

Business Plan

Team 5615, Miners RC

October, 2014

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1.0 Executive Summary - Team 5615

Our Mission Statement:

The mission of Team 5615 is to inspire and engage students to learn about science, technology, engineering and mathematics, stay in school, and prepare them to attend post-secondary institutions and/or contribute as members of society and the economy.

Team Information:

BEGINNING:

Our team was started in September 2014 as a team within the Miners RC robotics club, an extracurricular club that meets at Fort McMurray Composite High School, Fort McMurray, Alberta. Fort McMurray Composite High School is a high school with many at risk students and many students, in general, who are not expected to excel at academics and are not interested in science, technology and mathematics. In September 2014 CTS teacher Mr. Ram Etwaroo made robotics the focus the Technology program, created the Miners RC robotics club, and started Team 5615.

FOUNDERS:

As a CTS teacher, Mr Etwaroo was motivated to create Team 5615 to inspire and engage students to learn about science and technology and stay in school by leveraging the “coolness” of robotics, and the excitement of head to head competition in FIRST® Robotics Competition (FRC®).

MEMBERS:

Since the beginning of September 2014 to now (November 2014), our team has grown to include:

- 20 student members
- 5 technical and business mentors

Our current membership is made up of 7 Grade 10's, 8 Grade 11's and 5 Grade 12's. We currently have 4 girls among our members with a few more to join soon. Students in Grades 7 - 9 do LEGO robotics and participate in the FIRST® LEGO League.

Membership of the club and team is open to all students in Fort McMurray Composite High School and students in other high schools in Fort McMurray.

LOCATION:

Our team is located with the Fort McMurray Composite High School, Fort McMurray, Alberta. Our team has full access to all school facilities available to students. The school has the following well equipped shops: Welding and Fabrication Shop, Wood Shop and Mechanics Shop. The team's mentor is a CTS teacher in the Information Technology program. The Information Technology Program, Welding and Fabrication Shop, Wood Shop, and Mechanics and Fabrication Shop are very closely connected with the CTS program.

SPONSORS:

We hope to be sponsored by the FRC[®] Rookie Grant, as well as already having established relationships with:

- Fort McMurray Composite High School
- Fort McMurray Public Schools District
- Fort McMurray Parents Advisory Council

In the future, we will be establishing sponsor relationships with local companies in Fort McMurray. For example, our team's mentor has an established relationship with a local restaurant named Curry Pot.

Fort McMurray has a large number of oil companies and large engineering firms employing large numbers of engineers operating in this area to extract oil from the oil sands.

WHAT WE DO:

We participate in the FIRST[®] Robotics Competition as a team of high school students drawn from the students in Fort McMurray Composite High School and other high schools in Fort McMurray.

RELATIONSHIPS:

We have a relationship with FRC[®] West, and Joel Gallant - one of the FIRST[®] Senior Mentors. The relationship will hopefully be fruitful for our development and sustainability. His expertise should be a big asset to building the team going forward.

We have strong relationships with the Welding and Fabrication, Wood, and Mechanics shops in our school as Technology, Welding and Fabrication, and Carpentry are all within the same CTS Department.

GROWTH:

The team will be continually renewed with new students moving into higher

grades. Students in Grades 7 - 9 do LEGO robotics and participate in FIRST® LEGO League (FLL). When students move on to Grade 10 they become new recruits for the FIRST FRC® program and new recruits for Team 5615.

PLANS:

We will focus on mentoring and training of team members and new recruits. We plan to recruit consistently year-to-year by generating interest among the students in the school by showcasing FIRST® and what Team 5615 does. We will continue to develop relationships with our school, District, community and potential sponsors by demonstrating the value and benefits that our team bring to students and youths in our community.

2.0 Program Summary

Team 5615 is a rookie team of high school students participating in the FIRST® Robotics Competition. Our membership is open to all students from Fort McMurray Composite High School, Fort McMurray, Alberta and other high schools in the area.

One of the goals of Team 5615 is to inspire and engage students to stay in school by leveraging the “coolness” of robotics, and the excitement of head to head competition to inspire and engage students. Fort McMurray Composite High School is strong in varsity team sports (football, volleyball), as a result students will be drawn to FIRST® Robotics Competition.

Another goal of Team 5615 is to make teaching and learning fun so as to inspire, engage and encourage at risk students and students who usually do not achieve a high level of success at academics by rewarding them for demonstrating team spirit, gracious professionalism, maturity, and the ability to overcome obstacles.

Team 5615 and the robotics program is recognized by both our school and our school District as important for student’s success, inspiring and engaging students and encouraging students to stay in school.

Both our school and our District see a need for new programs, teams and clubs starting at Fort McMurray Composite High School. Our community and parents recognize the value of students and youths being involved in our robotics team in order to keep them off the streets and not being involved in bad activities and misbehaviour.

3.0 FIRST Description

FIRST[®]'s mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, inspire innovation, and foster well-rounded life capabilities including self-confidence, communication, and leadership.

FIRST[®] was founded in 1989 to inspire young people's interest and participation in science and technology. Based in Manchester, NH, the 501 (c) (3) not-for-profit public charity designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, and math, while building self-confidence, knowledge, and life skills

FRC

The highest level of robotics competition offered by FIRST[®]. High-school students team up with the world's best technology companies to build the most impressive robots you've ever seen. Built from scratch in only 6 weeks, these 5 foot tall, 140 pound robots compete in high intensity robo-sports. With bragging rights at stake for schools and the companies that support them, robotics takes on a pro-sports experience. Watch the best of the best in robotics come out to play. "The varsity sport for the mind," FRC[®] combines the excitement of sport with the rigors of science and technology. Under strict rules, limited resources, and time limits, teams of 25 students or more are challenged to raise funds, design a team "brand," hone teamwork skills, and build and program robots to perform prescribed tasks against a field of competitors. It's as close to "real-world engineering" as a student can get. Volunteer professional mentors lend their time and talents to guide each team.

Gracious Professionalism is part of the ethos of FIRST[®]. It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community.

Gracious Professionalism, fierce competition and mutual gain are not separate notions. Gracious professionals learn and compete with intensity and drive, but treat one another with respect and kindness in the process. They avoid treating anyone like losers. No chest thumping tough talk, and no sticky-sweet platitudes. Knowledge, competition, and empathy are comfortably blended.

In the long run, Gracious Professionalism is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity.

Coopertition[®] produces innovation. At FIRST[®], Coopertition is displaying unqualified kindness and respect in the face of fierce competition. Coopertition is founded on the concept and a philosophy that teams can, and should, help and cooperate with each other, even as they compete.

Coopertition involves learning from teammates. It is the passage of knowledge on to others. It is learning from Mentors. And it is managing and being managed. Coopertition means competing, but always assisting and enabling others when you can.

4.0 Team Description and History

Team 5615 is located at Fort McMurray Composite High School, Fort McMurray, Alberta. While the team is located at Fort McMurray Composite High School, membership of the team is drawn from this school and other schools in the area.

Team 5615 is one of the teams of the Miners RC robotics club; membership of the club is open to students from Grades 7 - 12 students. Students in Grades 7 - 9 do LEGO robotics and participate in FIRST® LEGO League (FLL).

Fort McMurray Composite High School is a high school with many at risk students and students who are generally not expected to excel at academics and generally not interested in mathematics and science. The students gravitate to the trades courses and jobs in the trades are plentiful in Fort McMurray, an area dominated by extracting oil from the oil sands in Alberta. The school has a well equipped Welding and Fabrication Shop, Wood Shop and Mechanics Shop, in addition to the Technology Program. In September 2014 CTS teacher Mr. Ram Etwaroo made robotics the focus the Technology program, created the Miners RC robotics club, and started Team 5615.

The team's mentor is a CTS teacher in the Technology program and Welding program and the Welding Shop, Wood Shop, and Mechanics and Fabrication Shop are very closely connected. Many members on the team take courses in robotics and technology, electrical, welding, mechanics and fabrication.

5.0 Team Impact

We know that the students in our school are more successful and do better with project-based learning and more hands on or practical work, as opposed to listening to lectures or working at a desk for any length of time. Our team's involvement in FIRST® Robotics Competition will impact our students in a meaningful and lasting way by making teaching and learning fun.

Team 5615 participation in the FIRST® Robotics Competition will leverage our student's love for varsity sports in our school, (football and volleyball), for love of the "varsity of the mind". Fort McMurray Composite High School have been champions at football, we expect this will translate to our student's success in the FIRST® Robotics Competition.

Recently, Brandeis University conducted an independent, retrospective survey of FIRST Robotics Competition participants and compared them to a group of non-FIRST students with similar backgrounds and academic experiences in math and science. Highlights of the study's findings show that **FIRST students are:**

- Significantly more likely to expect to achieve a postgraduate degree.
- More than twice as likely to pursue a career in science and technology.
- Nearly 4 times as likely to pursue a career in engineering.
- Roughly 10 times as likely to have had an apprenticeship, internship, or co-op job in their freshman year.
- More than twice as likely to volunteer in their communities.

This clearly shows that Team 5615 participation in the FIRST[®] Robotics Competition will positively impact students, encourage students to stay in school and achieve success

6.0 Team Structure and Organization

We have created a team structure consisting of the following subteams:

- Design (Robot design, CAD)
- Fabrication (Welding, Machining, etc.)
- Assembly (Hand tools, Cutting, etc.)
- Electronics
- Programming
- Strategy
- Public Relations
- Community Outreach
- Sponsorship
- Award Submission

Students on the team can get involved in as many areas as they can manage during the full FRC season. Each area is led by a 'Lead' who provides direction to the group and helps direct the activities of the team members. All members of the team are expected to support the work directly through hands-on participation.

7.0 Team Risks and Risk Management

Strengths:

- Our team's mentor is a CTS teacher within the school plus other CTS teachers in the school are available to the team
- Composite High School is strong in varsity team sports (football, volleyball); FRC is "varsity sport for the mind"; this will contribute to our success in growing the club
- Team 5615 is in a town with many large oil companies employing many engineers
- Companies in Fort McMurray are very supportive of school teams and clubs
- Our team has excellent funding prospects due to the location of the team in a school and in a town with many large oil companies. The future prospects for fundraising for our team are excellent
- Our team has strong support in the school as the team and robotics program is recognized as very important to student's success and to showcase the school
- The School District is also very supportive of the robotics program and the importance of robotics to teaching and learning, thus guaranteeing some future funding from the School District
- Team 5615 is supported by school and District as way to engage students, encourage students to stay in school and be successful, thus guaranteeing future funding from the District

Weakness

- Brand new team, learning curve, growing pains
- Fundraising activities now starting up

Opportunities

- Team 5615 is within a high school
- Our team will expand into include our Outreach School
- Many reasons and indications that our team will grow rapidly
- Funding, support guaranteed next year
- Funding prospects excellent in future years

Threats

- Severe weather/transportation issues

8.0 Team Planning

Team 5615 meets at Fort McMurray Composite High School; currently the team meets more than once a week for meetings as needed. These are easy to schedule as almost all members attend the school. We will settle down to meeting regularly after school

twice per week and on Saturdays as needed.

The team mentor is a CTS teacher at the school and works closely with the other teachers in the Welding and Fabrication Shop, Wood Shop and Mechanics Shop. We will have the services of the other teachers in the CTS program available to the team.

Many members of the team are enrolled in robotics classes and other CTS classes such as welding, carpentry and mechanics. Our team will have full access to all the facilities in the school, as well, students will be learning the skills needed for FIRST® Robotics Competition in their classes.

Students in Grades 7 - 9 do LEGO robotics and technology as option classes and participate in FIRST® LEGO League (FLL). We plan to maintain student's interest in robotics so that when students move on to Grade 10 they become new recruits for the FIRST® FRC program and fresh members of the team.

We plan to increase the number of students committing to our team by teaching students about FIRST® and showcasing what Team 5615 does. Students enrolled in the robotics courses in the Information Technology program at school are usually interested in becoming members of the robotics club and Team 5615. These courses are taught by the team mentor, who is also a CTS teacher at the school.

We plan to include our sister schools in our District, such as our Outreach school. As a result we plan to start up more teams for FIRST® Robotics Competition.

We are able access many services and other structures already in place at the school: using the school's registered charity number to receive charitable donations, receive money, issuance of receipts, banking and so.

We will have ongoing, strong support for our team from our school and District. Team 5615 participation in the FIRST® Robotics Competition and the robotics program is recognized by both our school and our school District as important for student's success, inspiring and engaging students and encouraging students to stay in school. Both our school and our District see a need for new programs, teams and clubs starting in Fort McMurray Composite High School. Our community and parents recognize the value of students and youths being involved in our robotics team in order to keep them off the streets and not being involved in bad activities and misbehaviour.

We plan to build on the very positive encouragement from our school, District and community which in effect says get the team started and off the ground and future funding and support will be there.

9.0 Team Goals and Challenges

GOALS

Our practical, quantifiable goals for 2015 and beyond are:

- Build partnerships to sustain our year-to-year budget without school or District funding
- Implement a self-sustaining fundraising structure for continual fundraising
- Secure an agreement with our school and District for future ongoing funding
- Advertise the team within our school, our District and the community
- Recruit students and mentors
- Implement a training and mentoring program within the team where the more experienced students or higher grades train the younger grades, newer members
- Build competitive one robot for the Western Canada Regional FRC®

CHALLENGES

- Remote location of the team
- Severe weather and transportation challenges
- Sustainability - finding financial partners to work with
- Student engagement - giving students a meaningful experience that they commit to

10.0 Sustainability

A big part of our sustainability, especially in future years, is the support and funding from our school and our District. Our team is recognized as important and valuable to our school, our District and to the youths in the Fort McMurray community as a whole, consequently, in future years we expect on-going support from both our school and our District.

We expect sustainable and on-going support from the many large oil companies and engineering firms operating in the Fort McMurray area. These businesses are generally very supportive of school teams on our area as they employ many engineers and many of their employees are parents with children in our schools.

We expect on-going funding from fundraising through the Parent Advisory Council at our school. Schools teams at our school do fundraising under a funding raising umbrella that is managed by the Parent Advisory Council. The team will receive funding as long as members do work at the fundraising activities, therefore this is a reliable and sustainable source of funding.

Our future plans include team fees and some costs, such as travel, passed on to parents. It offers parents and students an incentive to look for sponsors and demonstrates commitment to the team. Our goal, however, is to fully sustain the team through sponsorships and fundraising.

Budget:

OUT:

\$ 6,000	Registration
\$ 2,000	Extra Parts
\$ 0	Insurance
\$ 2,850	Travel costs
\$ 900	Tools
\$ 500	Food
\$ 300	T-Shirts

IN:

\$ 4,000	FRC Rookie Grant
\$ 2,000	Sponsorship - FRC® West Sponsorship
\$ 4,850	Fundraising - Parent Advisory Council
\$ 900	Sponsorship - School funding
\$ 500	Sponsorship - Curry Pot restaurant
\$ 300	School funding/MLA (T-shirts)
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\$ 12,550	\$ 12,550

This budget assumes that the Registration is covered by the FRC® Rookie Grant and FRC West Sponsorship. The budget also assumes that the full amount is received from the Parent Advisory Council, however this not an unsafe assumption because the amount received in proportion to the work done by the team at fundraising activities.

Our second year would look like this:

OUT:

\$ 5,000	Registration
\$ 1,100	Extra Parts
\$ 0	Insurance
\$ 3,000	Travel costs
\$ 900	Tools
\$ 500	Food
\$ 300	T-Shirts

IN:

\$ 2,000	FRC® Rookie Grant (2nd Year)
\$ 4,100	Fundraising - Parent Advisory Council
\$ 3,000	Sponsorship - local companies
\$ 500	Sponsorship - Curry Pot
\$ 500	Fundraising - Students

\$ 1,000		School and District funding
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\$11,100	\$10,800	

We are confident that our team will have more than adequate funding in the second year and future years because our fundraising organization will be in place, sponsorship relationships will have been established, and funding from the school and District will be in place.

11.0 More Information

Business plan based on the template provided by Team 234, [here](http://www.chiefdelphi.com/media/papers/2758).
(<http://www.chiefdelphi.com/media/papers/2758>)