

Precision
GUESSWORKS

164E

Business Plan

Table of Contents

Team Overview	1
Mission Statement	1
Three Tenets	1
For our Members	2
For our Mentors	2
For our Community	2
Recruiting New Members	4
Team Organization	4
Team Roles	5
Coaches	5
Mentors	5
Business Officer	5
Technical Officer	5
Public Relations Lead	5
Programming Lead	5
Mechanical Lead	6
Electrical Lead	6
Current Positions	6
Mentor Configuration	7
Student Expectations	7
Behavior	7
Attendance	7
Grades	7
Mentor Expectations	8
Dress Code	8
Competition	8

Outreach and Other Team Events	8
Goals	9
One Year Goals	9
Three Year Goals	9
Five Year Goals	9
Risk Assessment	10
Awards	12
Execution	12
Budget	13
The Past Five Years	15

Team Overview

Team Name

Official name: FIRST Team 1646: Precision Guessworks

Also known as: 1646, Team 1646, Precision Guessworks, FIRST Team 1646, and Jefferson High School Robotics

Our School

School Corporation: Lafayette School Corporation

School: Lafayette Jefferson High School

Location: Lafayette, Indiana

Founding

Founding Year: 2004

Team Founders: Steve Florence

Corporate Sponsors: Caterpillar

Team Composition

Students: 23

Mentors: 13

Mission Statement

FIRST Team 1646 strives to promote inspiration of science, engineering, and technology to ourselves and our community while motivating our dedicated youth to achieve academic excellence and become future leaders.

Three Tenets

The logos for team 1646 feature three arrows, each of which represents one of three tenets that describe the overall goals of our team. These principles guide our efforts in our team-building and outreach efforts.

The tenets are as follows:

1. Embrace technology
2. Educate our community
3. Empower the world

These tenets are often featured across our team materials in documentation, visual displays, and presentations.

For our Members

Being on this team provides students with a second home. It is a place that allows students to get first-hand experience with not only engineering, programming, and business skills but life lessons in FIRST's Core Values, Gracious Professionalism, and Coopertition. Students learn important people skills, such as how to talk to employers or public audiences, and how to give presentations or speeches.

Our team is preparing students for postsecondary education and careers. On average, 88.1% of Indiana students graduate high school. It is our mission to help each student on our team graduate high school. With our training and experience, every student on our team should graduate or move on feeling confident that they can be successful in their post-secondary education or the workforce.

For our Mentors

The majority of our mentors are college students at Purdue University preparing for their careers. By mentoring our team, they not only have the opportunity to earn college credit, but they can also gain many transferable work skills. Mentors can gain experience teaching students and also continue the love of STEM they gained in high school by giving back to the FIRST community.

Some of our other mentors are adults in careers that involve technology. Those mentors are with the team because they have a passion for teaching young people about STEM and a love of FIRST. Some mentors are even parents of students on the team that are there to support their child on this journey. We aim to provide our professional mentors with an inspiring opportunity to teach future generations and help our team solve problems, challenging all of us to grow.

For our Community

FIRST is more than robots; it is also about benefiting and educating those around you. This is why we are active in our community in various ways, such as giving demonstrations and volunteering. For example, our team helps set up for Hands on Transportation, an event designed to teach children about various modes of transportation, different vehicles, and the science behind them. This is also an example of an event where we demonstrate our robots and other creations.

We also give various demonstrations at Imagination Station, the local hands-on STEM museum. We send team members to teach young children about coding at their monthly CoderDojo Strike event. As mentioned previously, our team also volunteers frequently. We also send members to help with a Repair Café at the Northend Community Center, an event for people in the community to bring in their damaged devices and machines for our students and other volunteers to repair.

For our Sponsors

Sponsorships are invaluable to the success of our team. Running an FRC team year to year simply comes with a high price tag. Each year we spend thousands of dollars building a robot to compete with. The competitions themselves also costs thousands of dollars just to register, not including travel and putting students in hotels. Without sponsors, none of that would be possible for our team.

Sponsors are essential for more than just funds. We need them for food, equipment, manufacturing parts, services, and machine time. Our team spends thousands of dollars on the robot, not accounting for regularly donated services. In-kind sponsors donate goods or services rather than funding as their sponsorship contribution. Our team spends at least 23 hours per week during build season working on the robot. It is important to keep our team well fed during these times, sponsors often help feed us on our weekend practices. In-kind sponsors have also helped us with construction materials for our field. One example of in-kind sponsors would be companies that anodize our robot or waterjet cut parts.

In return for what our sponsors do for us we provide certain levels of advertisements to benefit them. When we present our robot in demonstrations or attend events as a team, we always wear our team shirts with sponsors on the back and display our sponsors on the robot as well. Our team also occasionally gives demonstrations upon the request of our sponsors. The level of advertisement depends on how much was donated. In the case of an in-kind sponsor we take an estimated dollar amount for the service, product or equipment given.

The levels of recognition for our sponsors are as follows:

Under \$99: Name listed on team website, thank you letter.

\$100-\$499: Line of text on team robot, thank you letter, website.

\$500-\$999: Line of text on team t-shirt, small logo on team robot, thank you plaque.

\$1,000-\$1,999: Small logo on team t-shirt, medium logo on team robot, thank you plaque.

\$2,000 and above: Recognition at the start of competition match, medium logo on team t-shirt, large logo on team robot, thank you plaque.

Recruiting New Members

Our recruiting process starts by hosting team callouts at the beginning and end of each school year. We advertise these callouts by posting fliers around our school, but we cannot expect fliers to attract the necessary amount of students. One on one interaction with people is a more effective method for convincing new students to join our team. By doing outreach events we can attract more people to join the team, while answering any questions they may have about the program.

We also strive to build up a progression of FIRST programs in schools that feed into our high school. Some ways we work towards achieving this include participating at elementary school science nights, mentoring FLL teams, and hosting summer camps. Additionally, we ensure that we extend our spring outreach efforts to our middle school, especially targeting the eighth grade students who could start attending our meetings over the spring and summer.

Team Organization



Team Roles

Listed below are each of the leadership positions featured in the team organization and their respective roles on the team.

Coaches

All coaches are teachers at Jefferson High School.

- Communicate with the school
- Handle over-all finances
- Maintain any necessary resources
- Lead other mentors

Mentors

- Supervise the team
- Guide and teach students by working with them on projects
- Keep the team on schedule and adjust as needed
- Make small-scale purchases for the team

Business Officer

- Manage team's public representation and organization
- Handle all student-submitted awards
- Maintain clear communication of team goals/information
- Keep records of overall team finances
- Lead structured team meetings

Technical Officer

- Set/maintain schedules for team projects
- Be responsible for inter-subteam communication
- Keep records of project finances (specifically, the Cost Accounting Worksheet)
- Appoint a team safety captain and ensure safe practices
- Lead structured team meetings

Current Positions

Head Coach

- The Almighty Bettag

Lead Mentors

- Carl Lee Landskron
- Jill Rubacha

Business Officer

- Vacant

Technical Officer

- Jasmine Widgery

The other leadership position that I don't remember that name of

- Currently blanking on who is even on it...

Mentor Configuration



Student Expectations

Students are held to standards explained in the team handbook above all else. This document contains general expectations for the students on our team. These expectations are in place to guide students in representing our team appropriately and with professionalism while building their own character as well.

Behavior

Students are to respect each other as well as the team's mentors, parents, sponsors, and themselves at all times.

Students should conduct themselves in a professional manner at all times. This means dressing appropriately for an event or meeting, using appropriate language, maintaining proper hygiene standards, etc.

Students are expected to maintain a team-first attitude. Students are expected to put what is best for the team ahead of their own ambitions.

Attendance

Students are expected to be active participants on the team during both the build season and the off-season as well as during additional events. More specific guidelines regarding attendance can be found in the handbook.

Grades

School is the first priority for all students on Team 1646. Students should not use robotics as an excuse for poor grades. Students traveling with the team should notify their teachers as early as possible.

Mentor Expectations

Much like we have high expectations for our students, we also have certain expectations of our mentors. A mentor's job is primarily to guide and to teach. Their role is not to do the project for students, but to guide students in the projects they undertake. As students build up their skills, they can be more independent with the project at hand. The mentor's goal should always be to help students reach that point of independence. Mentors should keep an open mind and support creativity. We appreciate mentors who can be fun but still maintain professionalism. It is of utmost importance that our mentors be accepting of students all of types, as inclusion is foundational to our team's spirit. We expect mentors that can adapt to our team culture, while bringing past experience and knowledge of their own to aid us in reaching our goals.

Dress Code

Competitions

In order to maintain a professional appearance, the team has a dress code for competitions. The chart below details what students should wear on a given day of competition.

	Practice Day	Qualification Matches	Final Day of Competition
Shirts	Team T-Shirts from 2018 or later	Current Year's T-Shirt	Current Year's T-Shirt
Pants	Jeans/Khaki Pants	Jeans/Khaki Pants	Khaki Pants

Any pants worn to competition should not be ripped or faded. Skirts, dresses, tights, and leggings should not be worn at competition. If shorts are to be worn they must be khaki shorts.

It is mandatory that students wear closed toed shoes at competition. Students who do not wear closed toed shoes will not be allowed in the pit area and around the competition field.

Outreach and Other Team Events

Due to the team's job as teachers and robotics mentors to the community, we desire a uniform and professional appearance at our outreach and other special events. Students should wear khaki pants or jeans and their team polo or the current year's shirt. Certain events will have specific attire to best fit the context of the event.

Goals

One Year Goals

By 2020 the team aims to:

- Increase the number of outreach events by 5 events
- Raise funding by at least \$1,000
- Gain 10 more members

Three Year Goals

By 2022 the team aims to:

- Qualify for Worlds
- Increase the number of outreach events by 15
- Raise funding by \$1,750
- Increase number of members by 15

Five Year Goals

By 2024 the team aims to:

- Win District Chairman's Award
- Gain 20 more members
- Increase funding by \$2,500

Risk Assessment

Failure to teach new members

- Low probability
 - There is a strong understanding that this teaching needs to happen and it will happen one way or another.
- Effect: During build season new members will not know what they are supposed to do
- Prevention: Have experienced members teach during the fall season

Loss of sponsors

- Medium probability
 - If the team fails to advertise themselves or does not fulfill their promises the team may lose sponsors
- Effect: Without sponsors the team would not have enough money to build the robot or travel for competitions
- Prevention: Fulfill our promises, follow up with past sponsors, and

Loss of important files

- Low probability
 - Files kept on the school server may be lost unexpectedly, though it is not likely.
- Effect: Important data is lost; files are hard to replace or recover
- Prevention: Keep files in multiple places, keep copies of important documents on team Google Drive.

Lack of mentors

- Low probability
 - The majority of our mentors are college students and they cycle through every few years as they graduate. There is usually a new set of college students looking to mentor a team each year, even enough to replace the graduating college students.
- Effect: No steady support from adults would lead to a lack of leadership and direction for the students.
- Prevention: The lead mentor is in charge of recruiting and keeping mentors on our team.

Loss of build room

- Low probability
 - The school corporation currently does not have a negative view of our team
- Effect: Without a build space the team would need to come up with more funds than usual to rent a space to hold meetings.
- Prevention: Maintain good communication between the team and the school and represent the school appropriately.

Mass student loss

- Low probability
 - Once a core group of students is established for a season, that number tends to only fluctuate by a small number.
- Effect: If there is a major loss of students the team will not be as efficient or successful.
- Prevention: Keep a positive, friendly environment and help peers with school work to pass grade checks.

Mass senior group

- Medium probability
 - In any given year, the number of seniors is largely up to chance depending on previous years' recruiting efforts and season success.
- Effect: When they graduate, those students take some of their experience with them.
- Prevention: Focus on recruiting and retaining underclassmen.

Loss of Coach Bettag

- Low probability
 - Mr. Bettag does not plan on retiring or leaving the team soon.
- Effect: the team must find another teacher to support the team and may lose school support.
- Prevention: Maintain open communications with Bettag so we can prepare for his absence when the time comes.

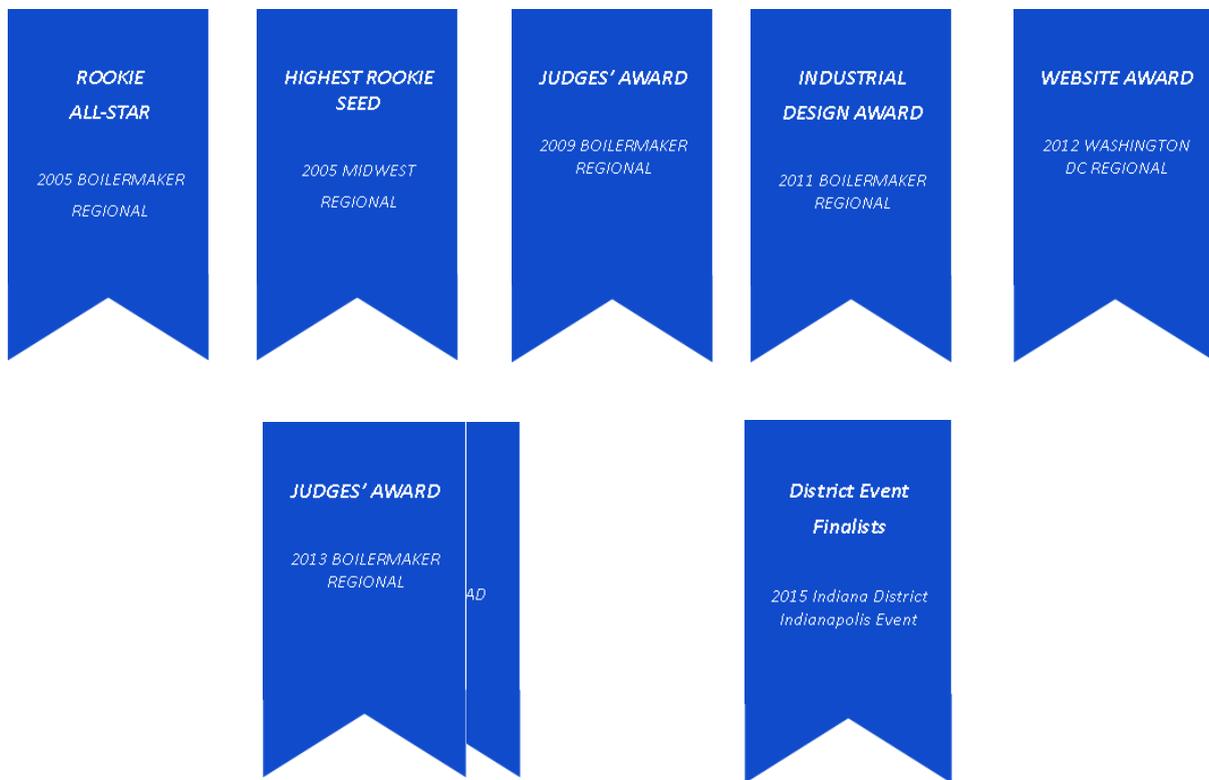
Lack of new members

- Low probability
 - We have dramatically increased our recruiting efforts and with a more successful season we should attract more students.
- Effect: Without new members the older members will not have anyone to pass their knowledge on to and the team will shrink in numbers.
- Prevention: Maintain focus on recruiting and keep new students coming back.

Losing manufacturing connections

- Low probability
 - We have reliable connections with people and companies who are long-time supporters of FIRST teams and students.
- Effect: We would lose the ability to do things like waterjet cut and anodize our robot and would have to find new ways to manufacture.
- Prevention: Communicate effectively with those sponsors and be gracious recipients of their assistance.

Awards



NEW!

Execution

This year, in order to achieve our goals for team growth, we have initiated a rebrand and a major branding push. We are highly promoting our new branding standards and improving our team image because our presence as an FRC team was largely unknown. Part of this rebrand included changing our logo due to copyright concerns. We have changed our logo from the *Purdue Athletic P* to our new *Precision P*. We have added three converging arrows to our logo to signify the “Precision” in Precision Guessworks. Each arrow also represents one of the three tenets. We also added a silver color into our branding as an accent color to use in our designs.

We are doing more outreach events to attract people to join the team, teach children about STEM, and increase our presence in the community. We have increased the number of both students and mentors on the team by improving our recruiting methods and boosting our team image. We are also working to improve our connection with sponsors, by keeping in contact with them via emails and newsletters.

Previous Year's Budget

Dates (6/1/17-6/28/18)	Reference	Revenue Amount	Expended Amount	Balance
6/1/17	Report Beginning Balance	0	0	13,112.31
8/22/17	Reimburse Supplies	0	192.50	12,919.81
10/6/17	E-WASTE/ FEES/ DONATIONS	916	0	13,835.81
10/9/17	Reimburse Supplies	0	333.98	13,501.83
10/9/17	Reimburse Supplies	0	8	13,493.83
10/9/17	Robotics Supplies	0	98.14	13,395.69
10/10/17	Robotics Team Shirts	0	349.05	13,046.64
11/13/17	DONATIONS/ SHIRT MONEY	600	0	13,646.64
11/15/17	Sunnyside Robotics	0	219	13,427.64
11/28/17	SPONSOR/ DONATION-SO UTHWIRE	2,000	0	15,427.64
12/19/17	Reimburse Supplies	0	350	15,077.64
12/19/17	DONATIONS	665	0	15,742.64
12/20/17	SPONSOR-WI NTEK	600	0	16,342.64
1/16/18	DONATIONS	350	0	16,692.64
1/23/18	Robotics Supplies	0	268	16,424.64

1/24/18	Robotics Supplies	0	587.70	15,836.94
1/29/18	SPONSOR/ DONATIONS	750	0	16,586.94
2/12/18	Robotics Supplies	0	103.88	16,483.06
2/12/18	Reimburse Supplies	0	48.76	16,434.30
2/12/18	Robotics Supplies	0	152.70	16,281.60
2/12/18	DONATIONS	250	0	16,531.60
2/13/18	Robotics Supplies	0	901	15,630.60
2/20/18	Reimburse Supplies	0	204.29	15,426.31
2/20/18	Robotics Team Supplies	0	18.43	15,407.93
2/20/18	DONATIONS	501	0	15,908.93
2/27/18	Robotics Supplies	0	25.56	15,883.37
2/27/18	Reimburse Supplies	0	32.97	15,850.40
3/6/18	Robotics Supplies	0	66	15,784.40
3/6/18	Robotics Supplies	0	73.80	15,710.60
3/14/18	Robotics Supplies	0	103.35	15,607.25
3/20/18	Robotics Team Lunch 3/24/18	0	162	15,445.25
3/20/18	Robotics Team Lunch 3/25/18	0	147	15,298.25
3/20/18	SPONSOR	300	0	15,598.25

3/22/18	Robotics Team Food Order 3/30/18	0	112	15,486.25
3/22/18	Reimburse Supplies	0	130.29	15,355.96
3/22/18	Robotics Team Shirts	0	432.90	14,923.06
3/22/18	Reimburse Supplies	0	54.99	14,868.07
3/22/18	Robotics Team Meal 3/29/18	0	143	14,725.07
4/2/18	Robotics Supplies	0	142.23	14,582.84
4/6/18	DONATIONS/ SHIRTS	610	0	15,162.84
4/9/18	Reimburse Supplies	0	99.81	15,093.03
4/9/18	Robotics Supplies	0	52.74	15,040.29
4/17/18	Reimburse Supplies	0	564.62	14,475.67
6/26/18	Robotics Supplies	0	106.49	13,310.58
6/28/18	Robotics Supplies	0	326	12,984.58
6/28/18	Reimburse Pizza	0	37.06	12,947.52
6/28/18	Robotics Supplies	0	675.43	12,272.09
6/28/18	Reimburse Supplies	0	242.95	12,029.14

The Past Five Years

~~2014- We took part in an Easter “Egg”stravaganza at a local church in the spring of 2014. At this event we showed off our current 2014 robot to the community. Precision Guessworks went to Boilermaker and Queen City Regionals in 2014. During the offseason we competed at the CageMatch off-season competition in Indianapolis, Indiana. At CageMatch we won with our previous season’s robot, Overbyte.~~

2015- This was the first year that we had our own work space that was dedicated to just us. Previously the team had been working out of the school's machine shop, which was shared with other people. The new work area was much more spacious and private to our team. In this same year Indiana FIRST started hosting district competition along with the regional competitions. We attended three district competitions during this year, and were district finalists at one of them. Barnes and Noble hosts a mini maker faire, and this was the first year that we were asked to do demonstrations of our robot and volunteer work for them.

2016- The team attended the Easter “Egg”stravaganza that the team also attended in 2014. For the second year in a row that Precision Guessworks was invited to participate at the Barnes and Noble mini maker faire. We competed in two competitions this year, the Walker Warren and Tippecanoe District event.

2017- There was a complication between two mentors that resulted in a division of the team early in the build season. This caused a detrimental rift in the team and lead to a large loss of students and dramatically decreased productivity. The few students left on the team in the aftermath had to work hard to build the team back up. Ummmm, Get rid of this????

NEW!

2018- Our team participated in Hands on Transportation, hosted by imagination station, exposing children to and teaching them about various modes of transportation and different vehicles. We attended a “mini” Maker Faire in Lafayette. Breakfast with Santa held by SIA was a fun outreach event for our team and the children we met. The team volunteered at Natalie’s Second Chance shelter to walk dogs every month. Elementary science nights were held at Vinton, Miller, and Sunnyside. Coderdojo, held at Imagination Station every month, immersed children into the world of programming through fun activities. We continued to hold the E-waste drive to collect electronic waste and scrap metal from the community, preventing it from ending up in landfills. Over the summer the team helped out with Youth YMCA camp for robotics in manufacturing, spending two weeks teaching children about local manufacturing businesses and helping them build and program robots.

2019 -