

ROBO RANGERS BUSINESS PLAN

About Us!

Hi! we are the Robo Rangers. We are a FIRST robotics, team and this is our second year as a FTC team. We are made up of both girls and boys in 6th through 8th grade and are working towards making it to states in our second year.

Our first season of FTC as the Robo Rangers was 2015 “First Res-Q”. During this season, we won the judges award and the PTC design award.

Contact information:

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About FIRST:

FIRST stands for “**For Inspiration and Recognition of Science and Technology**”. It is an organization that **encourages youth to explore engineering principles** through working as a team to build a brand, community, and technical skills. Junior FLL, FIRST Lego League (FLL), FIRST Tech Challenge (FTC), and FIRST Robotics Competition (FRC) are all programs within FIRST. Junior FLL is the pre-program for students interested in FLL for kindergarteners to 2nd graders. FLL is a robotics program for 4th-8th graders, while FTC and FRC are robotics programs for high schoolers.

About FLL:

FLL is also a worldwide competitive robotics competition. The participants, **ages 4th grade and up, use LEGO’s NXT Mindstorms to build and program a robot**. This robot must be able to complete missions autonomously on 4' by 8' boards. The students use a visual-based programming software to program these robots. There is also a **research portion of FLL** - the teams must find a creative problem and solution within that year’s theme.

About FTC:

FTC is a worldwide robotics competition. Teams of 10 or less are responsible for **designing, building, and programming an 18" by 18" by 18" robot to compete in a challenge** that changes every year. The robot is made from materials like metal, 3d printed plastic parts, wires, and motors. They then use their robot to complete tasks on a 12' by 12' playing field.

Goals: One of our major goals throughout the season is to expand our knowledge of robotics design and technical engineering, reach out to the engineering community, and provide community service in our area. You can see more details in our engineering notebook.

This season, we would like to:

We would like to accomplish	Done!
To receive the Inspire Award.	Done!
Raise enough money to create a demo/practice robot.	Done!
Create a website.	Done!
Serve our community.	Done!
Connect with the engineering community	Done!
We would like to encourage 5 th and 6 th graders to join FTC robotics next season.	Done!
We also wanted to make it to states.	Done!
Earn the Inspire Award at states!	

Events for the 2016/17 Season:

- September 17th Assist the FRC Team 2834 with their new *Full STEAM Ahead* TV show
- October 13th Present/Demo for 6th graders at BHMS to encourage STEAM
- October 30th Collect cans for the South Oakland Shelter
- October 31st Assist GEKOTS FLL team with a local community Halloween Party
- November 1st Visit American House Senior Living and let them drive the robot
- November 2nd Present in front of 5th and 6th graders at EHMS about STEAM
- November 5th Pass out bookmarks at competition
- November 12th assist with Junior FLL Bloomfield Bash
- November 12th assist with FRC Girls tournament in Bloomfield Hills
- November 12th assist and cheer on the Techno Turtles in their FLL Tournament
- November 19th assist and cheer on the GEKOTS and Doginators at their FLL Tournament
- November 30th Make cat houses for Humane Society
- December 10th Wrap gifts for a needy family we adopted in Pontiac
- December 10th Collect coats for high school coat drive
- December 17th States!!
- March 14th Assist with the Eastover Elementary Science Fair

Some of our community outreach for this season:

FLL Mentoring: Our team worked all season mentoring FLL teams. Maggie, Nick, and Noah all are volunteering with different FLL teams. Noah is mentoring for the Techno Turtles in which he works with building and programming. Maggie mentors for the G.E.K.O.T.S where she helps with Out Reach. And lastly, Nick works with the Doginators helping in various ways.

Canned food drive for South Oakland Shelter. We collected cans in a nearby neighborhood and donated them to South Oakland Shelter. We advertised the event through flyers and the neighborhood App. We had people drop them off at one of our meetings or at the Fox Hills Community House.

Demonstrations. We went to two different schools to promote STEAM and make sure robotics continues in our schools. We presented, answered questions, and let student volunteers test out the robot.

Halloween Party in Fox Hills. Along with the FLL team the GEKOTS, we hosted a Halloween party for a local neighborhood. There were games, activities, and food.

American House. We visited a senior living community and presented our robot and let some of them drive. It was great to spend time with these wonderful people.

Tournament Volunteering. Our team is volunteering at the Bloomfield bash Jr. FLL tournament, the FRC Girls Tournament, and the FLL state tournament.

Cat House for the Humane Society. We built cat houses. They are used to help keep cats calm. Cats are stressed easily and when they are stressed they get sick more easily. If they are sick, they can't be adopted. The cat houses help them feel more relaxed and therefore more likely to be adopted.

Adopt a family for the holiday. We adopted a family of five in Pontiac, MI. We each drew a name (4 gifts per kid) and went shopping. We then wrapped them all. It felt so good to see what we had been able to do to make someone's Christmas awesome.

Coat Drive. We joined the Bloomfield Hills High School in donating coats to Share the Warmth for an organization called Project Healthy Community. We collected 17 coats.

Some of our engineering outreach for this season:

During the season we invited engineers from our community to view our robot, listen to us explain our process, and ask for advice and feedback. They were extremely helpful. They asked a ton of questions and helped us focus not only our presentation but our design. They asked why we decided to build what we did, how we did it, how we weeded through our ideas. One even spent the entire evening with our programmer trying to figure out why it wasn't working! They were awesome.

Dan Champoux: BSE in computer engineering, senior engineer in automotive diagnostics at Chrysler.

Dr. Ghassan Kridli: Ph.D. mechanical and aerospace engineering, professor and associate dean for undergraduate education, college of engineering and computer science at the University of Michigan Dearborn.

Cheryl Dehn: BS in materials and engineering and masters in engineering management, powertrain manufacturing engineering for new programs leader at Ford.

Kevin Bernard: BS in computer science, senior software engineer at Nexlink Communications

Marc LaDuc: BA in communications, technical program director at SAE International

Mike Barczak: BS electrical engineering, Sales account director HERE previously Navteq

We also met with the Oakland University Robotics team: They gave us feedback on our design and we saw and drove their robot as well.

2016/2017 Budget:

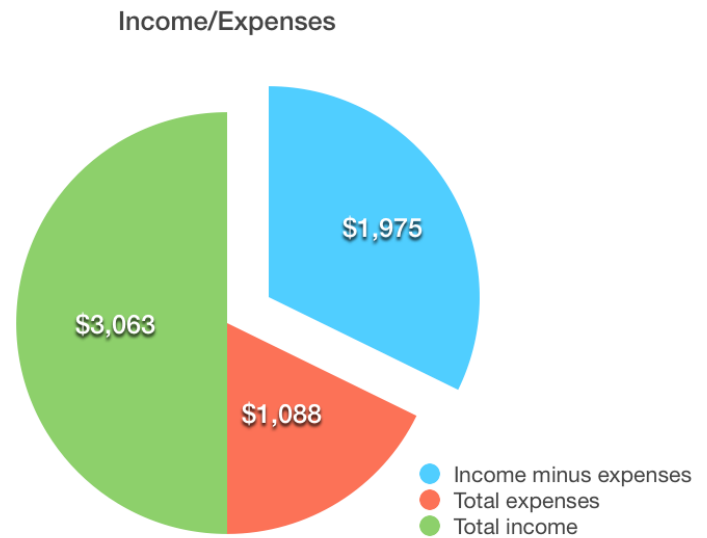
Below are all of our expenses for the year. Appendix 1.a has non-rounded info.

Robo Rangers Budget 2016 (rounded)

MONEY IN	
Students fees	\$1,800
PTC grant	\$1,000
Bake Sale	\$263
TOTAL INCOME	\$3,063

MONEY LEFT OVER	
Income minus expenses	\$1,975

MONEY OUT	
1 tournament fee	\$100
State tournament fee	\$125
tournament 1 lunch	\$76
State tournament lunch	\$120
PITSCO	\$129
DICKIES uniforms	\$81
Andy Mark	\$221
Modern Robotics	\$63
Staples	\$41
Fedex	\$4
Lowe's	\$4
Harbor Freight	\$10
Staples 2	\$84
McMaster Carr	\$30
TOTAL EXPENSES	\$1,088



Bake Sale Fundraiser

Materials/ingredients to make baked goods: \$ 147.47

Sales: \$ 263

Total profit: \$115.53

Total profit because of Mr. Green's donation: \$263

(All ingredients donated by Mr. Green!!!)

Practice/demo robot cost:

Our goal with fundraising this year is to build a practice/demo robot. To order a brand new kit from FIRST with all electronics, control, and build kit: \$1813

Sponsorship:

Robo Rangers Curent Sponsors:

- PTC \$1000 grant
 - Custom Guitar and Bass Repair Mentor and \$100 in parts
 - Todd Green with Ameriprise Financial Services, Inc. Mentor and \$147.47
 - Bloomfield Hills
- Schools gives us a space to work

Sponsors of FIRST

- General Motors
- Consumer Energy
- First in Michigan
- Ford Motor Company

If you would like to become a sponsor, check out our website or email:

Roborangers10035.weebly.com

roborangersteam10035@gmail.com

Our Sponsorship letter



Dear _____,

We are very excited for this FTC season and would love for you to support us! Sponsorship of mentors, product, or financial support is greatly appreciated. Below, you will find benefits for each sponsorship level. Of course, any amount is helpful.

In-kind donations are also welcome and the value of the donation will qualify for the appropriate sponsorship level.

Benefits:	\$100	\$250	\$500	\$1000
A handwritten thank you letter	X	X	X	X
Your name in our engineering notebook and on our website		X	X	X
Your name and company logo on our cart (used to transport robot at competitions)			X	X
Your name and company logo on our robot			X	X
We come to your business and give a demonstration of our robot				X

If would like to become a sponsor, checks can be made out to:

Bloomfield Hills Schools

Memo line: Robo Rangers Robotics

7273 Wing Lake Road, Bloomfield Hills, MI 48301

Our team is a non-profit, but we are not a 501(c)(3) organization. If you need a 501(c)(3) in order to donate to us, please contact us and we will put you in touch with our fiscal agent.

If you have any other questions,

you can email us at roborangersteam10035@gmail.com

Or visit our website <http://roborangers10035.weebly.com>

Thank you for your time and consideration!

The Robo Rangers

Events for the 2016 Offseason:

During last year's rookie off season we worked on a few outreach programs and events.

Marvin's Mechanical Museum. The entire team went to Marvin's Mechanical Museum to celebrate our rookie season, and to look at the engineering and design behind the arcade games. (Some of them were over 100 years old!)

Eastover Science fair. Our team went to our local elementary in May and showed off our last year's robot. We allowed kids to drive it. We looked at, commented, and questioned participants of the fair. We also answered questions so we could practice talking to the judges for next season.

BHH Robotics Showcase and sign up. Also when we were off season we attended a FIRST robotics show off. While we were there we got to talk to multiple elementary students, and also we got to talk to more parents, teachers, and supervisors about supporting and joining robotics. We also got to talk to other local teams, and learn about their techniques.

MakerFaire. Members of the team attended MakerFaire to enjoy the exhibits but also to support our local FRC team the Bionic Black Hawks.

Olympic Celebration. The team met to play Olympic themed games during the 2016 Summer Olympics. It was a chance for new members and old to meet, develop team work, and hang out.

Appendix 1.a

Category	Item	Cost
Money in	12 kids	\$1,800
	PTC grant	\$1,000
	Bake Sale Fundraiser	\$263
	total	\$3,063
Money Out		
x	Tournament fees	\$225
X	Tournament lunch	\$76
x	State lunch	\$120
x	PITSCO	\$129.17
x	Dickies	\$80.51
x	Andy Mark	\$221.41
x	Modern Robotics	\$62.80
x	Staples	\$41.33
x	Fedex	\$4.45
x	Lowe's	\$3.81
x	Harbor freight	\$9.52
x	Staples	83.69
x	McMaster Carr	30.02
	total	\$1087.89
<u>Over all</u>	<u>What's left</u>	<u>\$1975.11</u>
<u>total left</u>		