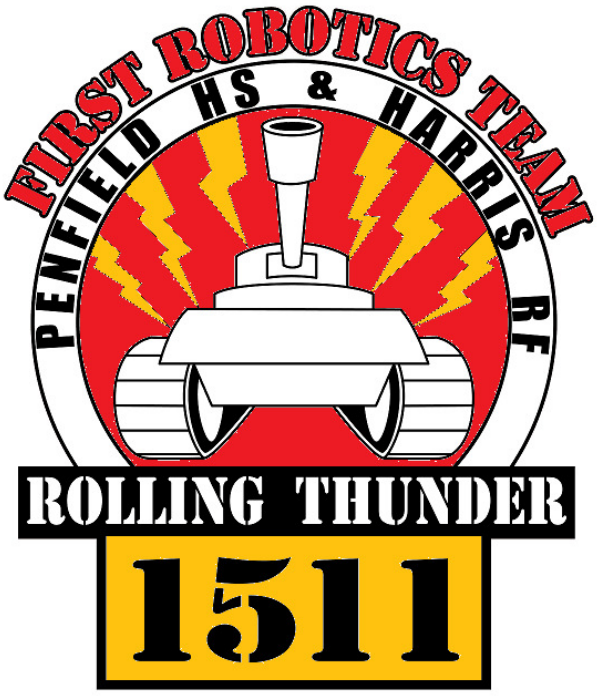
Team 1511 - Rolling Thunder
Member Handbook
2012 - 2013



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FIRST Robotics Team 1511 in one page or less!

What do we do? We design and build a really cool robot, and compete against other robots in a game that's different each year! But it's more than just building a robot – our team operates like a small business and feels like a family. We have different "subteam" groups that handle everything from marketing and fundraising to website design and electrical work. Even if you have no idea how to hold a wrench, there's something for you here, and we'll teach you how!

Why? Because it's FUN! Along the way, you can learn technical skills from mechanical and electrical work and computer programming, but you'll also learn about teamwork, leadership, respect, and integrity.

What are the basics? Team 1511 works with engineering and business mentors (most of them from our main sponsor, Harris Corporation). During the fall, we have "subteams" that learn about specific things we'll need when it comes to building the robot and running the team. In early January we learn what this year's game will be, and from then through mid-February we design and build our robot! During March and April, we travel to competitions and have a great time meeting other teams, checking out all the different robots that have been built, and of course cheering for our robot. Once the competition season is done we relax, do fun events over the summer, and plan for the next year.

What do team members do? Participate - your participation (see Achievements on page) determines whether or not the team will pay for you to travel to the competitions, where the big excitement is! But don't worry if your schedule doesn't allow a huge time commitment. You can be on the team to whatever degree your schedule allows – the only difference is that you may need to contribute to the travel costs if you go to the competitions. (As with any school team, you'll need to keep your grades up and behave appropriately.)

What's in it for you? Besides building a really cool robot, you mean? How about hands-on learning from people who do real-life engineering and business management every day? Or great experiences with a team of fun students? Or lots of college scholarship opportunities? Over **$15 million** of scholarship money is available to students who participate in *FIRST* robotics during high school! It looks great on your college application, too – and your mentors can write recommendations for you!

Where can I find more info? On the web, our team's website is www.penfieldrobotics.com, with forums at www.penfieldrobotics.com/forum. You can get information on the *FIRST* organization at www.usfirst.org. More information (and useful forums) are at www.chiefdelphi.com.

Welcome to Robotics!!!

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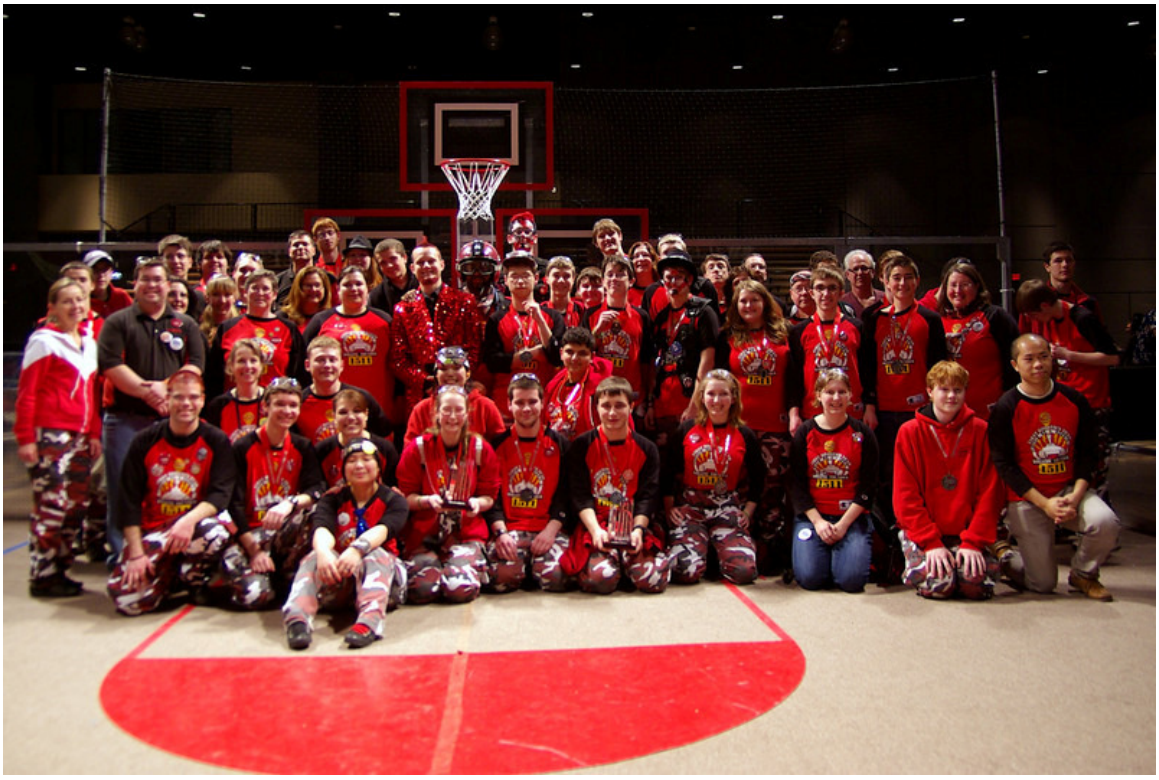
1. INTRODUCTION

Welcome to *FIRST* (For Inspiration and Recognition of Science and Technology), the nation's pre-eminent robotics competition for high school students. The message of *FIRST* is to inspire young people, their schools, and communities with an appreciation of science and technology. You'll learn to perform high quality, well-informed work while learning and competing intensely, but treating one another with respect and kindness in the process – this is called "Gracious Professionalism." As a member of the *FIRST* family, you will enjoy the satisfaction of knowing that you have acted with integrity and empathy. *FIRST* is not just about robots; it's about ideas and people, too.

***FIRST* Robotics Competition (FRC)**
The *FIRST* Robotics Competition is an exciting, international competition that teams professionals and young people to solve an engineering design problem in an intense and competitive way. The program is a life-changing, career-molding experience—and a lot of fun! The competitions are high-tech spectator sporting events, the result of a lot of focused brainstorming, real-world teamwork, dedicated mentoring, project timelines and deadlines. There is more to FRC than building a robot. It's a complex exercise in project management, which entails a lot of work that doesn't require a technical background.

***FIRST* redefines "Winning."** Teams are rewarded for excellence in design, demonstrated team spirit, gracious professionalism, maturity, and ability to overcome obstacles. Scoring the most points is a secondary goal. "Winning" means building partnerships that last.



Rolling Thunder is *FIRST* Robotics Team 1511, of **Penfield High School** in Penfield, New York. It was founded in the spring of 2004 through a partnership with **Harris Corporation**. Harris RF Communications Division (RFCD), located in Rochester NY, is a leading supplier of secure voice and data communications products, systems and networks to military, government, and commercial organizations worldwide.

1.1. Mission

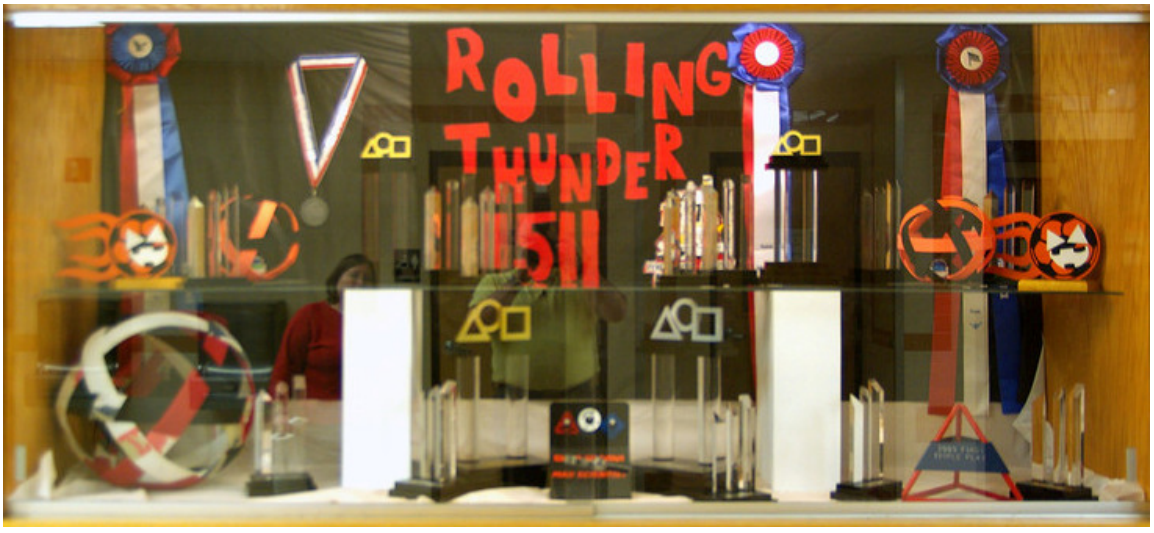
Team 1511 Mission Statement - **"Inspiring students to become leaders through engineering and the fun of FIRST robotics."**

Team 1511 Goals:

- To develop **leadership** within all of our students.
- To focus on promoting ***FIRST* Lego League** in middle school aged students around Rochester.
- To involve our team in the **community**, promote a sense of responsibility in our team members, and reach out through our 1511 Thunderbolts Goal.
- To focus on **organization and communication** to make our team more efficient and effective.
- To promote **education** through the Penfield School system and through our team. Schoolwork is a priority and we will help every student succeed, in addition to providing them with education on robotics, science and technology.
- To put focus on the **Engineering Design Process**, and develop our team and build season around this process.
- To promote **student growth**, the growth of the team, and to build the sense of family and morale within our team.
- **Raise funds** to support our team and keep it self-sustained for many years to come. Funds also support our FIRST LEGO League (FLL) and Junior FIRST LEGO League) Jr. FLL initiatives.
- To have **LOTS OF FUN!** Our team is a family of friends and we all love to have fun together.

1.2. History / Awards

Team 1511 started in February of 2004 with a small core team of two parents, teacher Linda Sterber (PHS Technology Teacher), and FIRST alum/mentor, Kim O'Toole Eckhardt. The group laid the groundwork for the foundation of the team in the fall of 2004 with the new student class. Each year since, the team has recruited a strong freshman class, and several mentors from Harris and the community. In 2009, Larry Lewis (Harris RF Corporation) became the team leader and has continued on Team 1511's traditions.



Each year, the team has competed in various Regional events plus the Championship event. The awards won each year are listed below.

2005 Awards			
March 3-5	**Finger Lakes Regional**	Rochester, NY	**Rookie All Star**
March 24-26	**Buckeye Regional**	Cleveland, OH	**Highest Rookie Seed**
March 31-April 2	**Toronto Regional**	Toronto, ON	**Rookie Inspiration** **Daimler Chrysler Team Spirit** **Regional Champion (1st place)**
April 21-23	**2005 Championship**	Atlanta, GA	**Championship Rookie All Star**
2006 Awards			
March 9-11	**Finger Lakes Regional**	Rochester, NY	**Engineering Inspiration**
March 23-25	**Boston Regional**	Boston, MA	**Imagery**
2007 Awards			
March 6-8	**Finger Lakes Regional**	Rochester, NY	**Regional Chairman's**
March 22-24	**Boston Regional**	Boston, MA	**Daimler Chrysler Team Spirit** **Website Award**
2008 Awards			
March 8-10	**Finger Lakes Regional**	Rochester, NY	**Engineering Inspiration**
March 27-29	**Philadelphia Regional**	Philadelphia, PA	**Imagery** **UL Industrial Safety Award**
2009 Awards			
March 5-7	**Finger Lakes Regional**	Rochester, NY	**Entrepreneurship Award** **Regional Finalist (2nd place)**
March 19-21	**Chesapeake Regional**	Annapolis, MD	**Regional Chairman's** **Imagery** **Website Award**
April 16-18	**2009 Championship**	Atlanta, GA	**Judge's Award**
2010 Awards			
March 4-6	**Finger Lakes Regional**	Rochester, NY	**Engineering Inspiration**
March 25-27	**Boston Regional**	Boston, MA	**Regional Chairman's** **Regional Finalist (2nd Place)** **Coopertition Award** **Dean's List Finalist**
2011 Awards			
March 3-5	**Finger Lakes Regional**	Rochester, NY	**Gracious Professionalism** **Dean's List Finalist**
March 24-26	**Washington DC Regional**	Washington DC	**Regional Chairman's**
2012 Awards			
March 8-10	**Finger Lakes Regional**	Rochester, NY	**Innovation In Control** **Woodie Flowers Award** **Volunteer of the Year** **Dean's List Finalist**
March 29-31	**Northeast Utilities Regional**	Hartford, CT	**Engineering Inspiration**

The team is proud of the variety of awards it has received as it shows the strength and well-roundedness of the team. Our three highest awards are the Regional Chairman's, Rookie All Star, and Engineering Inspiration awards.

Chairman's: *FIRST*'s most prestigious award, it honors the team that best represents a model for other teams to emulate and best embodies the purpose and goals of *FIRST*. The award helps keep the central focus of the *FIRST* Robotics Competition on the goal of inspiring greater levels of respect and honor for science and technology.
Rookie All Star: Celebrates the rookie team exemplifying a young but strong partnership effort, as well as implementing the mission of *FIRST* to inspire students to learn more about science and technology.
Engineering Inspiration: Celebrates outstanding success in advancing respect and appreciation for engineering within a team's school and community. This is the second-highest award a team can garner.

While the awards are amazing, the real success is the number of students we have inspired in science and technology. Many of our graduating seniors have gone into fields related to science, technology or business, and a growing number of team alumni stay involved with the team in some way.

2. BASIC CALENDAR/ SCHEDULE

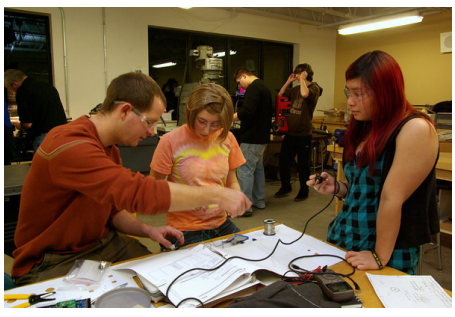
The **Team Calendar** is officially hosted on the team forums (www.penfieldrobotics.com/forum) – this is the most accurate and up-to-date listing of team activities.

The Robotics Team meets year-round with varying levels of involvement by the "seasons," defined as preseason, build, competition, and summer. Throughout the seasons, there will be events such as community service participation, demonstrations, and fundraising.

2.1. Preseason

Preseason goes from the beginning of **September to the end of December**. During the preseason there will be **approximately 15 weekly team meetings**, 6:00 PM - 8:00 PM on Tuesdays at Penfield High School. Part of the time will be to cover team management, including administrative tasks, the plan for the coming week and any upcoming deadlines. The remaining meeting time will be used for presentations, training, work-sessions, or team building activities. The team will use the preseason as a time to do team building, fundraisers, community service, and to learn about the necessary skills needed for the upcoming build season.

2.2. Build Season



Build season is the period of **January through mid February (six weeks long)**. Kickoff is in early January, and following that the team will meet Tuesday through Thursday evenings and Saturdays and Sundays. Team members don't have to attend every meeting, but are expected to put in productive hours helping to design and build the robot. The team will also host the Rochester Rally pre-ship event for local area teams. The robot will ship after the Rally.

2.3. Competition

Competition season is **March through April**, when the robot and the team travel to regional competition sites. Typically, the team will compete in the RIT Finger Lakes Regional, another March event such as the Boston Regional or the Philadelphia Regional, and if we qualify, the International Championships in St. Louis in mid-April. This is the height and excitement of the robotics season!!

2.4. Summer

Summer season runs **May through August**, and meets every week for those interested, with a kickoff meeting at the start of school. Summer is a great time to get started on activities and projects prior to preseason, and a good time to do demonstrations, fundraising and community service. The Leadership team (see section 5) will be formed at the end of the competition season to take full advantage of summer to plan the next season.

3. STUDENT EXPECTATIONS

Students on Team 1511 should be **actively involved** with the team. Depending on school and extracurricular schedules, some students may be able to participate more fully than others. **The level of participation determines whether or not a student's trips will be paid for during competition season.** Students are expected to show up **on time** for team meetings and events.

Students will put priority on their grades over any team need. **Grades are important**. Students must complete school work before participating in team work sessions and activities.

All members are encouraged to participate in **community service** and **fundraising** activities throughout the year. Both of these activities are vital for the success of the team – and they're a great way to have fun with your teammates!

3.1. Student Commitment

Participating in *FIRST* requires energy and time, but the effort will make a positive impact in the lives of many other people. Attendance is taken at all activities, and it is the **student's responsibility to sign in**. All students are expected to show up on time and to stay for the required amount of time. Exceptions or special needs may be discussed with the team leader prior to the meeting(s). Every team member will be allowed to travel to competitions, regardless of their level of participation, but **payment for travel from team funds will be determined by the student's participation**. A checklist of achievements that are required in order to have trips paid for is at the end of this handbook. **Completing achievements is not mandatory to be part of the team or go on trips.**

New and returning student achievements are detailed separately. Returning team members have higher expectations placed on them as they usually participate over the summer doing fundraisers, community service and demos. **New students are defined as those who have NEVER participated in Team 1511.**

Recording of activities for each year's achievements **starts after competition season (mid-April) by a team mentor**. They will be saved in an online database at www.penfieldrobotics.com/achievements for students to view their progress. **Students can only login to this database if they are registered on the team forum!**

Here is a brief outline of the achievement levels:

Achievement Levels

There are 5 levels of Achievements that you can earn: 100%, 75%, 50%, 25% and 0%.

100%: You have completed all achievements. Your only cost for travel will be the deposits.

75%: You have completed most of your achievements, including ALL fundraising, but a few minor achievements have not been completed (i.e. attended only 1 of 2 FLL events, participated in only 2 of 3 robot demonstrations). You will only have to pay the deposits and 25% of the trip costs.

50%: Most students reach this level with a normal amount of team participation. You have participated in most achievements, but have not fulfilled all of them. You will have to pay the deposits and 50% of trip costs.

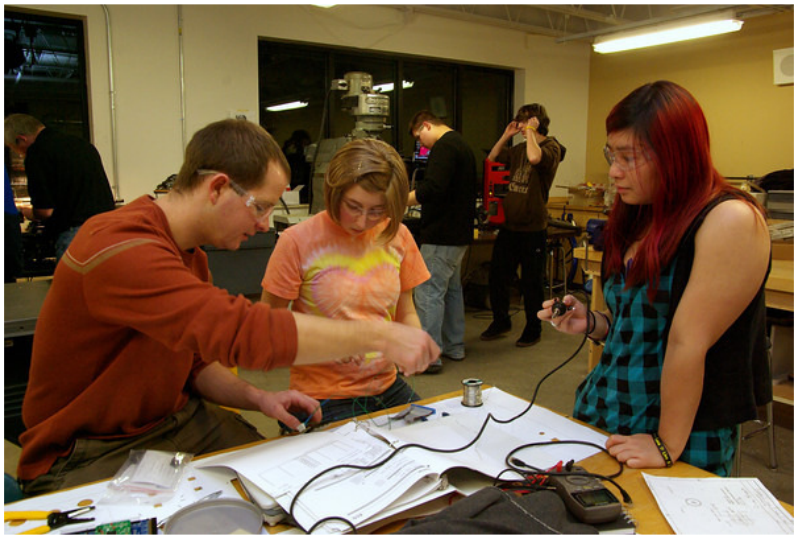
25%: You have very minimal involvement on the team, perhaps only participating in Preseason or Build Season. You will have to pay the deposits and 75% of trip costs.

0%: This is very difficult for a team member to get if they truly are a team member. This is if you have signed up for trips, but you have never attended a team activity. You will be responsible for paying all deposits and total trip costs.

HINT: Just because you completed an achievement, does not mean that you should stop participating (i.e. you attended 3 demonstrations and do not participate in anymore demonstrations). Your achievement level may go UP if you go above and beyond by participating in more than the minimum achievement requirement!

3.1.1. Achievements Outlined in Detail

This section discusses the expectations for students who want full payment for their trips. It is the responsibility of the **entire team** to make sure that there are adequate opportunities to fulfill the achievements. Though the Leadership team will provide guidance, all students, parents, and mentors are encouraged to head up activities that the team can participate in. It is up to the **students** to take responsibility to fulfill achievements. All students are encouraged to lead activities that they may need for achievements.



3.1.2. Team Meetings

Team members are expected to participate in team meetings, work sessions, community involvement, and fundraising events during the preseason and build season.

3.1.2.1. Preseason

New students are **required to attend at least 50%** of weekly team meetings to meet the achievement goal. Returning students will be **required to attend 10 of 15** meetings. In the preseason, subteams will meet separately and establish their own agendas. Subteam meetings cannot be counted as substitutes for full team meetings.

3.1.2.2. Build Season

Each new team member must invest at least **50 hours** of time during the build season (which can include up to **10 homework hours**) to meet the achievement goal. Each returning team member must invest at least **60 hours** of time (which can include up to **10 homework hours)** to meet the achievement goal.

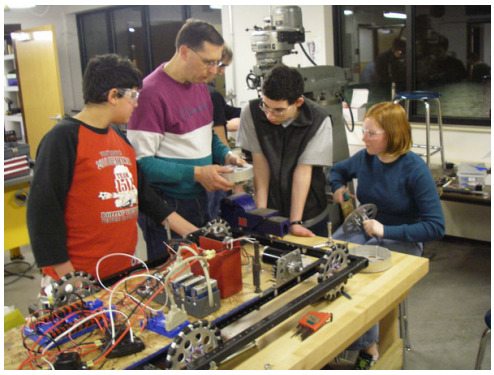
A **suggested schedule** of participation to obtain the minimum hours would be 4 hours a day for 6 weekend days (24 hours), and 3 hours a day for 12 weekdays (36 hrs), including homework. However, students can put in hours in many ways to suit individual schedules. They **must be PRODUCTIVE hours**. Students will be required to do timecards on a regular basis and get a **mentor to sign off** on their hours, verifying that they have used the time to benefit the team.

Although this may seem like an overwhelming amount of hours, most students easily surpass this amount and fulfill this achievement.

3.1.2.3. Homework Hours

Each student can apply **up to 10 homework hours** toward their build season hours. Students are welcome to work on homework at build season meetings even if it exceeds 10 hours. These hours must be conducted in the presence of a team mentor, at a team study session, or with the team teacher(s). The idea is to provide the students with a quiet location in which to assure they are completing their assignments during the hectic build season.

3.1.3. Subteam Participation (Preseason)



All students will be required to **participate in at least one subteam during** the preseason. The student must attend a minimum of **50% of ONE subteam's meetings**, and must **declare their main subteam by 9/28**. If a student is on multiple subteams, the achievement applies to the student's main subteam. For example, if a student is on the electrical and mechanical subteams, and only attends 25% of each subteam's meetings, that DOES NOT add up to 50% attendance. The idea is to **put quality work into at least one subteam**, and then branch out beyond that as the student is interested. (Note that the strategy subteam may not be attended as a main subteam.)

3.1.4. Community Service and Robot Demonstrations

Making a difference, not just a robot!

The purpose of our team participating in community activities is to **serve our community and to spread the word about the *FIRST* program, gracious professionalism, and Team 1511.** Community activities will be posted on the forums and the calendar. Suggestions for community involvement are always welcome and encouraged!

All new students need to put in **at least 3 hours of community service** time and participate in at least **one activity** to meet the achievement goal. Returning members need to put in at least **10 hours** and participate in at least **3 community service activities**. This means, for example, a returning student can participate in two 4-hour activities and one 2-hour activity, and their achievement is complete.

Every new student will need to participate in **one robot demonstration** to meet the achievement goal. Each returning student will be required to participate in **three demos**, and **organize a robot demonstration or community service event**.

3.1.4.1. Summer Fairs

This is a **returning member** achievement only. Our team participates in two large events over the summer, the Monroe County Fair held in mid-July at the Dome Arena in Henrietta, NY and the New York State Fair in late August in Syracuse, NY. Returning students are required to put in a total of 10 hours at the fair(s) in any combination (i.e. a student may fulfill all 10 hours at one fair). The hours can include participating in set up and break down of our events.

3.1.5 Fundraising

Fundraising is an important part of the team's budget – the more money we raise, the smaller the deposit each student has to make for travel to competitions! Every student is expected to participate in the team's fundraising efforts.

3.1.4.2. Patron drive

Sponsorship from businesses is an easy way to raise money, and a great way to get out the word about Team 1511 and *FIRST* robotics! Each new student will be expected to **EITHER visit 5 businesses, OR get $250 in donations** towards the patron book. Returning students must visit **10 businesses or get $500**. Students may work as teams, but each individual student must have a list of separate businesses or donations amounting to $500. For example, if two returning students go together, they will be expected TOGETHER to visit 20 businesses or obtain $1,000. The team will do its best to divide up donors from prior years, but students who obtained the sponsorships in prior years will be given preference.

3.1.4.3. Organizing Fundraisers

Every returning student will be **expected to help organize at least one fundraiser**. Organization teams can be from 2-4 students, depending on the size of the event. The organization group will be responsible for all publicity, announcements, forms, estimates, sign-ups, etc. For students to earn their fundraiser achievement, a fundraiser should bring in at least $50 per organizer, after any costs.

3.1.4.4. Participation in Fundraisers

To meet the achievement goal, every new student will need to **participate in at least 3 fundraisers**, and every returning student will need to **participate in at least 5 fundraisers**, before the preseason ends. (The Patron Drive, Pizza/Candy Sales, and Car Wash are separate events and do not count toward the fundraiser achievement.) If a fundraising event is large enough scale to necessitate the planning be done by more than one individual than those two or more people will receive a fundraising credit. Fundraisers must be approved by the leadership team and the school before occurring. Please refer to the Wiki on our website for instructions on how to do a fundraiser.

3.1.4.5. Car Wash

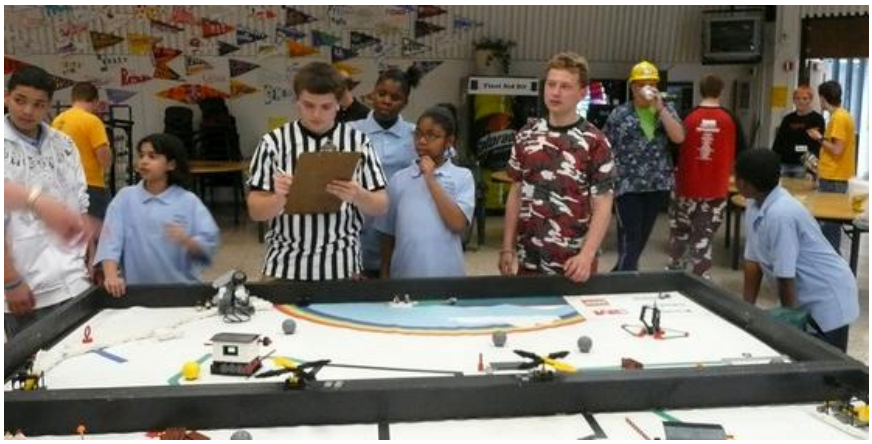
Every returning student must help out with at least one car wash fundraiser in order to meet the achievement goal. Because car washes are generally held over the summer, new students do not need to fulfill this achievement.

Team Uniforms MUST be worn to ALL team events (community service, fundraiser and demo) in order to receive credit for the activity. For new students red shirts/sweatshirts or PHS attire will be sufficient.

Each activity will have a student responsible for organizing the activity, communicating it to the volunteers, and arranging for transportation, a camera and a team adult participant. **Students WILL NOT receive credit for activities for which no photos were submitted**, so it is in the best interest of all students involved to ensure that photos are taken and turned in.

3.1.5. FIRST LEGO League (FLL) Involvement

To meet the achievement goal, each new student must participate in at least one FLL activity, and each returning student must participate in two FLL activities. This can be volunteering at the FLL kickoff or Tournament, mentoring a team, doing a demo or a camp for an FLL team, or helping at any other Team 1511 FLL related activity.



3.1.6. Parental Involvement

The team does a lot throughout the entire year and can always use parent volunteers in many facets. Here's a great way that parents can save money on student trips to competitions and understand what goes on with the team – meet these simple and fun achievements!

Parents/guardians need to:

- Attend a Parent Info Session at the beginning of the year
- Attend mandatory pre-travel meetings
- Attend one team event during the year prior to competition (fundraiser, community service, demonstration, etc.)
- Attend at least one of the following "competition" events in the Rochester area: Ruckus (late October), Rally (mid-February), or FLR regional (early March)
- Provide at least one meal during build season (see section 3.1.8 below)

Section 4.2 details more fun ways that parents can be involved with the team and help out!

3.1.7. Family Brings A Meal

Every family is asked to bring at least one meal during the build season. There will be approximately 45 meals needed during build season. Mentors and students work very hard during this time, and it is important for them to be well nourished. The mentors are providing their time and expertise on a volunteer basis – they are not paid! A tasty meal is a wonderful "thank you" for the effort they put in.

Meals include dinner during the week (Tues - Thurs), and lunch and dinner on the weekends. Meals can be very simple (like ordering pizza, subs, or Chinese food) or as elaborate as you may want. You will receive full information by email in December so that you can sign up for the meal(s) you'd like to provide.

There are additional ways (very much appreciated!) that families can help out if they choose to:

Paper products: We need plates, napkins, and cups throughout the entire pre-season. We also need plates, napkins, cups, bowls, and utensils during the build season.

Beverages: We also need families to donate beverages throughout the build season. It could be a case or two of water, a case or two of soda pop, a few 2-liter bottles of water or soda pop, juices, etc.

Snacks: During build season (when there can be some late-night sessions!), it really helps to have nutritious snacks on hand. Snack donations are always appreciated.

3.1.8. Communication

Every student is **required to register** for the Team Forums at www.penfieldrobotics.com/forum and on the Chief Delphi forums at www.chiefdelphi.com/forums/portal.php. These serve as excellent inter- and intra-team communication tools.

3.1.9. Game Test

Each year, the game used in the FRC changes. It is important that every team member have a **good understanding of the game and how it works**. This understanding is essential when the team is working on design concepts and game strategy. In addition, everyone on the team should be able to explain the basic idea of *FIRST* and the fundamental elements of the game to judges and the general public. **Passing the test is a requirement for attending competitions!**

3.1.9.1. Drive Team and Pit Crew Grades: 100%

Members of the drive team and pit crew will be expected to **pass the game test with a perfect score**. It is essential that the drive team and pit crew fully understand the game, all of the rules, and especially all of the methods of scoring points or receiving penalties. All potential drivers, coaches, human players, and pit crew members will have to pass the written test before the drive team, backup drive team, and pit crew are selected.

3.1.9.2. Returning Team Member Grades: 90%

Returning members of the team that are not part of the drive team or pit crew will be expected to pass the game test with a **90% score** or higher.

3.1.9.3. New Team Member Grades: 80%

New members of the team that are not part of the drive team or pit crew will be expected to pass the game test with an **80% score** or higher.

3.1.9.4. Take as many times as needed

The game test itself is **viewed as a learning tool**, and everyone will be **allowed to take the test as many times as needed** until they pass. However, all tests MUST be passed before our first competition (usually the Finger Lakes Regional in early March).

There are occasionally extenuating circumstances that we understand may prevent a student from fulfilling all of these achievements. In this case, it is best for the student and/or parent/guardian to bring the situation to the **lead mentor's** attention for consideration on how best to accommodate these circumstances. We want all students to have the ability to fulfill these achievements and have their trips funded.

3.2. School Eligibility

Success is an important part of *FIRST* and Team 1511. It is not restricted to the robot, game performance, or how many trophies the team is awarded. Team members are successful only when they succeed in the classroom, and then participate in team activities. All team members are expected to make school work and individual academic performance a priority over any team event or activity. To implement this concept, every student will have to **maintain eligibility through school rules**. Please see the PHS Student Handbook for more information on eligibility requirements. Students that fall below this minimum requirement will not be allowed to participate with the team, but will need to focus on improving their overall academic performance.

3.2.1. Ineligibility

Students that fail to meet the minimum grade requirement established by the school will be **ineligible for one grading period**. During the ineligibility period, the student will be expected to focus on improving their grades, and cannot attend any major team events or participate in building the robot. Once the student establishes a new grade average that removes them from the ineligibility list, the student will then become eligible, and will be allowed to fully participate on the team again.

3.2.2. Help Available

Any student member of the team that is struggling with school work can seek help. The team will have **resources available to help students with school work**. You do not need to be ineligible or on probation to seek/receive help – just ask! If you don't know who to ask then talk to the lead mentor for guidance. Student members that are ineligible or on probation should expect to be offered help, as we want all of our students to succeed academically as well as on the team.

3.2.3. Studying for Exams Takes Precedence

Academic performance takes precedence over team activities and events. Students are expected to complete all school work before participating in team events or activities. Students are expected to miss team meetings, workshops, etc. when they need to study for exams. **NO EXCEPTIONS!**

3.3. Behavior

Each team member is ultimately responsible for his / her own behavior. However, how team members behave will reflect on the team, the school, and the sponsors. You are expected, at all times, to be polite and respectful of everyone, and to refrain from activities that are considered disruptive. We are all role models and our goal is to present an image that is positive and in the spirit of team building – not a phony image, but an authentic attitude of appreciation and professionalism. Negative behavior such as shoving, hitting, fighting, name calling, destructiveness, stealing, or constant griping and complaining are not helpful and will not be tolerated. Inappropriate behavior will be subject to disciplinary action up to and including suspension from the team. Additionally, team members **WILL NOT play computer games** during meetings or times when they could be more productive.

3.3.1. Disciplinary Action

Disciplinary Action may need to be taken on an as needed basis. This will be determined by the lead teacher and the team leader. Oftentimes, the student will be given a verbal warning. Based on the level of the offense, the student may be removed from team participation for one week, or removed from the team entirely.

4. TEAM EXPECTATIONS

Mentors, parents, teachers, and alumni on Team 1511 are encouraged to be **actively involved** with the team. We invite you to participate in team events, meetings, and work sessions – we have a good time, and we think you will, too!

4.1. Mentor Roles and Responsibilities

4.1.1. Commitment

Helping the students reach their full potential is the primary reason for participating in *FIRST*. We know that mentors have families, jobs, and other important commitments outside of *FIRST*. We ask that mentors properly inform us up front of how much time they think they will be able to contribute. There are many different ways to contribute to the team, and we will find something that will fit your schedule and interests! Involvement may include anything from preseason subteams and meetings, to fundraising, to community service activities, to build season work. Mentors are asked to participate outside of build season whenever possible, as it helps with teambuilding and getting team activities done. The rewards of putting forth this commitment are plentiful!

4.1.2. Leadership

The leadership of this team is a cooperative effort between mentors and student leaders. Each year's student leaders are selected after competition season ends, so that they have the summer to plan the next year's activities. The main advisors of the Leadership team are Larry Lewis and Leann Lewis. Mentors with ample time are encouraged to support and participate in the Leadership team. Mentors are also expected to help lead and guide the subteams with the students.

4.2. Parents/Guardians

Parents/guardians are an integral part of our team and important to our success. The robotics team becomes a family throughout the year because the members spend a lot of time together. The students learn about hard work, perseverance, commitment, patience, joy, defeat, computer skills, respect, engineering, writing, interviewing, business skills, money management, marketing, production, publishing, kindness, time management, and most importantly, gracious professionalism. Having the involvement of their parents will only enhance this experience for them.

Requirements for parents/guardians are listed in section 3.1.6 above. In addition, some things the team needs from parents are:

- Providing timely transportation for their student to/from team events (this may include car-pooling).
- Assisting and supporting their student in fundraising and community service activities.
- Providing accurate medical information for their student, and keeping the team leader informed of any changes.

- Participating in any team activities – it really helps to have parents present at these events! Parents are frequently needed to transport the robot(s) and students to and from demos, to provide adult supervision at car wash fundraisers, etc.
- Chaperoning team trips.

Any and all support that can be provided by you and your family is welcome. Every person has unique attributes that can be put to use for the good of our team. NEMO (Non-Engineering Mentor Organization, www.firstnemo.org) helps parents volunteer with *FIRST* even if they're not involved with the robot. NEMO has a list that shows 101 ways that parents can help a *FIRST* team at http://www.firstnemo.org/PDF/101_ways_parents_can_help.pdf.

4.3. Teacher Roles/ Responsibilities

Teachers are important assets to our team. They are responsible for:

- Facilitating communication with the school
- FIling out legal absence forms in advance of trips
- Explaining school rules and implementing them
- Head chaperones for trips
- Helping with recruiting efforts and promoting any events or activities within the school
- Maintaining order and appropriate student behavior at team meetings and events

The main teacher will act as the school liaison, and will attend team meetings whenever possible. Additional teacher support can be used to help facilitate subteams, as well as to help divide up supervision of competitions and other school-related duties.

4.4. College Student & Alumni Volunteers

College students and alumni who are under age 21 and have graduated from high school fall under this category. They do not have mentor responsibilities such as direct mentoring of students or discipline of students. They support the team by sharing their FIRST experiences, acting as a role model to the students, and participating in any events, team meetings, and subteams. They also may come to competitions and the team may pay for their travel based on their level of participation.

4.5. Team Alumni Involvement

Team 1511 has a growing number of alumni who want to stay involved with the team in some way. We welcome their involvement, whether it's in a mentoring role, attending events to cheer the team on, or simply staying in communication on the forums.

4.6. Team Rules

We ask that EVERYONE **treat each member of the team with respect** and treat others the way that they want to be treated. We also want **EVERYONE to have fun**!! The most important part of the team is learning while having fun.

4.7. Safety/ Training

Remember that **safety comes FIRST, LAST, and ALWAYS**. Always **wear safety glasses** when working on the robot or going into the pit area. *FIRST* requires teams to bring safety glasses to competitions – they don't require a robot, but they do require safety glasses!

You can help keep everyone be safe by making fliers, pamphlets, and DVD's about proper safety procedures. The mentors and teachers will help by offering safety training and guidelines at the beginning of the season. Every team member should try to attend this training. Two or three student **safety captains** will be designated at the start of the build season. These safety

captains will be responsible for making sure that EVERYONE follows proper safety procedures. They will rotate responsibilities through the team events.

4.8. Chairman's Award

Our team strives to submit a strong entry for the Chairman's Award. The Chairman's Award requires our team to go above and beyond just building a robot. This means that our team demonstrates gracious professionalism and the most respectful form of sportsmanship. We ask that all team members, including adults, help us in achieving our goal.

Chairman's Award Description - *FIRST*'s most prestigious award, it honors the team that best represents a model for other teams to emulate and best embodies the purpose and goals of *FIRST*. The award helps keep the central focus of the *FIRST* Robotics Competition on the goal of inspiring greater levels of respect and honor for science and technology.

5. ORGANIZATION STRUCTURE

5.1. Team Leadership

The team Leadership group will be **comprised of students selected by lead mentors and elected by their peers and the team, as well as mentors**.

Students interested in applying for a Student Leadership position will:

1. Apply using a written application.
Mentors will review applications and select students to move on to the next round.

2. Interviewed by a panel of mentors.

Mentors will evaluate and pass students to the final round, during which the nominees will give a short speech to the entire team who will then vote to elect the student leaders for the upcoming school year.

A maximum of eight student leaders will be selected. Each grade will be represented by at least one leader from that grade. Seven student leaders are elected in the spring for the next school year. In the fall, the eighth leadership spot will be filled be a **new** student member from any grade.

The Leadership team selects the Team Captain(s) from among them. Within the Leadership group, additional roles and responsibilities will be assigned. The main roles of Leadership are: Intra-team Communications, FLL/Jr. FLL Coordinator, Public Relations, Media Specialist/Historian, Treasurer, Student Coordinator and Subteam Coordinator.

The Leadership team will be in charge of:

- Coming up with agendas and running the team meetings
- Organizing any preseason teambuilding activities
- Keeping track of subteam reports
- Making decisions about the team
- Creating and distributing team emails and newsletters
- Developing a foundation for the college and career opportunities
- Maintaining and updating the team calendar

5.1.1. Subteam Descriptions and Responsibilities

Each subteam, in both preseason and build season, will **determine a student leader and a mentor leader** to be in charge of reporting progress and interfacing with the other subteams.

5.1.1.1. Preseason

In the preseason, subteams will be set up to take care of team functionality and to learn the knowledge necessary for the build season. The following is a list of the subteams and their potential tasks. Each subteam will be asked to **determine their goals for the preseason**, so these tasks may change. At the end of the preseason (December timeframe), the subteams will each **give a presentation on what they accomplished during the year**.

Mechanical/Fabrication

- Learn Autodesk Inventor
- Design and build preseason drivetrain
- Design and build preseason mechanism
- Review past year's competition for ideas
- Clean and rework prior robots' mechanical systems
- Study other teams' previous robot designs for ideas

Electrical/Pneumatics

- Develop a preseason prototype board
- Learn motor characteristics
- Learn wiring diagram
- Learn pneumatics rules/regulations
- Develop a sample pneumatics demonstration
- Clean and rework prior robots' electrical systems
- Experiment with sensors

Programming

- Learn C++ programming language
- Understand last year's code
- Make modifications/improvements to prior robots' code
- Develop techniques for autonomous mode
- Write code for all available sensors

Webpage

- Learn webpage criteria from *FIRST*
- Discuss new ideas for webpage
- Complete content to the webpage
- Improve sponsor interaction
- Integrate database for achievements entry
- Maintain Smugmug

Marketing

- **Flare**
  - Discuss/rework logo
  - Design team shirts and buttons
  - Record all team meetings and events through photo and video
  - Update Smugmug
  - Create team recruiting videos and promotional videos
  - Chairman's Award submission (essays, video, and presentation)
  - Determine submissions/criteria for other awards: WFA, Technical, etc. and help team achieve them

- **Corporate**
  - Create team fliers, pamphlets, team newsletter and marketing items
  - New member recruiting
  - Monitor team budgets and fundraising budget (with treasurer)
  - Maintain student handbook
  - Keep track of student/team achievements
  - Organize/oversee fundraisers
  - Run the Patron Drive and develop the Patron Book

Strategy/Drive/Rules
- Review and learn the rules from last year
- Decide on methods for strategy development
- Train drivers and human players
- Come up with scouting strategies and software/database

Animation
- Review animation submission rules
- Learn Autodesk 3DS
- Submit for safety animation
- Begin creation of next year's submission

FLL
- Coordinate starting new FLL teams
- Host FLL info sessions
- Provide master mentors, training, etc. for FLL teams
- Volunteer at FLL events
- Keep 1511 involved and informed
- Host FLL Rumble (March)
- Integrate FLL bridge members to 1511
- Assist FLL teams with fundraising and grants

5.1.1.2. Build season

During build season, the subteam activity will change. The Animation, Strategy/Drive/Rules, and Flare subteams will pick up the pace during build season. The Mechanical team will branch out into designing the Drivetrain and Mechanisms as required by the game, and the Electrical and Programming teams will work with the Mechanical teams to integrate a fully functional robot.

Team 1511 constantly works to improve our build season process, making teamwork between the subteams smoother by holding regular integration meetings. Additionally, each subteam creates "engineering notebooks" during build season, which are posted on the Wiki. Each engineering notebook entry includes the names of team members participating, the date and start/stop times, the tasks accomplished, and the next tasks to do. Entries can also include lessons learned that day, photos, details, spreadsheets, CAD screenshots or drawings, etc. The purpose is to make it easy for someone to pick up a subteam's ideas and keep them going if no one from that subteam is present.

Below are descriptions of some of the important goals for subteams during build season.

Strategy/Drive/Rules:
- Everyone on the drive team must read and understand all the rules in the game manual.
- Select drivers, human players, and coaches for a primary and secondary drive team.
- Train drivers, human players, and coaches how to correctly play the game.
- Train drivers on how to handle driving the robot.

- Members must work together to develop strategies for game play.
- Coaches must be familiar with these strategies and be able to inform the drivers on how to carry out the strategy.
- Scouting will be done before, during, and sometimes after competitions. Scouting includes robot design and performance, practice round results, and match results.
- Data retrieved from scouting will be analyzed so that coaches can develop new strategies and select team alliances.

Drivetrain Design:

- Responsible for selecting a drivetrain design that matches the team's primary strategies.
- Will design the drivetrain in CAD, select and design wheels, and procure and build all drivetrain parts, then assemble the drivetrain.
- Should interact with the electrical subteam to determine the placement of the electronic components.

Mechanism Design:

- Responsible for designing any arm, gripper, manipulator, or other mechanism that will be used to play the game.
- Will design the mechanism(s) in CAD, select and procure parts, and build all mechanisms.
- Will be responsible for interfacing with the electrical and programming teams to communicate the needs for the robot mechanisms.

Electrical:

- Responsible for designing and laying out the electrical subsystem.
- Will implement all sensor needs, and make sure that there is appropriate mechanical design to accommodate sensors and electrical components.

Programming:

- Responsible for designing a program that accomplishes the needs of all the functions of the robot.
- Responsible for determining best implementation of autonomous modes, and should communicate sensor needs with the electrical subteam.

Programming:

- Analyze field drawings from first and determine method of designing game field for Rally.
- Create a bill of materials for what is needed to build the field.
- Fabricate and assemble the field in time for the Rochester Rally Pre-ship event.
- Store materials in a way that they can be reused for later demonstrations.

5.1.2. Integration

Communications among subteams is important to **keep the team productive and on task**. Representatives from each subteam will meet regularly to discuss what their subteams are doing. One student from each subteam will act as a delegate for their subteam. They are responsible for providing everyone in the group highlights of what their subteam has been doing, as well as bringing back information from the meeting to the rest of their subteam. During these meetings, any needs a subteam has will be addressed and acknowledged by the other subteams.

In the preseason, the subteams will be responsible for reporting their progress to the Leadership team every two weeks. For build season, the subteams must report three times a week at integration meetings. During build season, it is critical that the subteams know how to interact and that the Marketing (corporate) subteam is given full insight into the budget structure.

5.1.3. Communication

Team 1511 will have several forms of communication in order to keep everyone informed. A **weekly email** will be sent to all members, and posted to the team forums at www.penfieldrobotics.com/forum. **Special announcements and news** will also be posted to the forums. The **forums** are an informal way for the team to communicate and record ideas electronically, and should serve as the main repository for ideas, minutes, and anything that may be of interest. The Corporate and Leadership groups will be responsible for creating and distributing a **team newsletter**, which is intended to tell the community outside of the team what the team is working on, interesting topics, and present a calendar of activities.

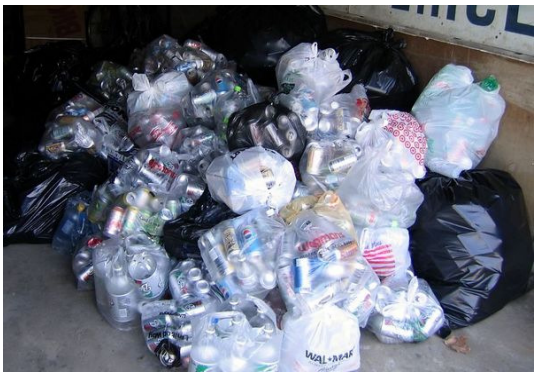
All team members should create accounts on both the team forums (www.penfieldrobotics.com/forum) and on Chief Delphi (www.chiefdelphi.com), which is a great resource for interacting with other teams. Both forums are safe and moderated, but as with all internet communications, students are encouraged to use smart internet activity, not give out personal information, etc.

6. FUNDRAISING

Harris Corporation is very generous to the team, but **we also need to raise funds to help offset team travel costs.** Fundraising may include bottle/can drives, pizza and candy sales at the high school, carwashes, pancake breakfasts, etc. Fundraising forms are submitted through the team treasurer with estimates on costs and profit. (See section 3.1.4 for the fundraising achievements expected from new and returning team members.)

6.1. Patron Drive

Team 1511 solicits sponsorship from local businesses and puts together a patron book. **This is currently the largest fundraiser that the team does, and is an important way to spread the knowledge of our team out into the community**. The achievement goal for new students for the patron drive is to solicit 5 businesses or to raise $250, and for returning members, 10 businesses or $500.



6.2. Other Fundraisers/ Process

Students organizing fundraisers are responsible for filling out a team fundraising form, as well as the green fundraising forms that are turned into the school through the team treasurer. The school will notify the team when the fundraiser has been approved. Once it is approved, the organizing students should proceed with organizing and running the fundraiser. Any fundraiser that requires more than $100 of upfront cost will first have to be approved by the Corporate subteam before it is submitted to the school.

Many fundraising ideas and opportunities are posted on the Fundraising forum under the Corporate Subteam board.

6.3. Pizza and Candy Sales

The team will sign up to sell pizza and candy after school during certain times of the year. Every student can sign up to help sell at least once during the year.

6.4. Car Washes

The team will hold several car wash fundraisers over the summer. Returning students can sign up to help at a car wash at least once during the summer. Any student that attends a car wash to help raise over $1000 will be given a fundraiser credit. However, you must still attend another car wash in order to get both the car wash and fundraiser credit.

7. TRAVEL/ COMPETITION

Regional and Championship competitions are the high-spirited and exciting "robotics sporting events" that take place in March and April nationally and abroad.

7.1. Schedule

The regional events that we choose will be in the northeast with other northeastern teams. Anywhere between 30 and 80 teams compete at each event. We generally attend the **Finger Lakes Regional at RIT and a second regional based upon schedule and location.** The drive team and pit crew leave a day ahead of the rest of the team (Wednesday), and the actual competitions are two-day events (Friday – Saturday) with travel on Thursday.

The second regional will be a bus trip, and **permission forms and medical forms will be required** for each student. Parents and family are welcome and encouraged to attend and cheer our team on – non-chaperoning family can often get the team rate for travel (bus and/or hotel), so by all means inquire about traveling with the team. Chaperones will also be needed (parents, this is a GREAT way to attend the competitions without breaking your budget!). The team will attend the Championship event in Atlanta, which we will travel to by air. **If each team member completes their achievements (fundraising, community service, etc.) the only cost to each student will be a small deposit, food, and souvenirs.**

7.2. Uniforms

All team members will wear a uniform designed by our team members that is unique to our team. Currently, the minimum uniform is **a team shirt that will be worn at all events on all days.** The team will also likely have sweatshirts, pants, hats, etc. available for purchase. Team members may buy the items they would like before the order is placed. Each active team member will be provided **two team shirts**, but the team member and any family or friends can buy additional shirts or uniform pieces.

All team members will be **REQUIRED to wear team uniforms** (minimum of a team shirt) at all demos, community service events, and fundraisers in order to represent the team and obtain credit for participating in the event. The exception to this is if an organization requires volunteer shirts (e.g., volunteering for marathons).

7.3. Health

All students will make sure to **take care of their health during the year, and especially during build season.** Students are not permitted to provide any form of medication to other students. Any student that becomes ill or injured during a trip should report to a chaperone for appropriate action.

7.4. Forms

All students will be required to submit permission slips and emergency contact information as well as health-related forms in order to attend any of the team events.

8. COLLEGE AND CAREER OPPORTUNITIES

Because someday you'll need to make real money!

As the mission of the *FIRST* program is to inspire students in science and technology fields, it is one of the **team's goals to provide guidance in college and career opportunities for science and technology.**

8.1. Scholarships

The Leadership group will work with the school's career counselor to publish information on the **scholarships offered for *FIRST* students**. Mentors will be available to write recommendation letters for any students applying to college or for scholarships. Scholarship information is also available online at www.usfirst.org (choose "quick links" at the top, then "Scholarships").

8.2. Engineering Opportunities

The Leadership group, in conjunction with the Harris mentors, will look for **opportunities such as a shadowing program** to give students better insight into the real world of engineering.

9. APPLICATION PROCESS

Each team member will be responsible for filling out an application to be on the team. All applications are due in late September, and **NO students or adults who have not submitted a complete application will be allowed at team or subteam meetings after September 27th**. Applications are reviewed by mentors and will be subject to verification before students and adults are admitted.

10. IMPORTANT CONTACTS

Each team member will be supplied with information of who are the key leaders, mentors, teachers, and other team contacts. Please check the forums and your email regularly for important information.

Larry Lewis: Harris Team Leader
Email: llewis12@harris.com
Work: 585-242-4479

Mr. Brewer: High School Advisor:
Email: EBrewer@penfield.edu
Work: 585-249-6762

NEW STUDENT ACHIEVEMENTS SHEET

This sheet serves as a reminder of the achievements that are necessary for new students interested in having all of their trips fully funded by the team. New students are students who have NEVER participated in Team 1511.

Please have a mentor who is present at each event sign the submitted attendance sheet. Achievements will not be recorded unless a mentor has signed off on them!

PRESEASON – DUE BEFORE KICKOFF

- ☐ 50% Preseason Team Meetings
- ☐ Preseason Subteam Participation
  - At least one subteam
  - Declare main subteam by the beginning of October
  - 50% of one subteam's meetings
- ☐ Community Service
  - 3 hours
  - 1 activity
  - 1 demonstration
- ☐ Fundraising
  - Patron Drive: 5 businesses or $250
  - Participate in 3 Fundraisers
  - Pizza/Candy sales
- ☐ Participate in One FLL Activity
- ☐ Parent Attends Info Session & One Team Event
- ☐ Register on 1511 Forums & Chief Delphi Forums

BUILD SEASON – DUE BEFORE 1st REGIONAL EVENT

- ☐ 50 hrs Build Season Work
  - Can Include up to 10 Homework Hours
- ☐ Family Brings One Meal for Build Season
- ☐ Parent Attends Ruckus, Rally, or FLR
- ☐ Pass Game Test
  - 100% Drive Team & Pit Crew
  - 80% Team
- ☐ Student Eligibility
- ☐ Acceptable Behavior

☐ Application Due 10/02/2012

☐ Contract Signed & Submitted by 10/09/2012

RETURNING STUDENT ACHIEVEMENTS SHEET

This sheet serves as a reminder of the achievements that are necessary for returning students interested in having all of their trips fully funded by the team. Returning students are any students having previously participated in Team 1511.

Please have a mentor who is present at each event sign the submitted attendance sheet. Achievements will not be recorded unless a mentor has signed off on them!

PRESEASON – DUE BEFORE KICKOFF

- ☐ 10 of 15 Preseason Meetings
- ☐ Preseason Subteam Participation
  - At least one subteam
  - Declare main subteam by the beginning of October
  - 50% of one subteam's meetings
- ☐ Community Service
  - 10 hours
  - 3 activities
  - 3 demonstration
  - Organize 1 Demo or Community Service In Preseason
- ☐ Fundraising
  - Patron Drive: 10 businesses or $500
  - Participate in 5 Fundraisers
  - Pizza/Candy sales
  - Organize 1 Fundraiser in Preseason
  - Participate in 1 Carwash
- ☐ Attend the NYS Fair and/or Monroe County Fair for a combined 10 hours
- ☐ Participate in TWO FLL Activities
- ☐ Parent Attends Info Session & One Team Event
- ☐ Register on 1511 Forums & Chief Delphi Forums

BUILD SEASON – DUE BEFORE 1st REGIONAL EVENT

- ☐ 60 hrs Build Season Work
  - Can Include up to 10 Homework Hours
- ☐ Family Brings One Meal for Build Season
- ☐ Parent Attends Ruckus, Rally, or FLR
- ☐ Pass Game Test
  - 100% Drive Team & Pit Crew
  - 90% Team
- ☐ Student Eligibility
- ☐ Acceptable Behavior

☐ Application Due 10/02/2012

☐ Contract Signed & Submitted by 10/09/2012

STUDENT Contract

I agree that I understand the information presented in the Team Handbook, and that I understand what I need to achieve in order to have full payment of my trips. I know that I will have to place a reserving deposit, but if I fulfill all of the team achievements, the team funding will cover the rest of my travel costs.

I understand that I must act responsibly and respectfully at all times, and that schoolwork comes before team work. I must maintain my grades as required by the school in order to participate in team activities.

Student Signature: _____

Student Name: _____

Date: _____

Parents/Guardians
I understand that my student has chosen to be an active part of this team, and that while any level of participation is encouraged, that my student must meet the team achievements in order to have team funding for his/her travel.

I also understand that I am part of those achievements. I agree to attend an information session, pre-travel meetings, one team event during the year, and one local competition event. I also agree to provide a meal during build season.

I understand that parents can be a vital part of the team, and are a big help in getting many of the team activities accomplished. I will do my best to support my student and the team in this endeavor.

Parent Signature: _____

Parent Name: _____

Date: _____

Due by 10/09/2012