

Our mission is to broaden STEAM access to guarantee the future of FIRST, consequently changing our culture to value STEAM. Our students are leaders who drive team growth and sustainability while empowering and engaging our community.

### **WE CULTIVATE EFFECTIVE STUDENT LEADERSHIP TO SUSTAIN OUR TEAM**

Our team culture embraces student ideas and passions, making us more invested in 1511's success. These ideas lead to new initiatives and continuous improvement of our signature events that evolve 1511 into a model of sustainability.

Starting with a student idea, and ending with real results, this year our team created the inaugural NY State STEAM Day on 11/8/22 and a corresponding District-wide STEAM Week. We gave interactive STEAM presentations with robot demos to 2,037 students at our 4 grade schools. Students dressed up as their favorite STEAM heroes all week. We also distributed STEAM kits, which the District agreed to purchase after 2 new students pitched the idea. We proved that STEAM is for everyone, regardless of background or identity.

To increase equity and access to STEAM across our District, we established a relationship with our new Diversity, Equity & Inclusion Supervisor. This led to a new connection with 6 of our school's clubs to include the entire spectrum of STEAM. We partnered with them to promote our message with posters about minorities in STEAM, hall decorations and live performances during our robot demo. This resulted in new students at our meetings!

We spread STEAM spirit beyond Penfield by donating 10 NXT kits and 2 field kits to Rochester City School 45 to be used in their classrooms. To reach a broader audience, we had STEAM book displays in the front of Barnes & Noble and our public library. To wrap up STEAM Week, we showcased FIRST to 1500 3rd-8th graders from 70 schools at Rochester STEAM Fest!

To make our events sustainable, we document the process to be replicated and improved upon. Veteran students train and mentor new students to develop their leadership style and skills. Summer projects, like a T-shirt shooting robot, sharpen our skills and integrate new students before the school year. ThunderTech, our proven fall curriculum, preps students for Build Season by teaching CAD, shop safety and the Engineering Design Process. It also includes 7 technical & nontechnical weekly subteams where students explore all things 1511!

One of 1511's core values is for every student to have the opportunity to experience FIRST to its fullest. Our unique Achievement System allows us to reduce competition costs by completing tasks like organizing outreach events or fundraisers and attending weekly meetings. This enables every 1511 student to compete without financial worry.

1511 is a team fueled by its student leaders. We turn EVERY student into an effective leader before they leave the team. Students join 1511 to build robots; they stay because of the impact they make on their community and themselves.

### **WE ENSURE FIRST'S SUCCESS BY EMPOWERING TEAM GROWTH & SUSTAINABILITY**

We sustain FIRST globally by helping teams around the world, 20 countries so far! In the last 3 years, we assisted 87 FRC teams, mentoring 10. We mentored Team Seychelles in the FIRST Global Challenge the last 2 years, helped Brazilian team 1156 reassemble their robot for competition, and assisted Turkish team 6838 on robot design and outreach. In January, we donated 28 NXT kits and our STEAM curriculum to FRC3015 that they used at a South African school.

As part of FIRST's Open Alliance, we share all our resources with everyone. In January, FRC teams 4400, 1868 & 1156 asked us to present on Team Sustainability for teams worldwide. We have 6 resources in the FIRST Fundraising Toolkit, leadership training on our website, a team wiki with our designs and a FIRST Updates Now "Behind the Bumpers" video. We've been a control systems beta test team for 12 years. At Champs & Regionals we present on leadership and STEAM advocacy. We've hosted Chairman's & Leadership Boot Camps to strengthen local teams. We provide all attendees our materials so that they can develop their own leaders, run their own camps and advocate locally.

Our extensive advocacy training program provides teams the tools, training and a path to enact change. We presented at Virtual National Advocacy Conf. (NAC) 2020 & 2021 and 2468's STEM Advocacy Conf. of TX 2020. Using our framework for our NY Advocacy Conference (NYAC), we helped FRC2412 start their own WA state advocacy conference. This year, we held our 3rd NYAC and grew it from a one-day training to a multi-day, multimedia event with a confirmed, in-person State Capitol demo in May 2023. We make a bigger impact when we unite all NY teams behind a common goal.

1511 keeps FIRST teams active year-round! We've been improving our signature events for at least 18 years. Rally is a pre-competition scrimmage for local teams to test and improve their robots before competition. We host All-Rookie Meet & Greet at Champs to provide rookies with sustainability tools. Our offseason event, Ruckus, has grown from 15 teams in a gym to 36 teams in a concert venue. FRC4039 and FRC3044 used our Ruckus resources as a model for their offseason events. FRC4039: "As usual, everyone at Ruckus made us feel welcome. The event ran smoothly and teams had a great time. For our team, it was an excellent opportunity to indoctrinate our new students and to give them a chance to try out new roles at an event."

We help FIRST create a strong foundation by getting kids as excited about FIRST as we are. In the last 3 years, we started 38 FLL/FTC teams, mentoring 26 at our weekly help sessions. We created teams at all Penfield schools and many in the community that included homeschoolers. Last year, we partnered with our Rec Dept. to start FLL Explore/Discover and we mentored 9 teams weekly in the fall. This past March, we ran a weekly after-school program for 3rd-5th graders, and we're scheduled to do it this year. Our 4 FLL summer camps are low cost and spread across Rochester to bring FIRST to underserved & refugee kids. This year, we recruited 2 female 1511 members from these camps! We're actively inspiring females to pursue STEAM

through our Girl Scout Badge Trainings where they earn all 3 robotics badges. We've mentored FTC6996 since 2013 and 73% of their members have moved on to 1511.

This year, we ran our first FLL Kickoff with 14 teams, where we taught them the new game, and presented on programming, judging and the Innovation Challenge, to start them strong. We mentored 11 of these teams for the remainder of the season. We've run the Penfield FLL Qualifier since 2014 and the FTC Qualifier since 2013. Our FIRST Grant Program awards funding for T-shirts, kits, game fields and travel to support teams and to ensure FIRST's success at all levels, \$12,900 in the last 3 years!

### **WE ESTABLISH AND MAINTAIN PARTNERSHIPS TO CREATE INCLUSIVE STEAM OPPORTUNITIES**

1511's long history with lobbying has created vital relationships that turn our representatives into champions of FIRST and STEAM. Our work with Rep. Lunsford over the past 2 years led to Nov. 8 being declared NYS STEAM Day and the introduction of NYS Bills A3445 and S1576 that allocate \$250k to start and sustain FIRST teams in Title 1 NYS schools.

In the last 2 years we maximized our impact by partnering with the Student Association for STEM Advocacy (SASA). In our 9th trip to NAC, we lobbied for the CHIPS Act, which promotes more STEM jobs in the U.S., and it passed! Two days after our meetings, they passed an increase of \$100M for ESSA for 2023, totaling over \$1 Billion! NAC & SASA founder Steve Hyer, "1511 is an integral piece in building a coordinated STEM advocacy effort and they serve as a mentor and leader to teams across the United States."

We recognize that access to STEAM is important and want others to have the same. Last fall, we soldered 37 devices for visually-impaired people to experience the 2024 total solar eclipse via sound. We've introduced STEAM to underserved and refugee communities with EV3 robot programming and simple machine projects. We donate STEM kits along with commonly needed supplies (like 23,500 pairs of socks!) to under-resourced children and most recently, 2500 pairs of socks to Ukrainian refugee families.

This year, we forged strong partnerships to make STEAM more accessible. At Big Brothers Big Sisters (BBBS) we taught kids to drive our robot, program EV3s and make STEAM crafts. We were their first event since COVID. Through BBBS, we connected with Children Awaiting Parents, a local foster organization, to bring STEAM to them. Their manager, "The experience was so great it made me reach out to my daughter's school to ensure that she is signed up for their STEM program." At Penfield Library we started Books and Bots, a storytime/robot demo for kids pre-K to 3rd grade. After holding 3 more Books and Bots events, the library purchased OzoBots to grow our program and allow kids to explore STEAM in more interactive ways. This year, we expanded the program with a new partnership with Barnes & Noble!

Large community events like our NYS Fair FIRST Demo, Red Wings Baseball Game Demo and FIRST Exhibit at the Rochester Maker Faire help us bring FIRST to new and broader audiences.

Our most unique, student-created event is the Grateful Red Music Fest. This year was bigger and better with more robots, food trucks and bands, a larger Kids' Zone, twice as many attendees, and we raised \$1000 more for Ronald McDonald House. It's another way we bring our community together to celebrate STEAM!

### **WE ARE CHAMPIONS OF FIRST**

When we motivate others to join FIRST's mission, and empower students to be STEAM leaders, it changes our culture. We've seen this culture change in our community through our partnerships that invest in 1511 and FIRST. We include other FIRST teams in our mission to make a bigger impact. With everything we do, the Thunder just keeps getting louder!