through our annual

leadership training 2338 University. Students break through the barriers of diversity by translating flyers and STEM kit instructions into Spanish. 2338 develops compassion as they minimize inequality by providing students access to toys & the tools for everyone to participate in their gym class. 2338 is building a family that continues to take care of its community.

Essay

Team 2338 Gear It Forward believes that #FIRSTisforeveryone. We live this mission statement through our two FIRST Robotics Day bills, diversity programs, STEM kits, Women Who STEM group, Garrett's Friends, adaptive toys, leadership development, & our service to FIRST. These eight things are the gears that drive our team forward.

2338 is gearing up to show our community, state, & nation that #FIRSTisforeveryone through our FIRST Day Bills. Our team had the idea to recognize the third Friday of March as FIRST Robotics Day, to represent FIRST's founding day. This day recognizes FIRST, promotes STEM learning, & encourages state & local agencies to fund after school robotics programs. We worked with IL Representative Stephanie Kifowit on House Resolution 564 for an IL FIRST Robotics Day. In January 2022, 2338 members testified in front of a State of IL Government Administration Committee to discuss the importance of H. Res. 564 & the impact that FIRST has on us. After our testimony the committee voted to support the bill, moving it to the IL house floor to be passed. We also worked with US Representative Bill Foster to create a national bill, H. Res. 259. We built a relationship with Bill Foster & introduced the Congressman to FIRST by inviting him to 2338 events & hosting him as our guest at the 2019 & 2020 Midwest Regionals. Once H. Res. 259 was introduced to the House of Representatives, the next step was to gather co-signers. Our team determined that it would be more meaningful for the Representatives if they were asked by their constituents to co-sign the bill. To accomplish this in 2021, we met with teams in a virtual town hall meeting where they could ask Rep. Foster about the impact of the bill. To promote the bills & spread the word about the FIRST programs, 2338 spoke with the IL School Board of Education in the spring of 2021. Here we talked about the importance of students participating on FIRST teams & their impact. Through this, 2338 was able to spread the word to educators about IL FIRST Robotics Day & share our FIRST Robotics Day resource which provides k-12 teachers with information about FIRST & activities about robotics. With state & national recognition, 2338 promotes & celebrates FIRST in our community & beyond.

Each gear of Equity, Diversity, & Inclusion works together to allow 2338 to become a more inclusive program. This year 100% of our team completed the FIRST Equity, Diversity, & Inclusion (EDI) training. 2338's student EDI board meets monthly to plan ways to reach underrepresented communities. Initiatives to come out of this board are our STEM kits, Women Who STEM, & Garrett's Friends program. These gears help show students in underrepresented communities not only that they have a place as part of the 2338 family but that #FIRSTisforeveryone.

The gears of EDI have driven us to create & donate monthly STEM kits. Nearly 1,000 are delivered each school year to support 4th grade students at a Title 1 school in our community engaging them in STEM. Each monthly kit includes the needed materials & instructions in English & Spanish as this allows English learners & their parents to be involved. Pictures included in the instructions help students visualize the steps & associate the English words to the actions. 2338 also creates an instructional video that walks the students step by step through the activity. These STEM kits provide students hands-on learning experiences that they had been missing due to budget cuts. Not only do these kits enrich STEM learning, but they help bring an underrepresented community to our FLL program. After their newfound excitement for STEM they join our FLL teams in 5th grade, continuing through middle school before joining FRC due to one small, but impactful activity.

2338 uses the gear of diversity to spread #FIRSTisforeveryone through our Women Who STEM group. Our team started this group, bringing in female industry professionals to talk to our group about their journey & experiences in STEM fields. Our goal is to empower young women with the knowledge that a STEM career is for them. As part of this initiative, 2338 held a Girl Scout workshop to show Scouts our shop, teach them to use power tools, & introduce them to our FLL programs. In 2021, due to Covid, we packed 200 STEM kits for Scouts to pick up for an online event. 2338 walked the Scouts through creating these kits while learning STEM principles along the way. This year we held a free Girls Who STEM camp over winter break for all girls grades 3-5. Having an event open to all girls allowed us to broaden our reach. The young women in 2338 are modeling to the girls in our community how their unique experiences are creating changes in STEM & showing that they make a difference in the FIRST programs.

2338's Garrett's Friends program is what we call the work we do with our Special Education Department (SPED). Through this program our team mascot, Garrett, with the help of our members, introduces students to FIRST. Garrett's approachable demeanor creates a welcoming friend for students to learn with. He invited the students in SPED to an open house at our shop where we gave a tour, showed how to drive a robot, & explained how to join our team. Moreover, we attend the department's events, visit their classrooms, & attend parent groups to talk about what FIRST has to offer their children. Through Garrett's Friends, we founded our Adaptive Technology Program. Through this program we have adapted 75 toys, since 2019, by soldering on an easy to press button, enabling students with limited mobility to play just as their peers are able to do. In 2021, 2338 raised \$1,000 to design & build an adaptive ball throwing device, or Community-Helping Utility Companion for Kickball (CHUCK). CHUCK assists students by simulating throwing/kicking a ball, allowing gym classes to be inclusive. 2338 shows the students that they are a part of our robotics family & we prove that #FIRSTisforeveryone.

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One of our core gears is leadership. 2338 has made leadership development a priority since we founded 2338 University in 2014. This yearly training is run by our student leadership team, with 72% of our team taking part in the curriculum this year. It is important that our student leaders run 2338 University because it gives them valuable leadership experience & allows our team to learn from their modeling. Throughout our 7 week training course, students learn about different styles of leadership, practice them through activities, & spend the week finding ways to implement what they learned. The 2338 University leadership development program has led 2338 to adopt a leadership structure that follows a business model where our mentors & student leadership team plan the season, outreach events, & training. Then the student leaders relay the information to our six subteams, which represent departments that each have training, workflows, & deadlines. This helps our team run more efficiently & encourages students to step up & lead projects, creating strong future leaders for the team.

Service to FIRST is 2338's final gear. Our team has a history of volunteering at events as well as running FLL qualifiers & FTC league meets. In 2020, we created materials for coaches about the basics of remotely running an FLL team for Sara Lubic, the head of IL FLL. 2338 filled a Google drive with information & materials explaining each part of the program & how to effectively run their team online. 2338 has started & mentored 13 FLL teams over the last two years, providing FLL to everyone in our district. 2338 raised \$15,595 to fund these teams, making them free for students to join. 2338 builds relationships with these students to give them the opportunity to progress through our FIRST programs.

The service to FIRST gear does not stop at FLL. 2338 started & mentors 5 FTC teams. Students learn how to use tools, program, & wire robots while on smaller teams, allowing each student to gain experience before joining FRC. 2338 hosts an annual FRC kickoff event, which became an official IL FIRST kickoff location in 2022. We welcomed teams from the Chicago kickoff when their venue canceled last minute. At this event we met members from rookie team 8880 inviting them to read through the manual & began to strategize for Rapid React with us. In our first steps mentoring them we set up a weekly video call & discord chat where they could get answers to problems. 2338's team members shared their experiences in FIRST helping prepare 8880 for competition. 2338's longest running event is our Week Zero Warmup (WOW), a scrimmage to prepare FRC teams for competition. WOW offers a full practice field with field elements, official FIRST robot inspectors, & collaborative space for 2338 members, mentors, & alumni to help teams strategize & problem solve. Our scouting team assists other teams with a presentation about how to effectively scout & introduces them to our Gear Scout app at this event. WOW also serves as a showcase for FIRST to the community with over 1,500 attendees in 2019 & 2020. Our 2022 WOW event is scheduled for 2/19 & even with COVID restrictions we have found a way to continue this tradition.

These eight gears that keep 2338 moving forward are providing results. In 2021 we grew by 106% with 32% of our members speaking a second language at home & increased female involvement to 29%. EDI initiatives have made 2338 a safe place for students regardless of pronouns, found accommodations for students with disabilities, & we removed financial barriers to open up doors to allow participation in FIRST for all of our school district.

Gear It Forward is more than an FRC team from Oswego, IL; it is a family where everyone is a gear that keeps us moving forward. Our team continues to work & promote STEM & FIRST to change the lives of every student just as they have ours. 2338 Gear It Forward demonstrates that #FIRSTisforeveryone regardless of their language, background, or gender.