



Business Plan

Boyne City High School
Robotics Program
1035 Boyne Ave., Boyne City, MI 49712
bcblaze@boyne.k12.mi.us
www.boynecityblaze.com

Mission Statement, Team History, and Growth

Mission Statement: Boyne City Blaze (BC Blaze) provides Boyne City High School students with a guided, hands-on opportunity to explore various applications of STEAM (Science, Technology, Engineering, Artistic Design, and Mathematics). By partnering with community mentors, BC Blaze fosters a variety of valuable life skills. These skills will be needed to become the creative, scientific and technological leaders of the future: innovation, self-confidence, leadership, inspiration, and communication.

Since inception in 2011, BC Blaze has been dedicated to teaching students science, technology, engineering, construction, business/funding, marketing, writing, and teamwork skills to fill the diverse roles of the team, as well as prepare students for future college and job applications. The robotics program offers not only the opportunity to learn from community mentors in the field but also permits local industries to assist in developing the community's future workforce. This valuable experience requires an investment of time, effort from both students and mentors, and community engagement in order to be successful. As an illustration of our outstanding community involvement, when BC Blaze earned a spot at the world competition in 2016, the community raised the necessary \$16,000 to attend.

BC Blaze has witnessed significant growth with the team growing from 6 members to 42 and is currently 48% female. Growth is important to the continuation of BC Blaze, resulting in the robotics program dedicating an extensive amount of time to outreach. BC Blaze hosts and participates in several community events such as Boyne City's Stroll the Streets, the business expo, and the elementary school carnival.

But outreach doesn't stop there, successful team growth is also dependent on the enthusiasm of the younger generation. Therefore, BC Blaze is committed to exposing middle school students to FIRST and preparing the next generation. Fifth-grade students participate in a half-day workshop entitled "Full STEAM Ahead Day," where students learn about coding, engineering, and artistic design. As a result, fifth-grade teachers have integrated coding into their yearly curriculum as another opportunity for exposure. In 2015, our middle school implemented an elective robotics class as part of their sixth-grade curriculum. In 2018, the middle school chose to add an innovations class for the seventh-grade to expand STEAM. Unique to BC Blaze, the "Spark" program encourages eighth-grade students to participate alongside our FRC team. Sparks have the opportunity to get hands-on experience and learn new skills through peer mentorship. The program promotes an early understanding of FIRST, fosters an easy transition between middle and high school, and helps to continue interest in STEAM-related fields. "Spark" participation helps incoming freshmen enter high school ready to assume leadership roles earlier.

Marketing and Financials

BC Blaze is a vibrant member of the Boyne City community. On Friday nights during the summer, Blaze participates in Boyne City's flagship event "Stroll the Streets." Sidewalks are filled with residents and tourists celebrating music, enjoying restaurants, and learning about Boyne's culture. Team members showcase the robot, illustrate the benefits of FIRST, and help citizens operate the robot. Taking "STEAM to the Streets" has been a great opportunity to spread the word of FIRST, fundraise, network, and recruit new members and mentors. BC Blaze appreciates the investment the Boyne community has made in supporting the team and understands the benefit of this collaborative relationship.

By partnering within the high school in the courses of business, visual imaging, drafting, woodshop, and machine tool, BC Blaze spreads the message of Gracious Professionalism throughout the school. Additionally, the philosophy of FIRST within elective coursework maximizes student exposure.

Our goal is to have a financially secure program, with little to no school funds. In order to achieve fiscal responsibility, the student operations team with the support of a fundraising mentor develops annual fundraising programs, applies for grants, and solicits sponsorships year-round. Sponsors are an important portion of our program and the community has responded with incredible enthusiasm. Contributors actively participate in all areas and in turn, are listed on our team apparel, displayed on the robot and in our pit, and included in all of our social media. Our sponsors are the lifeblood of Blaze; with many of them returning for 7 consecutive years. Students and sponsors share a positive relationship that has resulted in offers of internships and active employment in their companies. Blaze's annual team budget is \$48,000 including in-kind donations to offset costs. The finances can be broken down into three main categories:

- Competition expenses - registration, lodging, and transportation fees;
- Parts & Material expenses - items needed to build the robot;
- Marketing expenses - items needed for promoting FIRST, team branding, team spirit, public relations, sponsor updates, and appreciation.

With the help of an accounting mentor, operations members use a general ledger to keep track of revenue and expenses. A monthly report is presented to both the advisory committee and students. For our Income and Expenditure sheet, please refer to Appendix A.

Organizational Structure

BC Blaze's robotics program is student-run, student-driven with mentor guidance and oversight. This permits students to develop leadership skills and gain hands-on experience in engineering and business roles. Both the student and mentor structures have three components: build, competition, and

operations, which encourages improved communication between individual sub-teams. With improved communication comes greater organization, which then leads to success. For our full organizational structure, please refer to Appendix B.

With experienced members graduating every year, the active training of younger members is necessary to maintain the team. Veteran team members mentor, “apprentices,” who wish to learn more about specific team roles. For example, a safety apprentice will work with the current safety captain for a couple of seasons, ensuring a transfer of knowledge while encouraging new ideas. Additionally, the team has adopted a policy of “teaching, not telling” empowering younger members to gain hands-on experience with the guidance of more experienced individuals. This style of leadership fosters an inclusive team and builds skills in an environment where growth is key. Within the span of two years, Blaze helped the school district integrate school day curriculum for fifth, sixth, and seventh-grade students. Our newest initiative is a grant-funded Lego League for third and fourth-grade students. In the next 2 years, grant funding will be sought to help female students see themselves in adult STEM fields through field trips and local University visits.

Risk Analysis

By openly discussing team strengths and weaknesses, members use problem-solving methods to improve. Highly dedicated members invest considerable amounts of time to the robotics program, helping to offset the limitations of a small school and community from which resources and participants must be drawn. Many teams packed into the same rural area results in competition for mentor resources. BC Blaze answers this need by hosting the annual Robotics Kick-Off, providing workshops, training, fellowship, and team outreach. For BC Blaze’s full evaluation of its strengths, weaknesses, opportunities, and threats (SWOT), please refer to Appendix C.

Appendix A

FIRST ROBOTICS BUDGET 2018-19 SCHOOL YEAR

COMPETITIONS

REGISTRATION	REGIONAL	\$2,500.00	\$	2500.00
	REGIONAL	\$2,500.00	\$	2500.00
	No Mi Conf	\$100.00		
	Quick Build	\$100.00		
	STATE	\$4,000.00		
	WORLDS	\$5,000.00	\$	-
LODGING	REGIONAL	\$4,000.00		
	REGIONAL	\$4,000.00		
	STATE	\$7,000.00		
	WORLDS	\$8,000.00		
TEAM SPIRIT		\$800.00	\$	286.00
MEALS	Meal/Lodging Stipend - Meals		\$	-
TRANSPORTATION COSTS				
	KICK-OFF	\$0.00	\$	-
	REGIONAL	\$500.00		
	REGIONAL	\$500.00		
	STATE	\$600.00		
	WORLDS	\$1,000.00	\$	-

MATERIALS & COSTS

ROBOT PARTS	\$5,500.00	\$	215.27
PIT & FIELD PIECES	\$300.00	\$	-
TOOLS & SUPPLIES	\$500.00	\$	15.61
TRAILER	\$200.00		
MS & ES Support	\$400.00		

MARKETING \$500.00 \$ -

TOTAL \$48,000.00 \$ 5606.88

REVENUE:	SPONSORSHIPS	\$24,000.00	\$	9340.00
	GRANTS	\$9,000.00	\$	3500.00
	FUNDRAISING	\$10,000.00	\$	1597.00
	Stroll the Street + Other Sightings		\$	502.00
	Zombie Run		\$	250.00
	Mich Mnt Mayhem		\$	-
	Kick-Off Concessions		\$	317.67
	Upsy Daisy Coupons		\$	-
	Pop Can Drives		\$	80.00
	Thunder Run		\$	447.72
	PRIOR YEAR CARRYOVER	\$5,000.00	\$	4,800.00

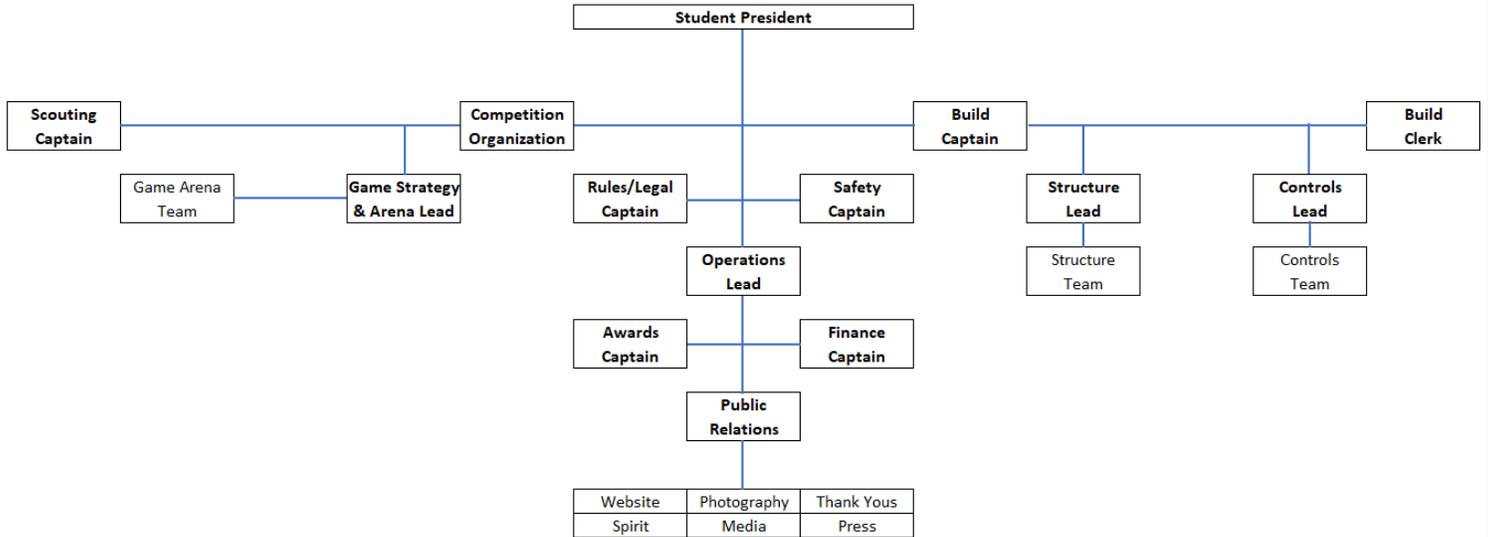
MISCELLANEOUS

TOTAL \$48,000.00 \$ 19,237.39

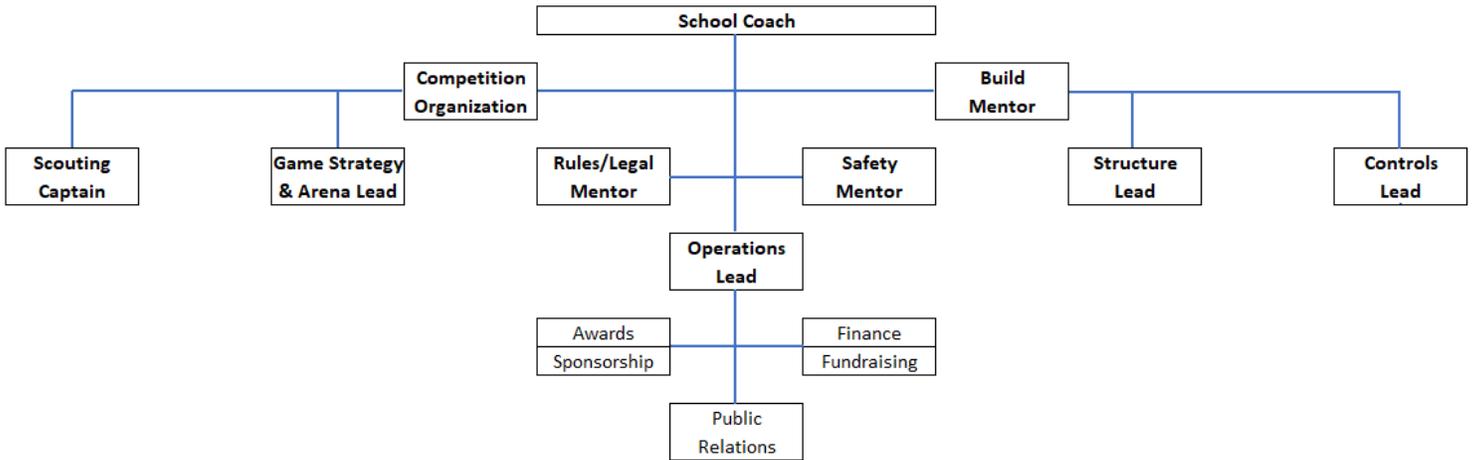
BALANCE \$0.00 \$13,630.51

Appendix B

TEAM 4377
 Boyne City High School Robotics
 Organizational Chart - Student Team



TEAM 4377
 Boyne City High School Robotics
 Organizational Chart - Mentors



Appendix C

Strengths

- Supportive school system integrating programs including Art, Visual Imaging, Machine Shop, CAD, and Business Management
- Supportive Community
- Software and equipment available in school for design, build and public relations
- Skilled mentors who provide numerous resources
- Interested, quality students

Weaknesses

- Small school and therefore a small student population to recruit from
- Most student team members are involved in other extra curricular activities resulting in conflicts with time/schedules
- Small community
- Local sponsors have limited resources for providing large financial aid
- Numerous sponsors are needed to meet financial need
- Mentor hours (Limited, conflicting)

Opportunities

- Increase community outreach activities
- Develop and present STEAM related programs to the elementary and middle school to cultivate interest in younger students
- Expand fundraising activities
- Scholarships for FIRST members
- Non-technical opportunities to learn more about business, management, marketing, photography, and graphic design.
- Full STEAM Ahead Day

Threats

- Small, rural area with 10 teams competing for the same limited sponsor and mentor resources
- Local economy is based on tourism which can change quickly depending on unforeseen circumstances
- Loss of experienced/skilled students upon graduation
- Snow days during build season
- Scheduling conflicts for students, specifically between other co-curriculars and during the build season