

Our Vision  
1241 Chairman's Essay 2017-18

TEAM 1241: THEORY6 has a clear image for the future of the world around us. This vision has been in the making for the last 15 years, reflecting the stories of 600 teammates, 90 mentors, 17 teachers, and our home, the machine shop. Driven by our passion, we have become the difference makers of today, committed to inspiring the innovators of tomorrow. Using FIRST as an international platform, we are advocating for every individual to have the opportunity to explore STEM as a future pathway. Valuing the importance of reaching STEM equity, we have created sustainable programs surrounding income inequality, cultural barriers, underserved communities, and gender equity. THEORY6 knows no bounds when it comes to spreading this vision of innovation and changing perspectives in order to challenge the status quo.

Supporting Sustainability

Our team's sustainability cycle begins with sponsors and partners, many of whom have been integral to the growth of our team and the larger impact our initiatives make within our communities. To cultivate the increased interest for robotics at our school, we started Team 1285, doubling the leadership opportunities available, and promoting a junior-senior mentorship system within the teams. By partnering with GM Canada, we were able to fund a machine shop at our school, aiding in the development for the first Manufacturing Specialist High Skills Major program, now available at 48 schools, providing students with hands-on learning and certifications recognized by workplaces. By building our partnership with the city, we advocated in bringing Ontario District Championship to the city as well as revealing the power of FIRST to the Peel District School Board. This led to the school board playing a major role in integrating robotics into curriculums, starting 131 FLL and 65 FLL Jr. teams. Using the diverse support that our sponsors and partners equip us with, we are able to reach our mutual goal of developing the next generation of industry leaders.

Incorporating Innovation

Valuing the importance of dedicating our time to share our knowledge and resources with the FIRST community led to our development as the first, FIRST Canada Super Hub. Teams come to us to gain access to facilities, machine and assemble parts, and attain mentor support. We published robot and business resources which have been viewed 15,000 times. They outline every step including design strategy, prototyping process, and team organizational guidelines which should be considered throughout the season to be successful. During competitions, we send out a team who troubleshoot and aid others using our resources, and mobile machine shop, to get their robots competition ready. We are also a part of *FIRST* Help Now, a 24/7 platform used to provide teams worldwide with on-call help during build season. Our efforts have directly assisted 70 *FIRST* teams in the last year. The various streams we are using to provide support to other teams have become an outlet to acquire new skills, and obtain valuable resources in order to reach their fullest potential while helping others reach theirs as well.

We have transformed 12 libraries in Ontario into multi-dimensional learning spaces, helping them create a diverse range of connections within their communities. Our Library Program diversifies the uses of these environments through more interactive, hands-on curriculum and simplified engineering principles, building an understanding of robotics in children aged 5-12. *FIRST* Canada saw the impact of this curriculum on our local community and made it accessible nationally by adding it to their website and providing grants as incentives for libraries to integrate robotics programs. This has allowed us to directly impact and assist 247 *FIRST* teams. We are strengthening communities, engaging the minds of the future and creating a culture shift within libraries.

We acknowledge that individuals deserve to be recognized for their achievements and the vast range of skills they acquire through *FIRST*. We pioneered The Badge Program for students and mentors based on guidelines taken from *FIRST* Canada and the Ministry of Education. This program allows for participants to show evidence of their knowledge and capabilities in the workplace and in post-secondary education. *FIRST* Canada saw the impact and potential of this program, the physical representation of hard-work, adopting it to their organization, impacting over 14,500 participants in the last 4 years. Now, *FIRST* Canada provides a variety of bilingual badges, ranging from participation, safety and EDI (Equity, Diversity & Inclusion). These badges have become a symbol of certification within *FIRST* and is building a bridge from the *FIRST* world to their futures.

### Connecting our Communities

We recognize the challenges families face when integrating into a new country. Using our influence, we created our New to Country (NTC) program which pushes for inclusivity by making the difficult transition easier for newcomers through STEM. We have created handbooks in various languages, partnering with school board settlement workers to outline opportunities available to NTC families in our communities. Our sponsor, Pratt & Whitney Canada connected us with the international organization United Way and their partner, Polycultural Immigrant and Community Services, to hold a series of robotics workshops for newcomer youth. Beginning as a Robotics Day at the Comfort Inn, which grew to a week-long winter camp and expanded into two sets of 10-week workshops at Polycultural. These free workshops provide youth aged 5-14 with the learning tools needed to build and program LEGO robots, with a curriculum designed to accelerate individual growth. To inspire others to spread the impact of this program to their communities, we recruited 5 other FRC teams from 4 cities across Ontario. Learning that STEM is an influential agent for inspiration, the United Way supported our venture of bringing over 100 newcomers to our 2017 District Championship, continuing again in 2018, to lead them into the *FIRST* family. By creating a safe and engaging environment, we have created an influence on 330 newcomers. Our program has come a far way in the mission of becoming a gateway for NTC youth to pursue STEM, as we are turning immigration into integration.

Our team strives to foster an environment where unity is the most important step towards gender equity, within ourselves, community and the world. Starting within our own team, 100% of our girls are involved in both the technical and business aspects. To increase leadership opportunities, we have been competing as an all-girls team at an offseason FRC event for the last 5 years. Bringing this experience beyond *FIRST*, our inaugural Girls in STEM Olympics challenged 50 young minds aged 13-15 around Ontario to develop critical thinking skills through a day of STEM activities. We are empowering girls to break out of their comfort zones, overcome obstacles, and giving them confidence to reach their fullest potential.

### Cross-cultural Collaboration

Our team is a driving force that is bringing STEM and robotics education to an international level through our Beyond Borders program. We have connected with a delegation from Denmark and educational leaders from Singapore to share how they can integrate FIRST into their school curriculums. We have also held online webinars with an ESL class in China where our students used robots to teach mechanisms and electrical systems. Last year, we contacted Glen View High 1 School in Zimbabwe, in order to introduce both them and later, neighbouring schools to technology based programs. Our team sent NXT Lego kits and hold a series of online workshops with the robotics club we helped form. Collaborating with the Women's Transformation Zone of Zimbabwe, to encourage young women with the opportunities to pursue an education which will help overcome the 47% of females who are out of school. This year we established a partnership with Cuso International, a non-profit, to make STEM available to schools in Jamaica and Guyana with resources based off of our developed curriculum and FIRST robotics. In our journey to make the world a smaller place, with new opportunities for all individuals, we are sparking an interest in future STEM leaders.

We have made international inclusivity a collaborative effort as a founding member of The Compass Alliance (TCA). As a group of 10 FRC teams around the world, we are working to tackle FIRST-wide issues including the resource gap amongst teams. This year through TCA, we have expanded the Canadian Super Hub program by recruiting 30 teams across 7 countries (Canada, USA, Mexico, Australia, Israel, the Netherlands, and Poland) to become Hubs. The initial partnership between FIRST Canada and Team 1241, has grown to a global network of machine shops and practice facilities. Beyond Hubs, we have leveraged the expertise of 46 teams contributing to TCA's initiatives, creating a union of teams allied together with a common goal to provide universal support to FIRST Teams.

### Our Vision

*FIRST* provides participants with the ability to create, while Team 1241 extends the *FIRST* family to those beyond the program, by making STEM and robotics education accessible in all-embracing environments. We have been able to shift mindsets through multifaceted learning hubs, encourage progression through *FIRST*, bridge gender gaps, and turn STEM into a pathway for newcomer integration, using it as a universal language to create global leaders. Built on the belief of determination and self-improvement, our vision of reaching STEM equity shines brighter every day as we build on top of the relationships and initiatives we have pioneered. In spite of the barriers we have conquered, we are not yet satisfied and know that tomorrow promises the infinite possibilities for *FIRST* Team 1241 to challenge, as we continue to ask ourselves our driving question, "Who can we impact next?"