

The Universe  
1241 Chairman's Essay 2014-15

Entering our 12th season of the *FIRST* Robotics Competition, THEORY6 is building upon theories that were once just an idea. We believe that by pushing the envelope we are able to help all our team members realize their true potential. Our team is just like the universe as it is constantly changing and expanding, where new things are always being discovered. Similarly, the students on our team are full of great potential that they have yet to discover. Through presentation to communities, teachers and students, we are able to shed lights on opportunities that develop strong leaders. *FIRST* Team 1241 - Team Hansen Experience of Robotics Youth (THEORY6) lives by the philosophy of Rick Hansen "The End is Just the Beginning."

Our team is devoted to developing the leaders of tomorrow. By presenting at parent and student councils at all school levels we show them how they can implement *FIRST* effectively. This has led to a team support system to impact and assist 92 Jr. FLL teams, 18 FLL teams and 20 FRC teams. We have hosted 3 Jr. FLL Expo's, and 4 FLL tournaments in our school. We have volunteered at over 71 community and *FIRST* events in the past three years, and amassed 40,800 service hours. In the last year alone, we have accumulated 14,440 hours. *FIRST* Team 1241 has partnered with the Peel District School Board to help start FLL robotics programs in all elementary schools in our district. We have hosted an event called "Robotics in Your School" where we presented to principals in Peel to show them how they can start up *FIRST* teams in their school. We strive to spread *FIRST* to more members in our community by developing their intelligence, creativity and leadership qualities by giving them the opportunity to experience the essence of *FIRST*.

We strive to be role models that other teams can emulate. We are currently participating in the "walk-in hub" program where any FRC team can drop in for a helping hand in both technical and non-technical aspects of an FRC Team. Four of these Hubs are situated across Ontario which provide teams with resources and information in order for them to be successful. Teams can access these hubs through the *FIRST* Robotics Canada website and directly to our team email (rhssrobotics@hotmail.com). Within the last 3 years, *FIRST* Team 1241 has created a series of how-to videos to provide online mentoring resources on YouTube and the *FIRST* Canada website We have delivered several workshops at the Oakville Robotics Symposium including: Parent Involvement, Rookie Tips, Mechanical Systems, Library and *FIRST* Badge Program and AutoCAD.

*FIRST* Team 1241 empowers members to embrace new initiatives, which enables them to gain skills that accelerate growth while progressing through the evolutionary cycle. The team promotes gender equality, resulting in 50% of the leadership roles being held by female students. By having multiple sub-teams we have broadened the scope of our team to encourage females to join and explore new opportunities. This has led to an increase of active lead female mentors from one to four in the last year. There has been an 11% increase of girls on the team in the last 5 years. Out of these female students, 91% are actively involved on both the robot and non-robot side. As a result, the female members on our team were able to compete at the Bloomfield Hills All Girls Competition in Michigan for the past two years.

This evolutionary cycle promotes the mentoring of students in all *FIRST* programs in Canada. It is completed once a student progresses through Jr. FLL and/or FLL and enters the FRC program and mentors Jr. FLL and FLL teams while taking on leadership roles on an FRC team. Five members on our team have gone through this cycle. This allows our team to create a sustainable system for the STEM curriculum that will build future difference makers. *FIRST* Team 1241 initiated a four year strong National Library Program. By holding year-round free robotics workshops at our City's Central Library for children ages 5-12, we have introduced children to STEM at an early age. This enables us to create resources to spread the program, and *FIRST*, to every library in Canada. We have hosted 2 workshops every week over the course of 36 weeks, for a total of 72 workshops over the course of 4 years. We have contributed 3200 volunteer hours to this initiative. Overall, 1300 children have been impacted by a curriculum that our team developed which is available on the *FIRST* Robotics Canada website. We have provided this for all teams to implement within their community. We have built partnerships between *FIRST* Teams and

their local libraries in 5 different locations in Ontario. The depth of the program has impacted hundreds of children by creating an insatiable drive for STEM education.

Our team promotes diversity through our New to Country Program for immigrant students through peer mentorship. For this program, we have translated our parent handbooks into Arabic and Mandarin to help new immigrants understand *FIRST* Robotics and the structure of the program. This not only benefits students but their parents as well, as newcomers can make connections with other students and parents on teams to gain a sense of Canadian culture and are able to build strong relationships. In the future, we will have the information needed for new immigrants in more languages to promote the culture of *FIRST* even further. We will do this by proposing this initiative to immigration offices, embassies, airports, and Service Ontario. In order to expand our reaches to the international community, we have hosted 4 webinars for ESL students in China to develop a robotics curriculum and to expose them to the basics of STEM. Students were given the opportunity in the 2013 season to develop international relationships by billeting students from Singapore Team 4817 in order to enable them to compete in the Greater Toronto Area.

We have implemented the Badge Program which recognizes and certifies students for the skills they obtain through *FIRST*, that meet the Ministry of Education's curriculum standards. MapleSoft and National Instruments have partnered with our team to create standardized testing methods for the Badge Program as a way of differentiating skills and certification. We are partnered with *FIRST* Canada in order for this program to grow-internationally. Through this partnership, we are very excited to be launching the badge program at the FLL Ontario Provincial Championships to almost 800 students this year. We are also developing a standardized testing and certification model for FRC and FTC students to track and recognize the skills developed by students in the program. Tracking these accomplishments will provide *FIRST* with a database information.

*FIRST* Team 1241 has sought out many opportunities to spread the message of *FIRST* to various communities through social media, showcases, and presentations. THEORY6 has presented our robot at a TEDx conference in 2012, the Ontario Library Association, the Mayor of Mississauga, to the Minister of Science and Technology and Prime Minister Stephen Harper. We have showcased our robotics program at the Sick Kids Hospital, the Ontario Science Centre, Mississauga City Council, Celebration Square and at a STEM related press conference held by IBM for Prime Minister Stephen Harper. We have been on several Canadian television outlets which include Global TV, CP24, Discovery Channel, OMNI News, and Breakfast Television. In addition our team has a great amount of media exposure including over 1100 likes on Facebook, 1100 followers on Twitter and 100 YouTube subscribers. 1241 has been in Mississauga News, Snap News, the Toronto Star, as well as the City of Mississauga's website. Our team actively searches for ways to give back to the community; we have raised money for breast cancer research, collected nonperishable food items for a local food bank, gave a family gifts for Christmas through the Starlight Foundation, and held a yard sale to raise money for cancer research.

*FIRST* Team 1241 has built strong relationships, networks, and a foundation that has a high retention rate. Once students graduate, they are enabled to spread their expertise to other teams. We have a large group of alumni mentors who have branched off to mentor other FRC teams. We have mentors who currently hold key positions on university based committees in order to develop and support regional *FIRST* programs. They co-lead and run regional event planning committees at UOIT, Waterloo and Ryerson University.

Our sponsors support us year round, they include: Pratt and Whitney Canada, General Motors and Templeton and Sons. The long standing partnership with our City Council enables them to work towards getting other city wards to be a part of *FIRST* programs. The strong relationship between team members and sponsors is beneficial both ways; in 2013 we received a practice facility which was pivotal to our success. We assist companies by providing experienced interns who come out of our program and holding showcases to give exposure to STEM at their corporate events. In turn, the sponsors dedicate their time and effort towards our students by acting as mentors and role models. To maintain the strength of our connection, we invite them to our Season's Kick-Off, Bag and Tag event and our annual Spring Banquet where we recognize their contributions and thank them for all of their support throughout the years.

The universe is constantly expanding and changing, new things are always being discovered. In the *FIRST* universe, this is also true. Our universe consists of many galaxies as *FIRST* consists of many teams. Our galaxy consists of many solar systems, as Team 1241 encompasses many initiatives. The

Sun gives Earth life; similarly our students give life to our initiatives. Our most important discoveries are the diverse talents that exist on the team and how those talents strengthen us and in return help make the universe better. Without diversity in the universe and our team, neither of them would be complete.