



FLL BINDER



CORE VALUES:

The FLL Core Values are the cornerstones of the FLL program. They are among the fundamental elements that distinguish FLL from other programs of its kind. By embracing the Core Values, participants learn that friendly competition and mutual gain are not separate goals, and that helping one another is the foundation of teamwork.

- We are a team.
- We do the work to find solutions with guidance from our coaches and mentors.
- We honor the spirit of friendly competition.
- What we discover is more important than what we win.
- We share our experiences with others.
- We display Gracious Professionalism in everything we do.
- We have fun.

TOURNAMENT PROCESS:

There are 22 qualifying tournaments in NorCal FLL (by Playing and Learning). Anywhere from one to twelve winning teams from these tournaments advance to the second tier, where there are 3 second level regional competitions. The winners of these regional competitions will then advance to the Nor Cal FLL championships. Teams from this championship may advance to the FLL World Festival held in conjunction with the FIRST Championship.

A complete list of confirmed official tournament locations is posted on www.firstlegoleague.org in the last few weeks of September. In October, teams may either apply online or directly register with the tournament organizer for most official tournaments. The contacts for NorCal FLL are Mark and Jill. (See the contact section.) There is a 2 week period in the beginning of October to register for all FLL tournaments.

This is the registration guide for this year. I honestly couldn't find how to register for an FLL team in detail anywhere online, or where to find waivers and stuff.

http://www.norcalfll.org/index.php?option=com_content&view=article&id=206:2010-tournament-registration-process&catid=54:norcal-fll-specifics



AWARD DETAILS

Teams are recognized for excellence in different aspects of the challenge, and their competence in the 2 main categories of the competition, and how well they demonstrate FLL core values to the judges:

- **Robot Design:**
Parts are built robustly and efficiently. Robot displays a wide range of capabilities, is very stable, and handles environmental variations. The drive train must be controllable. Manipulators must be reliable and complete all tasks well. Sensors and pre-programmed sequences must be used for precise navigation. Lastly, the design must be unique.
- **Project:**
Primarily, it must be organized and must show persuasion based on enough research that is well integrated in a logical manner throughout the speech. Team data must be organized and well presented, and members must be able to thoroughly answer judges' questions.

The awards at FLL events fall into three categories.

FLL Core Awards

- Champion's Award – this award is optional for qualifying tournaments
- Robot Design Award
- Robot Performance Award
- Project Award
- Teamwork Award

Optional Awards

- Against All Odds Award
- Rising Star Award
- Team Spirit Award
- Judges' Award
- Local Awards

Special Recognition Awards

- Outstanding Volunteer Award
- Adult Coach/Mentor Award
- Young Adult Mentor Award



FLL Core Awards

Champion's Award

The Champion's Award is the most prestigious award that a team can win. It celebrates the ultimate success of the *FIRST* mission and [FLL Core Values](#). A champion is someone who passionately supports a cause. For FLL, our champions passionately inspire and motivate others about the excitement of science and technology, solving problems, working as a team, and demonstrating respect and Gracious Professionalism.

Robot Design Award

Judges look for teams whose work stands out and makes them say “wow!”. Judges interview teams to learn their strategies for solving missions and their understanding of the design process. They also evaluate the robot's mechanical design, degree of innovation, and programming effectiveness to further assess overall design quality.

The Robot Design Award may be broken down into three sub-awards: Innovative Design, Programming, and Quality Design.

Robot Performance Award

This award goes to the team whose robot is able to score the most points pursuing Challenge missions on the competition field. After each team has had a chance to run their robot for a minimum of three rounds, teams are ranked by their highest score in a single round. If two teams tie, their second highest scores are used to determine which among them has the higher ranking, and so on.

Project Award

Judges look for teams whose quality research, innovative solutions, efforts sharing with the community and creative presentation best reflect an in-depth understanding of the various scientific disciplines and issues involved with the Project. Judges look for the team's ability to have as many team members as possible participating in the presentation.

The Project Award may be broken down into three sub-awards: Creative Presentation, Innovative Solution, and Research Quality.

Teamwork Award

Teamwork is critical to succeed in FLL and it is the key ingredient in any team's success. This award is presented to the team whose members best demonstrate extraordinary enthusiasm and spirit, exceptional partnership, the utmost respect for their own teammates, and support and encouragement of fellow teams. They demonstrate confidence, energy, strong problem solving skills, and great group dynamics.



Optional Awards

Against All Odds or Perseverance Award

This award goes to the team that improvises and overcomes a difficult situation while still making a respectable showing, with an attitude that shows, “We can overcome incredible odds if we never give up, no matter what!”

Rising Star Award

At every tournament, there are teams that the judges notice and believe will soon be among the best and the brightest. The Rising Star Award recognizes a team that the judges believe stands out and that we expect great things from in future Challenges.

Team Spirit Award

Some teams really know how to have fun. This award goes to the team that most enthusiastically demonstrates a commitment to getting others to see how accessible, fun, and rewarding science and technology can be, especially when you are part of a great team.

Judges’ Award

During the course of competition the judges may encounter a team whose unique efforts, performance, or dynamics merit recognition. Some teams have a story that sets them apart in a unique way. Sometimes a team is so close to winning an award that the judges choose to give special recognition to the team. This award gives the judges the freedom to recognize the most remarkable teams for which a standard award does not exist.

Local Awards

Tournaments may also offer local awards, with criteria created by the tournament organizers. Please ask your tournament organizer for more information on local awards

Special Recognition Awards

Outstanding Volunteer Award

This award honors the dedication of the volunteer(s) whose assistance and devotion helps change the lives of children in a positive way.

Adult Coach/Mentor Award

This award goes to the coach or mentor whose wisdom, guidance, and devotion are most clearly evident in the team’s discussion with the judges.

Young Adult Mentor Award

FLL presents this award to the young adult, high school or college mentor whose support, impact, inspiration, and guidance are most clearly evident in the team’s discussion with the judges.

BUDGET:**Required Items:**

| | Cost | Comments |
|---------------------------------------|--------------|--|
| National Team Registration Fee | \$200 | Non-refundable |
| FLL Robot Set (NXT) | \$395 | Recommended for new teams; can be reused for more than one year |
| FLL Field Setup Kit | \$65 | Recommended for every team; changes every year |
| Total Required Items: | \$660 | |

Optional Items:

| | Cost | Comments |
|--------------------------------|---------------------------|---|
| Official Table | \$60 | Surface and borders, \$25-\$30; sawhorses \$30 |
| Tournament Entry Fee | \$50 or more | Varies |
| Tackle Boxes | \$10 per box | For storage |
| T-shirts | \$2-\$10 per shirt | |
| Total (Optional Items): | \$135+ | |

Other expenses may include shipping and handling and miscellaneous supplies, such as markers, paper, and toner.

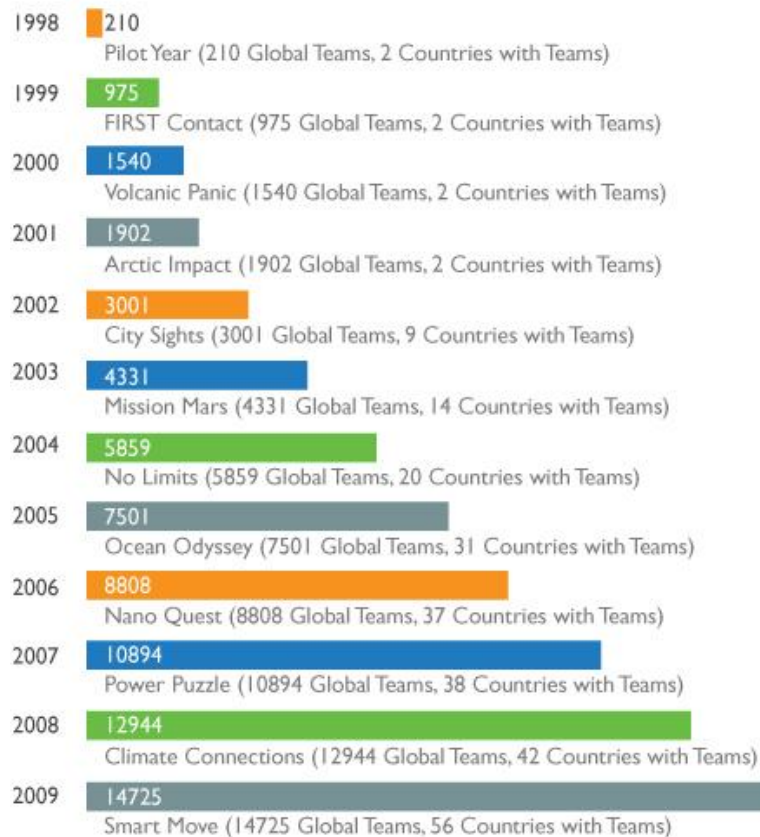


11 Years of Themed Challenges

Every September, FLL releases a Challenge, which is based on a real-world scientific topic. Each Challenge has two parts: the Robot Game and the Project. Teams of up to ten children, with one adult coach, participate in the Challenge by programming an autonomous robot to score points on a themed playing field (Robot Game) and developing a solution to a problem they have identified (Project). Teams may then choose to attend an official tournament, hosted by one of our Operational Partners.

Past Challenges have been based on topics such as nanotechnology, climate, quality of life for the handicapped population, and transportation. By designing our Challenges around such topics, participants are exposed to potential career paths within a chosen Challenge topic, in addition to solidifying the STEM principles that naturally come from participating in a robotics program. Team members also learn valuable life and employment skills which will benefit them no matter which career path they choose.

THROUGH THE YEARS





NORCAL FLL CONTACT INFORMATION:

Playing at Learning has an FLL section which hosts FLL tournaments. The two contacts in charge of NorCal FLL for are Mark and Jill.

Contact Mark or Jill:

By Email: fl @ playingatlearning.org

By Phone: (510) 656-8664

By Fax: (510) 656-8664

On the Internet: <http://www.playingatlearning.org>

US Mail:

Playing At Learning
42668 Lerwick Street
Fremont, CA 94539

FIRST FLL Email: flteams@usfirst.org

FLL LINKS:

1. <http://www.firstlegoleague.org/what-is-fll/twocol.aspx?id=251>

This website includes coaches' handbooks and other tournament information including pdfs and other files for all of the FLL process information.

2. <http://forums.usfirst.org/forumdisplay.php?f=24>

FLL Forum for Coaches and Players

3. <http://www.firstlegoleague.org/Default.aspx>

First Lego League Main Website

4. <http://usfirst.org/roboticsprograms/fll/default.aspx?id=970>

US First FLL Website



FLL SEASON OVERVIEW:

Official FIRST FLL Schedule:

Early May

Registration of FLL Team opens

Mid May

Registration materials and robot sets begin to ship

August

Field setup kits begin to ship

Last week of August to first week of September

The International Challenge is released.

Mid to late September

Team registration closes/Last Day to order any products

1st Half of October

Registration for tournaments

November to February

Tournament season

April

World Festival and Championships

PRE-SEASON DEADLINES:

3rd week of April/After the last FRC competition (whichever comes first): *Find coaches and mentors*

All teams require at least one adult coach who is at least 18 years old. Coaches do not have to be completely experienced but must be willing to learn programming and design along with the students. No programming experience is required. The best option for filling this post is finding a member, or ex-member, who is over eighteen and willing to attend the competition. Interest in FLL is a plus as this position requires a mentor/coach to have knowledge of the game and program as a whole. (Ryan Lee is not an option; he will probably be organizing tournaments and thus not be available.)

Refer to coaches list for list of possible coaches.

A mentor is any person with a specific area of expertise. They could be specialized in areas such as:

- **Engineer/Science professional** (from the specific challenge subject)
- **Programmer:** Teaches team about programming principals and trouble shooting.

For our team's purposes, we can't be picky about who we have mentor the teams. There must be at least 2 mentors at each meeting and a maximum of 3 mentors per team to maintain consistency for the coaches. These members/mentors will have to be taught the FLL programming language, game strategy, and tournament/judging layout.

These people would be our own team members. Whoever volunteers will take up these responsibilities. If mentors don't know enough about some of these aspects, officers may have to step in and teach the design techniques to the volunteers and have them learn, too. Keep this in mind.

Early May (1st week or so): *Registration for FLL Teams opens.*
(More information is in the following section.)

2nd week of May: *Start recruitment of team*

Possible sources: Kids can come from many different schools, after-school programs, home-school groups, scouts, religious groups, neighborhood groups, etc.

Teams should be registered immediately after complete confirmation regarding students involved, meeting place, and mentors.

Before registration takes place, a parent meeting is mandatory. We have to have parents' contact information, release forms for FIRST, and, of course, let them know what we're doing and when. **TEAMS MUST BE REGISTERED 2 WEEKS BEFORE THE CHALLENGE IS RELEASED (TWO WEEKS BEFORE THE 1ST WEEK OF SEPTEMBER). THIS IS A SELF IMPOSED DEADLINE BASED OFF OF SEVERAL YEARS OF FLL EXPERIENCE.**

PAY ATTENTION TO THE CAUTION BELOW:

The FIRST website suggests registering the FLL team early, at least before August, because of the HUGE surge in registration and orders starting in mid-August. To ensure that the team will actually be registered, or the supplies will actually be ordered, order before then. This depends on the amount of teams that MVRT has.

Upon registering teams: *Order robot set and Field Setup Kit*

Caution: Order before mid August. FLL Materials must be ordered by the end of registration. They are subject to product availability. Due to this reason, we highly recommend that every team purchase the Field Setup Kit early. A robot set is needed to participate. Field Setup Kits are needed to compete but can be shared between teams. The cost for this is separate from the registration fees. This also depends on the amount of teams that MVRT has. Abide by the rule of 2 tables for every 3 teams (ideally, of course).

2nd week of July: *Decide where and when the team will meet during build season*

It is very important to determine early when and where you will meet. Some options suitable for FLL build include team member houses, the MVRT Room, MVRT members' houses, and middle school rooms. Contact the middle schools first as to whether they will be okay with allocating resources to help you with your build. When trying to get a room at a middle school it is important to approach a teacher first and have them talk with the admins.

Also schedule practice workshops to ensure that there will be no problems with teamwork between the members of the FLL team. You must ask the parents how willing they are to do this and see when they are free to schedule these little practice sessions. (See 1st week of August.)

You should also want to determine a snack schedule so that the kids are not hungry during their build season. Some questions to ask are "How long are you team meeting going to be?", "What will you discuss through each of your team meetings?", and "Which dates specifically are you going to use?"

Deciding the number of teams you can actually support is a HUGE step. Besides the number of mentors and students you can have, space and finances are always issues. Having students pay is okay but can be a problem and, of course, cut out some possible members. Computers and robot kits are also an issue; addressing this at an officer meeting is necessary. For information



regarding the number of kits available, ALWAYS REFER TO THE PERSON WHO WAS IN CHARGE THE YEAR BEFORE.

1st week of August: *Teamwork and team practice activities*

NorCal FLL says that FLL is about the kids' efforts and kids working in a team. It is good for rookie teams to start before the challenge kickoff to start learning about and understanding how to work together as a team and to also learn about the equipment.

A long time before the actual challenge is released in September, FLL announces the new theme by posting a teaser on the FIRST website (usfirst.org/fll). Brainstorm ideas about the new theme and associated real-world problems. As a team, do a little research about the science behind the theme and how technology is used in the theme's field. Though the official game won't be released until early September, this is helpful groundwork for the team to get a background on the new game topic, and for the team to possibly come up with some project ideas, as well as get to know each other well before the season starting, to avoid any possible conflicts.

Also practice and get used to the LEGO Mindstorm kit. The link that FIRST provides (http://www.usfirst.org/uploadedFiles/Community/FLL/FLL_Assets/TeamPracticeActivity11.pdf) has some programming activities that the FLL team can practice with. Work out any kinks and get used to the different kinds of sensors and programming.

If working on programming activities before the season, make sure that the mentor is well knowledgeable in computer programming and is taught by one of the officers or veterans in visual coding. If you plan on having practice workshops in preseason FLL, then make sure those are spent on teaching the kids how to program using LEGO Mindstorm.

DEADLINES DURING THE SEASON:

1st week of September: *International Challenge is released*

The FLL yearly challenge has 2 categories: the project and the game. Teams have to use LEGO Mindstorm kits and design an autonomous robot to compete in the challenge for the year.

That weekend, have the first official team meeting of the season. Hold a general discussion of tactics: which components of the game the kids want to tackle and which ones they want to put off until later. **DECIDE ALL COMPONENTS THAT THE ROBOT NEEDS TO COMPLETE.** Also have basic idea of steps that the robot needs to perform to complete each of the projects (like a flow chart).

Now that all the details of the project have been given out, use the knowledge that the kids have learned from previous brainstorming sessions to narrow down all of the possible problems to a single problem that the kids would like to present. The project puts the annual theme into a real world context and usually has 3 components:

- Look at a problem (research it in detail)
- Propose a solution
- Share results with others (notable/appropriate members in society).

It'd be ideal if the kids could narrow down to a single problem and be assigned different parts of the problem so they can research it.

Kids should finish creating the flow charts for the components of the projects and start programming their NXTs. They should try to test them as they work, to fix any errors as soon as possible.

Kids should also try to have their problem for the project narrowed down, and, with the additional research, should create some kind of skit to present this. **THE SKIT IDEA MUST BE DECIDED BY TODAY.**

Register for FLL tournaments. Try to get it done this week and not push it over to the next week. The dates for the tournaments are released in September. The project should be done by today. Kids don't need to necessarily memorize their lines yet, but they should have their speeches ready, their props all set, and have their poster board ready as well.

September to October: *build season*

EVERYTHING IN THIS SECTION MUST BE DISCUSSED TO DECIDE HOW MVRT WANTS TO RUN THIS PROJECT.



Decide on whether the team wants to focus on the robot or the project. NOTE: The project is a mandatory part of the team for MVRT teams because teams cannot compete at higher tiers without one.

When deciding upon the focus or presentation of the project, do not be forceful upon the kids. Let them decide how they want to approach it, whether it is a skit or song or anything else.

When working on robots, stay away from hard deadlines. Let the kids split up into groups and attack each mission separately so that it can be an efficient process. Bring all the missions together and see if some can be integrated together.

The schedule can be adjusted as seen fit by the coach, but do NOT cross the hard deadlines.

November: *Competitions start*



THINGS TO KEEP IN MIND:

Start Recruitment Early.

In past years, recruitment has started after the next years' officer selection has been completed and the previous PR officer has passed over to the next. The graduation of team's seniors has caused problem in the recruitment. If the recruitment is to start right after competitions is completed, then we can focus on getting the team logistics down and not have to find a team later. **DO NOT PUSH RECRUITMENT OFF TO SUMMER! NOTHING WILL GET DONE.** The kids have left for summer programs and vacations and many of their groups and schools are completed for the year, so there is no organization to help for recruitment.

Find mentors and coaches early.

Plan out who you think would be suitable for the job. Make sure that they are willing and capable of working with kids who are much younger with them, and willing to teach them robotics concepts. They must show dedication and commitment to the team, as well as interest in robotics as a whole. During the summer, or after they have been found, make sure that they learn electrical programming and understand the concepts of FLL robots and what it takes to design a winning robot in FLL competition. Do not rely on graduating seniors for either coaches or mentors!

Register your team early.

After the team has been decided upon, have a team meeting with the parents of the kids so that all the logistics can be worked out. Once that is completed, make sure to register your team as soon as possible. Registration is on a first come, first serve basis, and if the spots are filled, we do not want to have to tell the kids that they cannot compete because they were not registered in time.

Register for tournaments early.

After tournament locations and dates are announced, make sure that you register for them early. When decided on which tournaments you would like to attend, make sure you get all the proper paper work and waivers completed by the kids and turned in **ON TIME**. If this is not completed your team and your work for the season will be lost for the year.