FIRST Impact Award - Team 3794

2025 - Team 3794

Team Number

3794

Team Nickname

Prepa Tecmilenio WinT

Team Location

METEPEC, MEX - Mexico

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.

Over the past three years, 100% of our members apply to STEAM career, with 85% enrolling in STEM programs at prestigious universities. 40% take on leadership roles in FIRST or technology industries, and 25% return as mentors or volunteers in FIRST. Our team fosters skills such as teamwork, leadership, and problem-solving, reinforcing the values of Gracious Professionalism and Coopertition in every generation.

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.

Situated in the State of Mexico, our community in Toluca and Metepec champions STEAM as a driver for innovation and growth. In Toluca, nearly 65% of young adults pursue higher education, with 60% of teachers trained in modern pedagogies. Metepec, has over 30% of secondary schools offering robotics programs. Despite these gains, STEAM access remains uneven, spurring targeted efforts to expand STEAM programs to underserved sectors.

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.

We implement modular educational programs, from basic robotics to artificial intelligence, and replicable methodologies like LBG in underprivileged schools. We create alliances with universities and companies such as Tecmilenio, KidZania México and BAMX EDOMEX to expand FIRST in our region. We promote Gracious Professionalism in underserved communities like Villa Victoria, el Rincon, and El Atole ensuring that STEAM inspiration reaches new generations in a self-sustaining manner.

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

Our goal is to democratize access to STEAM through accessible education and social inclusion. In three years, we have reached over 3,000 students in hands-on workshops, while also collaborating in regional events. Additionally, we promote gender equity in STEAM, achieving 60% female participation on our team and fostering spaces where everyone can develop their potential without barriers.

What impact has your team seen from your efforts described in the above question? How does your team measure impact?

We have seen a 70% increase in youth interest in STEAM, measured through surveys and event participation, positively impacting over 600 families in our community and engaging 420 of them in our school's STEAM activities.

More than 60% of workshop participants have considered STEAM careers, proving the success of our initiatives. Additionally, 100% of the teams we have mentored remain active, demonstrating the sustainability and effectiveness of our mission aligned with FIRST values.

Please provide specific examples of how your team and team members act as role models within the *FIRST* community with emphasis on the past 3 years. How do you share these best practices with other teams?

Our team leads initiatives like Robotics Without Borders, a mentorship program supporting teams across our country and worldwide, through community improvement on sustainability, circular economy, and STEAM expansion proposals, impacting 240 members. Our members represent FIRST in national forums, sharing experiences with the STEAM community, reaching 2k people. Participation in conferences and social media amplifies our impact, making us a reference in applying Core Values in all activities.

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

We have mentored 13 teams across all three FIRST categories in Mexico and 6 other countries, ensuring their sustainable growth. We provide access to materials, programming, mechanical training and strategic support, totaling +450 hours. Additionally, we developed replicable manuals: Inclusive Leadership, Women Empowerment, and MakerPet; fostering networking to strengthen the global FIRST community, our mentorship is rooted in Coopertition, encouraging collaboration for long-term success.

What other initiatives have you created, grown, sustained, or participated in (*FIRST* 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?

We offered workshops for children in rural areas with limited tech access and developed free online courses with 1,500+ participants. Partnering with Oracle, we launched a programming challenge with 1,500+ students. We introduced RoboCrea, a kit for young children that includes mechanical design and programming concepts. We also partnered with Quetzales at Playa El Progreso, collecting PET waste to create 3D printer l.filament.

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.

We collaborate with 15 universities, companies and governments such as Tramontina, Bocar, Oracle, Magna, AMANC, ITAM, IMEDIS and more, to ensure FIRST's growth. We partner with academic institutions that provide training spaces, while technology sponsors support us with essential resources for events. In the government sector, we have developed 5 educational initiatives for STEM inclusion. These partnerships have enabled more youth to access FIRST, strengthening our long-term mission.

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

Our team promotes inclusion through gender equality, achieving over 60% female representation in technical and leadership roles. We adapt programs for communities facing linguistic, physical and socioeconomic barriers, ensuring equal access to STEM. We created Learning manuals with Braille and a superhero-themed prosthetic hand with IMEDIS, impacting 150 children with disabilities.

Explain how you ensure your team and the initiatives you have created will be sustainable.

We ensure sustainability through leadership training, transferring knowledge across generations. We diversify funding sources through sponsorships, grants, and community events. Additionally, we document strategies in a team management handbook, facilitating the continuity of key programs. Thanks to this structure, we guarantee that our impact extends beyond each generation of members.

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

We aim to improve our impact measurement strategies to better evaluate our initiatives. We are implementing detailed post-event surveys and collecting long-term participant tracking data. Additionally, we seek to expand our sponsor network to improve infrastructure and resources. These improvements will ensure that our growth and contribution to the FIRST ecosystem are more eective and measurable.

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, particularly noteworthy, or had a large impact.

We developed an accessible robot programming simulator, allowing youth without access to hardware to learn coding. This resource has been adopted by several schools in our region. We have also been Dean's List Award Finalists, highlighting individual leadership within FIRST. Our vision is not only to compete but to transform the community, aligning every action with FIRST values and global STEM education.

Judge Feedback

This team did not submit the optional question for the judges when entering their submission.

An area the team has an opportunity to improve.

Something that really impressed the judges.

Essay

Throughout its 15-year journey, WinT 3794 has demonstrated that FIRST is much more than a competition; it is a transformative platform that drives science, technology, and leadership to build an inclusive and sustainable future. From its inception, this team has been committed to democratizing access to STEAM education, eliminating socioeconomic barriers, and fostering a passion for knowledge, ensuring that every robot built and every initiative undertaken embodies FIRST's Core Values: Gracious Professionalism and Coopertition. This commitment translates into high-impact projects that have transformed the lives of thousands of young people, turning them into leaders, innovators, and agents of change.Our mission is clear: to extend STEAM opportunities to every corner of the community—from schools in underprivileged areas to strategic alliances with prestigious institutions. With modular programs in robotics, mechanics, programming, and engineering, we have enabled thousands of students to acquire technical knowledge and develop essential soft skills to face the challenges of the 21st century. In this way, WinT 3794 not only forms future engineers and scientists but also nurtures citizens committed to social change.To celebrate this legacy and look to the future, we organized a grand 15th Anniversary Gala that will bring together more than 500 alumni from different generations of the team. This event will not only be a celebration but also a generational journey showcasing the evolution and achievements of every member, solidifying the transformative impact that our community has generated over the years. Our "ALUMINS" will witness and actively participate in the history of WinT 3794, demonstrating that every step taken translates into a legacy of passion and perseverance.The innovative spirit of WinT 3794 is reflected in every challenge we propose. In line with this, we launched a Programming Challenge in partnership with ORACLE ACADEMY, in which more than 1,500 students will join forces to solve technological problems that positively impact their communities. This challenge, focused on developing applications or websites that improve quality of life, opens the door to new generations who will discover the STEAM world, transforming how technology is used to generate real-world solutions.Breaking boundaries is an essential part of our philosophy. Therefore, together with international teams such as Robotigers 1796, Paraducks 9609, Tubitech 9694, Robotics 2637, Strike 6902, and Torbotics 2080, we have developed community improvement proposals in more than six countries. These initiatives, aimed at sustainability and circular economy, have increased the recycling of disposable resources by 33%, repurposing waste to create filament for 3D printers. Additionally, our "MakerPet"

manual has been replicated in the United States and Brazil, proving that environmental commitment and innovation can work hand in hand to transform communities.The reach of WinT 3794 also extends to educational settings. We have established partnerships with institutions such as Tecmilenio, KidZania México, Colegio Buena Tierra, and CEPAVAT, bringing the STEAM experience to hundreds of children. At Colegio Buena Tierra, for example, we have organized interactive activities that foster critical thinking, teamwork, and an understanding of engineering principles, sparking the interest of more than 50 students in the sciences. Similarly, at KidZania and in the “Esparcir STEAM” program at Colegio Buena Tierra, we have implemented educational initiatives that integrate technology with playful learning, laying the foundation for a future full of opportunities.The social commitment of WinT 3794 is evident in our mentorship and community development projects. In Ciudad de los Niños y Niñas, we provide mentorship to three FIRST teams (FLL, FTC, and FRC), supporting them in programming, mechanics, and in establishing robust business models. Likewise, we have continuously supported the FLL team Black Rose, offering both monetary and in-kind resources for developing electrical circuits that simulate wind and solar energy, along with teaching programming in C++ and Java and providing training in SolidWorks to develop an augmented reality viewer. This type of support has allowed our students to grow holistically, with one member even choosing to continue their preparatory studies at Tecmilenio, reaffirming the connection between education and the STEAM vocation.Our commitment goes beyond direct mentorship; we have offered over 450 hours of in-person and virtual mentoring to teams such as Deros 8748, Faraday 5696, Earth Puebla 4723, Vitronik, and our own WINT 24356 FTC. Through these sessions, we not only reinforce their knowledge in programming and management but also guide them in embracing FIRST values, ensuring the continuity and sustainability of their projects.In the realm of environmental sustainability, WinT 3794 has proven its ability to turn resources into innovative solutions. At Playa El Progreso in Mérida, in collaboration with the Quetzales team, we organized clean-up campaigns to collect trash and PET, which were then processed to form filament for 3D printers. This initiative not only reduces pollution but also promotes the efficient use of waste and environmental education, extending the STEAM impact to new areas. The creation of the “MakerPet” manual has allowed this methodology to be replicated by teams in the United States and Brazil, broadening the global reach of our sustainable practices.Another significant milestone was the development of a hand prosthesis with a superhero design, aimed at improving the quality of life for more than 150 children with disabilities at the Instituto Mexiquense de la Discapacidad. This project, which combines advanced engineering with a human and creative approach, was implemented alongside STEAM activities that involved the beneficiaries in the process, bolstering their self-esteem and igniting their interest in technology.The social impact of WinT 3794 extends to large-scale solidarity initiatives. With the RETO SOS, launched in conjunction with the Banco del Estado de México, we called on more than 1,500 students to participate in a food drive designed to collect donations for families and communities in need. Additionally, our STEAM visits to the Asociación Mexicana de Ayuda a Niños con Cáncer have allowed 30 children to experience firsthand the transformative power of technology, opening the door to a world of possibilities they had never imagined.WinT 3794’s presence at public events and technology fairs is also a cornerstone of our outreach strategy. At the Technology Fair "Alcancemos las Estrellas", with over 500 attendees, we share our journey, engage the public through robotic demonstrations, and showcase the innovative capacity that defines our team. These events, along with activities such as the Kick OFF FRC Host, the Regional FTC Host, and the Kick OFF FTC Host, consolidate our leadership in the STEAM arena and highlight the enthusiasm our projects inspire in the community.We must also mention the development and distribution of “RoboCrea: A Kit for Mini Engineers.” This kit, which contains all the necessary materials to build a robot from scratch, has been delivered to under-resourced communities like Villa Victoria, where we provided 20 kits. Through this initiative, we aim to ensure that children with limited access to technology can experiment, learn, and dream of a future where engineering becomes part of their daily lives.In addition, we have developed two fundamental manuals: one on inclusive leadership and another on women's empowerment, addressing the knowledge gap on these subjects both within and outside the FIRST community. These manuals, which include Braille versions to guarantee accessibility, offer practical tools and strategies for personal and professional growth, enabling community members to fully harness their skills and potential.WinT 3794’s strategy also includes a constant commitment to spreading and exchanging knowledge. Thanks to our alliance with Mexiquense Radio "Revista MXO" 91.7 FM, we have been able to bring the STEAM philosophy to a wider audience, promoting the importance of science, technology, and innovation across various sectors of society. Furthermore, our engagements with institutions such as Colegio Buena Tierra and the Asociación "Pocas Pulgas" El Rincón have enabled us to improve educational facilities and create community

gardens, generating dynamic spaces for learning and social development.Each of these initiatives is part of an extensive network of strategic collaborations with universities, companies, and educational organizations that have been fundamental in positioning WinT 3794 as a benchmark in the STEAM field both nationally and internationally. Our commitment is reflected in the continuous development of our members, the creation of innovative projects, and our ability to transform lives through technology.In summary, WinT 3794 is much more than a robotics team; it is a community of dreamers, engineers, and change agents who work every day with passion and determination to break down barriers and open pathways toward a future where technology and innovation serve as tools for inclusion, sustainability, and social transformation. With every robot we design, every workshop we conduct, and every alliance we forge, we reaffirm our mission to build a world where STEAM knows no boundaries, and where every young person finds the opportunity to dream, learn, and transform their reality. Today, as we look back at the journey we have charted and envision the new horizons that emerge with projects A model in which every action, every alliance, and every achievement reflects the conviction that STEAM education is the key that opens the doors to the future, and that together, we can build a world filled with innovation, inclusion;