

# Team 1511 Rolling Thunder Member Handbook 2007 - 2008







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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. The purpose of FIRST is to encourage performing high quality, well-informed work in a manner that leaves everyone feeling valued while learning and competing intensely, but treating one another with respect and kindness in the process. As a member of the team, you will enjoy the satisfaction of knowing that you have acted with integrity and respect for your ideas and people too.



## on (FRC)

Competition is an exciting, international competition where students work in teams to solve an engineering design problem. The program is a life-changing, career-molding experience. Like most spectator sporting events, the result of the competition is the product of teamwork, dedicated mentoring, project time, and hard work. It is more to FRC than building a robot. It is a complex exercise in project management that entails a lot of work that does not necessarily require a technical background.



**FIRST redefines “Winning”** for these students. 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 fall 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.

This handbook is a source of information for members of team 1511. It is intended to give you an understanding of the program and your responsibilities as a team member. Please share the handbook with you family, friends and sponsors, and keep it as a future reference.

## 1.1. Mission

Team 1511 Mission Statement - “**Creating opportunities for the future by providing students with FIRST hand robotics expertise with local engineers; thus instilling confidence to succeed in a rapidly changing world.**”

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 & technology.
- To put focus on the Engineering Design Process, and develop our team and build season around this process.
- To promote individual growth, the growth of the team, and to build the sense of family and moral within our team.

## 1.2. History / Awards

Team 1511 started in February of 2004 with a small core team of two parents, the teacher: Linda Martina (PHS Technology Teacher) and lead mentor: Kim O’Toole (Harris Corporation). 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. The first year, the team had about 25 students, 12 Harris mentors, and 8 community mentors. The second year, the team grew to 40 students, 15 Harris mentors, and 5 community mentors. The team looks forward to a strong third season.



In the first year, the team competed in 3 Regional events and Championships. The second year, the team competed in two Regional events and Championships. In the third year, the team competed in two Regional events and the Championships, qualifying for the Championships all three years.

### 2005 Awards

March 3-5	<b>Finger Lakes Regional</b>	Rochester, NY	<b>Rookie All Star</b>
March 24-26	<b>Buckeye Regional</b>	Cleveland, OH	<b>Highest Rookie Seed</b>
March 31-April 2	<b>Toronto Regional</b>	Toronto, ON	<b>Rookie Inspiration</b>
			<b>Daimler Chrysler Team Spirit</b>
			<b>Regional Champion (1<sup>st</sup> place)</b>
			<b>Championship Rookie All Star</b>
April 21-23	<b>2005 Championship</b>	Atlanta, GA	

### 2006 Awards

March 9-11	<b>Finger Lakes Regional</b>	Rochester, NY	<b>Engineering Inspiration</b>
March 23-25	<b>Boston Regional</b>	Boston, MA	<b>Imagery</b>

## 2007 Awards

March 8-10	<b>Finger Lakes Regional</b>	Rochester, NY	<b>Regional Chairman's</b>
March 22-24	<b>Boston Regional</b>	Boston, MA	<b>Daimler Chrysler Team Spirit</b>

The team is proud of the variety of awards it has received over the past three years, as it shows the strength and well-roundedness of the team. Our three highest awards are the Chairman's, Rookie All Star and the Engineering Inspiration Awards. Their descriptions are listed here:

**Chairman's:** This award deals with team values rather than robot performance. A Chairman's award winning team is a role model for other teams and reaches out in their community in many different ways. This award is the most prestigious award given out at each Regional.

**Rookie All Star:** This award 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 and engineers 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. All four of our graduating seniors in 2005 and all five in 2006, went into fields related to science, technology or business.

## **2. BASIC CALENDAR/ SCHEDULE**

The **Team Calendar is officially hosted on the team forums**. Additionally, a specialized team calendar with the monthly goals, fundraisers, community service and demos will be maintained and distributed by the leadership team.

The Robotics Team meets year-round with varying levels of involvement defined 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. The calendar will always be posted on the Forum.

### ***2.1. Preseason***

The Preseason occurs from the beginning of **September to the end of December**, and is 17 weeks long. During the preseason there will be **approximately 14 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-session, or team building activities. The team will use the preseason as a time to do teambuilding, fundraisers, community service, and to learn about the necessary skills needed for the upcoming build season.



### ***2.2. Build Season***



The Build season is the period of **January thru mid February (44 days long)**, with at least 20 meetings. Kickoff is January 6, and following that the team will meet officially with 2 team meetings per week, 1 build day on weekends and a rally event. In reality, the team will likely work Tuesday through Thursday and both Saturday and Sunday. During this time, all teams should be focusing on building the robot and submission of awards. The team will also host the second annual Rochester Rally, pre-ship event. The robot will ship on February 20th.



## **2.3. Competition**

The Competition season is **March through April**, when the robot and the team travel to regional competition sites such as, but not limited to, the Rochester Institute of Technology Finger Lakes Regional and the Boston Regional, as well as the Championship in Atlanta, Georgia (4/11/07-4/14/07). 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 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 must be **actively involved** with the team. Students will participate in team events, meetings, and work sessions. Tardiness is not acceptable; students are expected to show up **on time**. 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 **Fund Raising** activities throughout the year. Both of these activities are vital for the success of the team. In addition to the requirements posed for students, this program is designed to be fun, interactive and a great learning experience for the students.



### **3.1. Student Commitment**

Participating in FIRST is a commitment that requires lots of 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. Poor attendance or lack of participation will adversely affect a member's standing on the team. Every team member will be allowed to travel to competitions, regardless of standing, but **payment for travel from team funds will be determined by participation** in the requirements. For example: Full participation in all requirements gets you full payment for all team trips, 50% participation gets you 50% payment for team trips. There are no other levels. Anything between 50% and 100%, receives 50% payment, anything below 50% receives 0% payment towards trips.

This section discusses the expectations and requirements of students who want full payment for their trips. It will be the responsibility of the leadership team and the mentors to make sure that adequate opportunities are provided for students to fulfill these requirements, but **it is up to the student to take responsibility to fulfill those requirements**. All students are encouraged to lead activities that they may need for requirements.

Recording of activities for **each year's requirements begins June 1<sup>st</sup>**. As returning team members can be with the team over the summer, and will have a greater understanding of team functionality, higher expectations are placed on them. Throughout these sections, you will note that New & Returning student requirements are detailed separately. **New students are defined as those who have NEVER participated in team 1511 before.**

Requirements records will be **recorded by team mentors**, and are available at the students request. Mentors will make every effort to check up on students as often as possible. The webpage team is aiming this year to record requirements online and make them real-time viewable by students. Students will be notified when this is available.

### **3.1.1. Team Meetings**

Team members are expected to be full participants in team meetings, work sessions, community involvement and fund raising events, during the Preseason and Build season as detailed next.

#### **3.1.1.1. Preseason**

New Students are **required to attend at least 50%** of these meetings to be considered full participants. Returning Students will be **required to attend 10/15** meetings. In the preseason, sub-teams will meet separately and establish their own agendas. Subteam meetings cannot be counted as substitutes for full team meetings.

#### **3.1.1.2. Build Season**

The Build season starts January 6<sup>th</sup> and ends February 20<sup>th</sup>, it is 44 days long, or about 6 weeks. During the Build season team members will have the opportunity to participate in the design and construction of the robot at a minimum of 20 scheduled meetings/work sessions. It is likely, however, that the team will be present 5 days out of the week, working Tuesday through Thursday & all weekend. Each new team member must invest at least **50 hours** of time during this season, including **18 homework hours** detailed later. Each returning team member must invest at least **68 hours** of time, including **18 homework hours**.

A **recommended schedule** of participation to obtain the minimum hours would be 4 hours a day for 6 weekend days (24 hrs), and 3 hours a day for 15 weekdays (45 hrs) including homework. However, a student can put in their hours as is applicable. They will be required to have a mentor sign off on their hours for the day, and they **must be PRODUCTIVE hours**. Students will be required to get a **mentor to sign off** on their hours, verifying that they have used the time to benefit the team.

#### **3.1.1.3. Homework Hours**

Each student will be required to put in **3 homework hours per week** during build season. These hours must be conducted in the presence of a team mentor, at a team study session, or with the team teacher(s). In special cases **ONLY**, parents can be given permission to approve a students study hours at home. 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. With pre-approval by the team leader **AND** teacher, a student may request to do a single set of 3 homework hours on a different week due to vacations or similar instances.

### 3.1.2. Sub-Team Participation (Preseason)

All Students will be required to **participate in at least one sub-team during** the preseason. The student must attend a minimum of **50% of ONE sub-team's meetings**, and must **declare their main sub-team by 10/3**. So if the programming sub-team has 12 meetings, the student must attend at least 6 of them. If a student is on multiple sub-teams, the requirement only stands for only the student's main sub-team, meaning percentages of different sub-teams will not count. For example, if a student is on the electrical and mechanical sub-teams, and only attends 25% of each sub-team's meetings, that **DOES NOT** add up to 50% attendance. The idea is to **put quality work into at least one sub-team**, and then branch out beyond that as the student is interested.



### 3.1.3. Community Service

All New students will be required to put in **at least 5 hours of community service** time, Returning members are required to put in **at least 10 hours**, and both must participate in **at least 3 community service activities**. This means, for example, a student can participate in two 4 hour activities and one two hour activity, and their requirement is complete.

Every New Student will be required to participate in **two robot demonstrations**. Each returning student will be required to participate in **three demos**, and all returning juniors & seniors will be required to **organize a robot demonstration**. This can be school demonstrations, town demonstrations, sponsor demonstrations, etc. The entire team should be involved in helping schedule these demos and, in most cases, there will be no limit to the number of participants, but the idea is to get our name out into the community, so the more demonstrations we do, the better we will be able to get our name known.

**Team Uniforms MUST be worn to ALL community service, fundraiser & demo activities 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 leader responsible for organizing the activity, communicating it to the volunteers, arranging for transportation, a camera and a team adult participant. **HOWEVER, 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.

### 3.1.4. Activity Promotion

Every student will be required to help promote at least one activity **AT LEAST** one week in advance of the activity. Promotion requires creating & distributing fliers at the school, around town and at Harris. It may also include newspaper, radio or TV announcements, school announcements or any other way to get the message out. The idea is to get as many people as possible to participate in or see our activities, and to get the community to know about our team.

### 3.1.5. FLL Involvement

Every student is required to participate in at least one FLL activity. This can be volunteering at the FLL kickoff or Tournament, mentoring or master mentoring a team, doing a demo or a camp for an FLL team, or helping at any other 1511 FLL related activity.



### 3.1.6. Fundraising

Fundraising is an important part of the team's budget. It will account for the majority of student and chaperone travel expenses. **The goal for the 2006-2007 Season will be \$25,000.** Every student is expected to participate in the team's fundraising efforts. The requirements are as follows.

#### 3.1.6.1. Patron drive

All students are expected to participate in the team's Patron Drive. Each New student will be expected to **EITHER visit 6 businesses, OR get \$500 in donations** towards the patron book. Returning students must visit **10 businesses or get \$500.** Students may travel together and 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 went together, they would 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.

#### 3.1.6.2. Organization Teams

Every returning student will be **required 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.

#### 3.1.6.3. Participation in Fundraisers

Every student will be required to **participate in at least 5 fundraisers** before the build season ends. The Patron Drive and Pizza/Candy Sales do not count, as every student must participate in these. New students can reduce their participation requirement by **organizing one fundraiser, and participating in a total of four** (including the organized one).

#### 3.1.6.4. Pizza/ candy sales

Every student will be required to help out with one day of pizza and/or candy sales throughout the year. This will spread the work out across the team, and increase responsibility, while bringing in a good amount of money for the team.

### 3.1.7. Family Brings A Meal

**Every family is asked to bring one meal during the build season.** There will be at minimum 20 working days, but more likely 30 + days when the students and mentors are working. These will include dinner during the week and lunch and sometimes dinner on the weekends. Meals can be very simple (like ordering pizza) or as elaborate as you may want. Dessert is optional, however it is very much appreciated.

**Paper products:** we need plates, napkins and cups throughout the entire pre-season. We also need plates, napkins, cups 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...

On average, we have between 30 and 50 people working during build season. Mentors and students work very hard during this time. It is important that they are nourished. If we do not have a family signed up to bring a meal on a night that the team is working, then it takes time away from working to order in food and collect money.

**Each family should bring:**

- One meal (that will feed between 30 and 50 people)
- Beverages at least once (that will serve between 30 and 50 people)
- Paper products and utensils (at least once)

### 3.1.8. Parental Involvement



**(see 101 ways parents can help a FIRST team)**

Section 4.2 details more ways that parents can be involved with the team and help out. The team runs like a mini-corporation and can always use parent volunteers in many facets. Here are the requirements for students' parents.

**Parent/guardian requirements:**

- 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...)

### 3.1.9. Test on 2006 Game

Each year, the game used in the FRC is changed. 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. In the middle of build season, every team member will take a test to ensure that we all have this basic knowledge.

#### 3.1.9.1. Drive Team & Returning Team Grades: 100%

Members of the drive team and returning team will be expected to **pass the game test with a perfect score**. It is essential that the drive team fully understand the game, all of the rules and especially all of the methods of scoring points as well as the methods for receiving penalties. It will be difficult to execute an effective game plan and strategy

without this detail of knowledge. All potential drivers, coaches & human players will have to pass the written test before the drive team and backup drive team are selected.

### 3.1.9.2. New Team Member Grades: 90%

New members of the team that are not part of the drive team will be expected to pass the game test with a **90% score** or higher. It is important that everyone have a good knowledge of the game, but only the drive team has to understand every rule perfectly.

### 3.1.9.3. 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 by March 2<sup>nd</sup>.

## 3.1.10. Interview Engineer/ Robotics Report

During the 2006-2007 season, each student team member will be **required to interview an engineer or business professional, or to complete a written report on a robotics related article or research**. Interviewing is an essential skill in the business world, and this is an opportunity for the student to learn about the interview process. The fact that the student is the one conducting the interview makes it easier on the student than the interviews he or she will eventually face when looking for his or her first career/job. The purpose is that the interview is to be used as a tool to help the student learn about some engineering or technology that is of interest to him or her. If, for some reason, the student cannot complete an interview with an engineer or business professional, then they may write a report on some aspect of robotics that is of interest to him or her. **The interview write-ups or reports should be a minimum of one page long in paragraph, not Q&A format** (10-12pt Arial Font).



## 3.1.11. Communication

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

## 3.2. School Eligibility

**(NOTE THIS SECTION MAY CHANGE AFTER 9/5)**

Success is an important part of FIRST and the 1511 Team. It is not restricted to the robot, the game performance, or how many trophies the team is rewarded. 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**. 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. Probation

Students that fail to meet the minimum grade requirement, established by the school, will be **placed on probation for one grading period**. During the probation period, the student will be expected to focus on improving their grades, and cannot attend any major team events. Once the student establishes a new grade average that is above the team

minimum, the student will then be taken off probation, 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 on probation to seek/receive help. Just ask. Student members that end up 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

This cannot be stressed enough. **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. PERIOD.**

## 3.3. Behavior

**(NOTE THIS SECTION MAY CHANGE AFTER 9/5)**

**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 you will 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 pushing, shoving, kicking, hitting, fighting, name calling, games, horse-play, throwing things, destructiveness, stealing, 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.

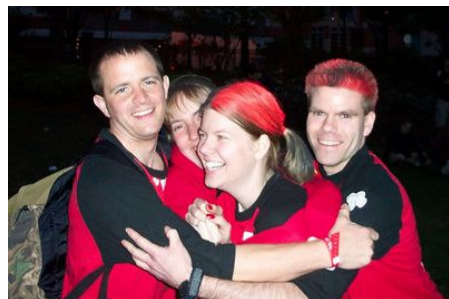
## 4. TEAM EXPECTATIONS

In this section, we lay general guidelines for roles and responsibilities on the team. While these are never set in stone, we hope to give members a good idea of what each participant can help with on the team. Mentors, parents and teachers on Team 1511 are encouraged to be **actively involved** with the team. We invite you to participate in team events, meetings, and work sessions. There are a few requirements that members should participate in such as **Community Service** and **Fund Raising** activities throughout the year. Both of these activities are vital for the success of the team.

### 4.1. Mentor Roles & Responsibilities

#### 4.1.1. Commitment

Participating in FIRST is a commitment that requires lots of energy and time, but the effort will make a positive impact in the lives of many other people. **Helping the students reach their full potential is the primary reason for participating in FIRST.** We know that you have families, jobs, and other important commitments



outside of FIRST. We ask that you properly inform us up front of how much time you think that you 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 & interest. The responsibilities of a mentor are as follows: **to be involved in one subteam, to participate in fundraising, and to participate in community service projects.** The rewards of putting forth this commitment are plentiful and you will not regret joining this team.

#### 4.1.2. Leadership

The leadership of this team is in the process of being shifted more towards the students in the form of the student leadership team. The main advisor of the leadership team and the team is Kim O'Toole. Mentors with ample time are encouraged to support & participate in the leadership team. **The leadership team will be comprised of Kim, two mentors, teachers, and 8 elected students.** Mentors are also expected to help lead and guide the subteams with the students.

#### 4.2. Parental Involvement

(see 101 ways parents can help a FIRST team)

Parents/guardians are an integral part of our team and important to our success. Supporting their son/daughter in all aspects of team involvement is essential for them to getting the most out of the program. Students want and need the support of their parents/guardians behind them. Being involved in any way shape or form shows your children that you are truly interested in this important part of their lives. The robotics team becomes a family throughout the year. 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 (how to interview and how to go through an interview), business skills, money management, marketing, production, publishing, kindness, time management, and most importantly, gracious professionalism. This is like a full time job for many of the students. Having the involvement of their parents will only enhance it for them.



##### Parent/guardian requirements:

- 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...)

##### Responsibilities of Parents/Guardians:

- Provide timely transportation for the student to/from team events (this may include car-pooling)
- Assist and support their student in all fundraising and community service activities.
- Attend mandatory meetings.
- Provide accurate medical information for their student and keep their team leader informed of any changes.
- Parents are encouraged to participate in any team activities (demonstrations, community service events, fundraisers, team building activities, meetings, build sessions...) it really helps to have parents present at these events. Parents are frequently needed to transport the robot(s) and students to and from these events.

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. It can be frustrating and intimidating not being technical, yet wanting to be involved with your child and his/her commitment to this team. NEMO, which stands for Non-Engineering Mentor Organization is



meant to help parents volunteer with FIRST without being involved with the robot. They have come up with a list that shows 101 ways that parents can help a FIRST team at the end of this document.

### **4.3. Teacher Roles/ Responsibilities**

**(NOTE THIS SECTION MAY CHANGE AFTER 9/5)**

A **teacher is an important asset to our team**. They facilitate communication with the school. They are responsible for filling out in advance legal absence forms when we go on trips. They are responsible for explaining school rules and implementing them. They are also the head chaperone leader for trips. Teachers are also expected to help with recruiting efforts and promoting any events or activities within the school. They are expected to help maintain order and appropriate student behavior at team meetings and events. The main teacher will act as the school leader, and should be involved in at least one subteam, and should try to attend all team meetings. Additional teacher support can be used to help facilitate the other subteams, as well as to help divide up supervision of competitions, community service and fundraising events.

### **4.4. Team Rules**

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

### **4.5. 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.

#### **Regional Chairman's Award**

This award represents the spirit of FIRST. The Chairman's Award honors the team that, in the judges' estimation, best represents a model for other teams to emulate, and which embodies the goals and purpose of FIRST. It remains the most prestigious award FIRST presents.

### **4.6. Safety/ Training**

Remember that **safety comes FIRST, last and always**. You can help keep everyone safe by making fliers, pamphlets and DVD's about proper safety procedures. **ALWAYS wear safety glasses**. 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.

## **5. ORGANIZATION STRUCTURE**

### **5.1. Team Leadership**

The team leadership group will be **comprised of students elected by their peers and the team, as well as two Harris Mentors and the main teacher**. At the end of the season for returning students and at the beginning of the season for new students, the team will be given a chance to select leaders. Students will first apply using a written application. Mentors will review applications and select students to move on to the next

round. Students will then go through interviews with a panel of mentors. Mentors will evaluate and pass students to the final round. The entire team will be able to elect two leaders per grade level. Any open positions can be filled at large with the new student leadership process. The leadership team then selects the Team Captain from among them. Within the leadership group, additional roles and responsibilities will be assigned. The **treasurer** will also be selected and must be active on the corporate team and will be in charge of making all deposits, withdrawals and submitting for fundraisers. In addition, the team leadership group 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 any decisions about the team, helping create & distribute the team newsletter, developing a foundation for the college and career opportunities, and maintaining and updating the team calendar.**

### 5.1.1. Subteam Descriptions & Responsibilities

Each subteam, in both preseason and build season, shall **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 what they want to accomplish in the preseason**, so these tasks may change. At the beginning of the build season, the subteams will sit down to **define their own mission statement and goals** for the preseason. 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
- Learn MasterCAM
- Design & Build Preseason Drivetrain
- Design & Build Preseason Mechanism
- Review past years competition for ideas
- Clean & Rework Rhinobot & ROFLBot's Mechanical Systems 10/13

#### Electrical/Pneumatics

- Develop a preseason prototype board
- Learn motor characteristics & Labview
- Learn wiring diagram
- Learn Pneumatics rules/regulations
- Develop a sample pneumatics demonstration 11/20
- Clean, rework Rhinobot's and ROFLBot's Electrical system 10/13
- Experiment with sensors

#### Programming

- Learn C Programming Language
- Understand last years code
- Make modifications/improvements to Rhinobot & ROFLBot code
- Develop techniques for autonomous mode
- Use the Robovation, Vex, Lego kits for practice
- Complete & Test Camera Code 10/23
- Write code for all available sensors

#### Webpage

- Learn Webpage criteria from FIRST 10/6
- Discuss new ideas for webpage

- Complete content to the webpage
- Improve Sponsor Interaction 11/1
- Integrate Database for Requirements Entry
- Setup & Maintain Smugmug or Photo Replacement

### **Flare**

- Discuss/Rework Logo for 2007 11/3
- Designs for Team Shirts & Buttons Complete 10/13
- Quotes for Team Shirts & Button Materials by 11/17
- Team Shirts & Buttons Complete 1/16
- Finalize Ideas & Quotes for Team Handouts/Accessories 11/17
- Host Fun Team & Interteam Activities
- Record all Team Meetings & Events through photo & video
- Maintain & Update Smugmug
- Create an archive of all old photo & video 11/17
- Create Team Recruiting Videos 9/8 & Promotional Videos 10/20
- Review Past 1511 & other teams Chairmans Submissions & create ideas for 2007 10/20
- Work with subteams & teammates to get input for chairmans submission (determine writers)
- Chairmans Award Submission (essays & presentation): Draft 12/15 Complete 1/26
- Determine submissions/criteria for other awards: WFA, Technical, etc & help team achieve them.

### **Animation**

- Review Animation submission rules 10/13
- Learn Autodesk 3DS
- Submit for safety animation (12/15?)
- Begin creation of the 2007 submission

### **Strategy/Drive/Rules**

- Review and learn the rules from last year 10/13
- Decide on methods for strategy development
- Train drivers & human players 11/26
- Come up with a scouting strategies & Software/Database 11/17
- Create a Strategy Subteam Handbook 9/22
- Build a Team Cart 12/15

### **Corporate**

- Create Team Fliers, Pamphlets, & Marketing Items
- New Member Recruiting
- Monitor Team Budgets & Fundraising Budget (with treasurer)
- Establish (9/1) & Maintain Student Handbook
- Develop a Student/Team Database to track requirements & team info (with webpage team) 12/1
- Keep Track of Student/Team Requirements (inform leadership of needed gaps)
- Develop & Distribute Team Newsletter (End of every month)
- Coordinate Travel Arrangments 2/16
- Organize/Oversee 4-6 fundraisers per month
- Run the Patron Drive & Develop the Patron Book

### **FLL**

- Coordinate Starting New FLL Teams 9/29
- Host FLL Info Sessions 9/15
- Provide Master Mentors, training, etc for FLL Teams
- Volunteer at FLL Events
- Keep 1511 Involved & Informed

- Host FLL Rumble (March)
- Integrate FLL Bridge Members to 1511
- Assist FLL teams with Fundraising & Grants

### **5.1.1.2. Build season**

During build season, the team will retain some of the functionality of the preseason teams. The Team Leadership, Business, Photo/Video/Marketing, and Awards subteams will remain completely as they functioned in the preseason. The Fundraising and Spirit/Logo groups will become less active, and the Animation, Strategy/Drive/Rules and Awards subteams will pick up and work more during the 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 design teams to be able to integrate a fully functional robot. Below are some descriptions of the more active build season teams that perform differently during build season.

#### **Strategy/Drive/Rules:**

- Everyone on the drive team must read and understand all the rules in the game manual each year.
- Select drivers, human players, and coaches each year 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 will be based on, but is not limited to, robot information, 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, end effector or manipulator type mechanisms that will be used to play the game. (Each mechanism will be a separate subteam.)
- Once designed in CAD, these subteams will procure parts for and build the mechanisms.
- They 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.

## 5.1.2. Interrelations

Communications amongst subteams is important to **keep a team productive and on task**. In order to do this, representatives from each subteam must meet to discuss what their subteams are doing. This group will be made up of one student from each subteam to 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 bring back information from the meeting to the rest of the subteam they represent. During this meeting, 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 at least weekly, if not twice a week or more. During build season, it is critical that the subteams know how to interact and that the business team is given full insight into the budget structure.

## 5.1.3. Communication

The team will have several forms of communication in order to keep everyone informed. Kim and the team leadership group will send out a **weekly email** which includes Thanks/Congrats/Welcome, This & Next Week's Schedule, Monthly Goals, and Important Announcements. This weekly email will be posted to the team forums at [www.penfieldrobotics.com/forum](http://www.penfieldrobotics.com/forum). **Special Announcements and News** will be posted to the news section of the forums and to the front page of the team's webpage. The business and team leadership groups will be responsible for creating and distributing a **monthly 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. The **forums** are an informal way for the team to communicate and record ideas electronically. This should serve as the main repository for ideas, minutes, and anything that may be of interest.

All team members are strongly encouraged to create accounts on both the team forums listed above and on Chief Delphi [www.chiefdelphi.com](http://www.chiefdelphi.com). The team forums create a great form to interact and discuss within the team, and Chief Delphi is a great resource to interact with other teams. Both forums are safe & 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 have to raise funds to help offset team travel costs**. Other fundraising to participate in may consist of, but not limited to, bottle/can drives, pizza and candy sales at the high school, carwashes and other fundraisers organized by the fundraising team. **Every team member is encouraged to help out by organizing at least one fundraiser as a part of a 2-5 member team**. Fundraising forms are submitted through the team treasurer with estimates on costs and profit. **Each student must participate in 5 fundraisers**.



## 6.1. Patron Drive

The Robotics Team 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 requirement for new students for the patron drive is to solicit 6 businesses or to raise \$500, and for returning members, 10 businesses or \$500.

## 6.2. Other Fundraisers/ Process



The corporate subteam will ensure that there are at least two fundraising events each month, but will aim to schedule four or five. **The organizing groups 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 group 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 business team before it is submitted to the school.

## 6.3. Pizza and Candy Sales

The team will sign up to sell Pizza and Candy on a particular day of the week throughout the year. Every student will be required to help sell at least once during the year.

## 7. COMMUNITY INVOLVEMENT

The **purpose of our Robotics Team participating in community activities is to serve our community and to spread the word about the FIRST program, gracious professionalism and our team.** In order for us to be a Chairman's Award team, community service plays an important role. Team members will be responsible to contribute 5-10 hours, 3 activities and to be present for 2-3 demonstrations. Community activities will be posted on the Forum and the calendar. If a member has any ideas for community involvement, suggestions are always welcome & encouraged.



## 8. TRAVEL/ COMPETITION

Regional & Championship competitions are the “robotics sporting events” that are high spirited and exciting competitions that take place in March and April all over the United States and the world.

## **8.1. Schedule**

The regional events that we choose will be in the northeast with other northeastern teams. Anywhere between 30 and 80 teams compete at these events. We will be attending the **Finger Lakes Regional at RIT and a second regional based upon schedule and location**. The drive team leaves a day ahead of the rest of the team, but the competitions are 3 day events (Thursday – Saturday). 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, at cost or discounted travel cost. Chaperones will also be needed. The team will probably also attend the Championship event in Atlanta, which we will be traveling by air. **If each team member participates in the required activities (fundraising, community service, and team involvement) the only cost to each student will be a small deposit, food and souvenirs.**

## **8.2. Uniforms**

All team members will be wearing a uniform that will be 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. Team members may buy extra shirts or other parts of the uniform before the order is placed. Each active team member will be provided **2 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 & 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 (ie volunteering for marathons).

## **8.3. 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 without parental permission. Any student that becomes ill during a trip should report to a chaperone for appropriate action.

## **8.4. 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.

# **9. COLLEGE & CAREER OPPORTUNITIES**

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 the college and career opportunities fields for science and technology**.

## **9.1. Tours College/ Company**

The Team Leadership group will work in conjunction with parents and Harris mentors to organize **tours of science and technology colleges and companies in the local area**. Tours of Harris Corporation will be offered in October. The reason for these tours will be to give students an opportunity to see what industry is available, and to get an idea of what colleges offer.

## **9.2. Scholarships**

The Team Leadership group will work in conjunction with the school's career councilor 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.

## **9.3. Engineering Opportunities**

The Team leadership group, in conjunction with the Harris mentors, will try and find or develop **opportunities such as a shadowing program** to give students better insight into the real world of engineering.

## **10. APPLICATION PROCESS**

Each team member will be responsible for filling out an "application" to be on the team. All applications are **due by September 26<sup>th</sup>**, and NO students or adults who have not submitted a complete application will be allowed at team or subteam meetings after October 1<sup>st</sup>. All students admitted to the team will be notified via a posting near A11 on October 2<sup>nd</sup>. Applications are reviewed by mentors and will be subject to verification before students are admitted.

## **11. IMPORTANT CONTACTS**

Each team member will be supplied with information of who are the key leaders, mentors, teachers and other team contacts. Forum and Email also provides important information.

Kim O'Toole acts as the Harris Team Leader, and her information is as follows:

Email: [kotoole@harris.com](mailto:kotoole@harris.com)

Work: 585-242-3353

Cell: 315-521-6554

Home: 315-789-0209

Mr. Brewer acts as the High School Advisor, and his information is as follows:

Email: [Eric\\_brewer@penfield.monroe.edu](mailto:Eric_brewer@penfield.monroe.edu)

Work: 585-249-8709





# NEW STUDENT REQUIREMENTS SHEET

This sheet serves as a reminder of the requirements held 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.

- [50% Preseason Team Meetings](#)
  - [Preseason Subteam Participation](#)
    - At least one sub team
    - Declare Main Subteam by 10/1
    - 50% of one subteam's meetings
  - [50 hrs Build Season Work](#)
    - Includes 18 Homework Hours
  - [Community Service](#)
    - 5 hours
    - 3 activities
    - 2 demonstration
  - [Fundraising](#)
    - Patron Drive: 6 businesses or \$500
    - Participate in 5 Fundraisers (or organize 1 part 4)
    - Pizza/Candy sales
  - [Promotes One Activity](#)
  - [Participates in One FLL Activity](#)
  - [Family Brings One Meal for Build Season](#)
  - [Parent Attends Info Session](#) & One Team Event
  - [Pass Test on 2006 Game](#)
    - 100% Drive Team
    - 90% Team
  - [Interview Engineer/ Robotics Report](#)
  - [Student Eligibility](#)
  - [Acceptable Behavior](#)
  - [Registers on 1511 Forums & Chief Delphi Forums](#)
- 
- Application Due 9/26
  - Contract Signed & Submitted by 10/10

# RETURNING STUDENT REQUIREMENTS SHEET

This sheet serves as a reminder of the requirements held 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.

- [10/15 Preseason Meetings](#)
  - [Preseason Subteam Participation](#)
    - At least one sub team
    - Declare Main Subteam by 10/1
    - 50% of one subteam's meetings
  - [68 hrs Build Season Work](#)
    - Includes 18 Homework Hours
  - [Community Service](#)
    - 10 hours
    - 3 activities
    - 3 demonstration
    - Juniors/Seniors organize 1 demo
  - [Fundraising](#)
    - Patron Drive: 10 businesses or \$500
    - Participate in 5 Fundraisers
    - Organize 1 Fundraiser
    - Pizza/Candy sales
  - [Promotes One Activity](#)
  - [Participates in One FLL Activity](#)
  - [Family Brings One Meal for Build Season](#)
  - [Parent Attends Info Session](#) & One Team Event
  - [Pass Test on 2006 Game](#)
    - 100% Grade
  - [Interview Engineer/ Robotics Report](#)
  - [Student Eligibility](#)
  - [Acceptable Behavior](#)
  - [Registers on 1511 Forums & Chief Delphi Forums](#)
- 
- Application Due 9/26
  - Contract Signed & Submitted by 10/10

## **STUDENT CONTRACT**

I agree that I understand the information presented in the Team Handbook, and that I understand what is required of me for full payment of my trips. I know that I will have to place a reserving deposit, but if I fulfill all of the team requirements, 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 the given overall GPA in order to remain on the team.

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 requirements in order to have team funding for his/her travel.

I also understand that I am part of those requirements and agree to attend one of the given parent info sessions, one team activity, and provide at least one meal for the team during the 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 10/10/06