10 STEPS TO BECOMING A FIRST® LEGO® LEAGUE (FLL) TEAM
FIRST- (For Inspiration and Recognition of Science and Technology)

Step #1: Find a Coach

- Teams require two coaches 18 years of age or older, both needing to be screened through FLL. See FLL Youth Protection Program www.usfirst.org/aboutus/youth-protection-program for more information.
- Coaches can be: parents, teachers, engineers, scout leaders, or university students, etc. It requires no special skill, just patience, dedication and a willingness to learn alongside the team. The coach needs to direct the process the team follows to solve the Robotic Challenge* (see step 5 for details) without providing the solution.
- Computer skills are not necessary to organize the team, but the coach must have someone assisting (if not him/her) who has the time to read the important websites, do the on-line registrations and materials ordering, and introduce the team to the NXT software. There can be a mentor helping with software.

Important: Evaluate the time commitment. FLL teams can meet for as little as one hour to up to 10 hours a week. The time commitment will vary depending on your coaching experience and your team dynamic. A new team can have a learning curve and may need to have longer, more frequent meetings. As your team becomes experienced, meeting less hours may be an option. The FIRST® organization suggests starting with two meetings per week that are two hours long, and adding or subtracting time as a team’s needs indicate.

Step #2: Gather the Kids

- An FLL team will have up to 10 children, ages 9 through 14
- A minimum of 2 children is recommended per team
- To be eligible, a child cannot be older than 14 on January 1 of the year that Challenge is announced
- Kids can come from many different schools, after-school programs, home-school groups, scouts, religious groups, neighborhood groups, etc.
- You will most likely need to form your own team as existing teams do not often take on new members unless they are part of a school or youth organization. To see if your child’s school or a youth group in your area participates, check out the Indiana website for a list of team locations.

Step #3: Recruit Volunteers to be Mentors

A mentor is any person who works with the team in an area of expertise for at least one team meeting. Mentors help provide one-on-one interaction and serve as resources in their specialties. Some mentors include:
- Engineer: Teaches the necessary skills for the robot’s design or the project presentation
- Science Professional: An expert on this year’s Challenge subject presents real examples of science in practice, advises the team on the project research and its solution, recommends new sources of information for the team.
- General Volunteer: Schedules meetings, provides transportation and snacks, helps with fundraising, and provides carpentry assistance for building table borders.
- Technical Professional: Teaches team about programming principles and helps the team to troubleshoot programs.

Step #4: Become a FIRST® LEGO® League Team

There are three (3) steps in the team process in Indiana. They are highlighted in BOLD RED CAPS.

May-Sept TEAM REGISTRATION: FLL TEAM REGISTRATION
To compete in FLL tournaments, you must register your team at the national website where you will receive an FLL number. You will use this number as an identifier for all tournaments. Visit the national organization’s website www.USFIRST.org to officially register your team with FLL through their registration system which will also allow you to order materials. You will need a valid email address and will create a password to access an account that you will create. The national registration period begins in May until all slots are filled or September 30 whichever comes first. See table below for costs.

Step #5: Getting what the team needs

- Need a computer, either a Mac or PC, with internet access for:
  o finding out about the robotic “Challenge” which has it’s “kick off” in August
  o accessing a team forum where you can ask questions and read what other teams have to say
  o researching the yearly theme project
  o programming your robot
- Facility for meeting with a smooth floor space for the 4’ x 8’ mat, or the optional FLL table
A secure place to store the FLL robot set and partially assembled robots between team meetings
Order a Robotic kit if you do not have one. Teams may use LEGO Mindstorms, NXT, or EV 3. Order the official FLL Field Set-Up Kit for the Challenge* (see explanation below) through the registration site. If you do have some type of allowable robotics set, you may decide to supplement your kit by purchasing additional sensors and other parts. A list of parts and prices is available on the National FLL website.
Optional: Build a Challenge Table or an abbreviated practice table
See table below for costs

*Challenge: Each year FLL chooses a theme with a corresponding “challenge” to students. The Challenge revolves around a set of tasks that must be performed on the Challenge Field (the Field Set-Up Kit provides the Lego structures and mat upon which the tasks must be performed). The Challenge also includes a set of rules/guidelines that must be followed when the team and their robot are performing multiple tasks. During the competition the teams must follow these guidelines which are overseen by a referee, just like in any sport. The Challenge for each year is revealed on the national website in September. Challenges have included Mission Mars, No Limits, Ocean Odyssey, Nanoquest, Power Puzzle, Climate Connections, Smart Moves, Body Forward, Food Factor, Senior Solutions, Nature’s Fury, and World Class.

Step #6: Evaluate Your Cost and Funding for a Team

Sample Budget
(Assuming no in-kind donations such as goods or services)

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLL Team Registration Fee</td>
<td>$225</td>
<td>Non-refundable; goes to FIRST</td>
</tr>
<tr>
<td>FLL Robot Set-NXT or EV 3</td>
<td>NXT $435*</td>
<td>NXT or EV 3 are recommended. Teams will continue to be allowed to use NXT even though LEGO introduced the EV 3.</td>
</tr>
<tr>
<td></td>
<td>EV 3 $499</td>
<td>If needed; can re-use for more than one year</td>
</tr>
<tr>
<td>FLL Field Set-up Kit</td>
<td>$75*</td>
<td>Non-refundable. Every team must have or have access to a Field Set-up kit. Teams may share.</td>
</tr>
<tr>
<td>Practice Table (optional)</td>
<td>$25-$60</td>
<td>Surface and borders made of wood: $25-$30 Place on table or sawhorses, or floor for practice</td>
</tr>
<tr>
<td>Tournament(s) Entry Fee (optional to attend)</td>
<td>$45 Qualifying $45 Championship</td>
<td>Varies with tournament: assume a Qualifying Tournament fee and a Championship Tournament fee</td>
</tr>
<tr>
<td>Batteries &amp; extension cord</td>
<td>$30 for the season $55</td>
<td></td>
</tr>
<tr>
<td>Rechargeable AC Battery (optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team spirit items for 10 people max. (i.e. shirts, posters, etc. (optional)</td>
<td>$2-$10 per shirt</td>
<td>Most teams wear identifying “garb”</td>
</tr>
<tr>
<td>Transportation to QT &amp; possibly Championship Tournament (if advanced).</td>
<td>Varies by location</td>
<td>Also may need hotel for Championship held in Fort Wayne</td>
</tr>
<tr>
<td>Additional sensors and/or Servo Motor (optional)</td>
<td>$18-$35 each</td>
<td>Sensors: Color, touch, or light; Interactive Servo Motor</td>
</tr>
</tbody>
</table>

*plus tax & shipping based on geography

Other expenses include: miscellaneous supplies, such as markers, paper, toner cartridges, color copies (building instructions), scissors, folders, poster board, binders, other office supplies, snacks, and travel expenses.

- Fund your team's expenses from team member contributions
- Seek a sponsor who might be from one of the parents’ workplaces
- Ask local businesses related to technology to sponsor your team
- Hold a team fundraiser like washing cars, bake sale, raffle, etc.
- Connect with an organization like a youth group, school, or professional organization that can assist with the funding

Step #7: Work with the Team

- Read the Team Manual thoroughly
- Meet on a regular basis with the team (teams usually start by meeting at least once a week for 2 hours if meeting after school or in a club or neighborhood. More meetings will usually be added to complete the project.
• Teach your team about the FLL Core Values. Practice some activities to build good teamwork skills so they learn about working together, respecting each other, sharing ideas and helping with team responsibilities (review the FLL Creed: see national website)
• Make sure the kids do the work; not the coach – be the “guide on the side”
• For robot design and programming: Learn and practice the engineering design process: analyze the problem, brainstorm ideas for solutions, design, build, program, test, evaluate, re-design, re-build, test again, (may do this many times) and then practice good results until they are consistent.
• For project: analyze the problem; define, ask questions, research, brainstorm solutions, create a clear outline of problems-solutions, share your findings and solutions with others. Then find a creative, fun way to express the project process you went through to the judges at the tournament and then practice the presentation many times. Don’t forget to ask each other questions and practice answers so that you know what to say to judges.
• Find a team name, motto, and make find/make some team items like posters or buy t-shirts; make it fun!
• Keep up-to-date on robot rules and the project by checking the FLL website periodically for updates to both of these components. Sometimes official decisions are made during the season and they are posted on that site.

Step #8: Apply for Indiana Qualifying Tournaments

All teams must take part in the October TOURNAMENT APPLICATION process in order to attend an official FLL Indiana QUALIFYING TOURNAMENT (QT)

Once you have become an official FLL team, you can attend Indiana tournaments. All teams wishing to participate in the FLL Indiana Championship Tournament must first attend a QT to compete for a spot among the teams that will advance to the Championship. For all tournament application details see the Indiana Championship FLL Website hosted by IPFW: www.etcs.ipfw.edu/fll

Step #9: Prepare to go to the Qualifying Tournament (QT)

• Read thoroughly all tournament information/guidelines sent in the mail and on the tournament websites
• Read FLL Indiana Email Updates sent out periodically
• Plan for transportation, extra snacks/food, materials needed for the tournament, hotel stays if needed
• Discuss Core Values and the concept of Gracious Professionalism with your team
• Examine the rubrics, awards given, and the criteria in the manual to prepare for judging
• Practice with other adults so the team feels comfortable with the judges

Step #10: Championship Tournament!!

November: INDIANA CHAMPIONSHIP FLL TOURNAMENT ACCEPTANCE

If your team advances from a QT, you must read the packet immediately provided at your QT and confirm your intention to compete at the Championship Tournament by the Monday after your QT. Qualifying teams will be given a letter at their QT with instructions on how to confirm.

HAVE FUN!!!

SUMMARY OF THE 3 IMPORTANT INDIANA TEAM & TOURNAMENT STEPS

Team Registration Step 1 (May-Sept): Register your team with the national FLL organization (team registrations will be accepted from May until all slots are filled or September 30 whichever comes first) before registering for any tournaments. First, you must visit the national organization’s website www.USFIRST.org where you can link to the registration page (or link directly https://gofll.usfirst.org/) to officially register your team with FLL. You will need a valid email address and will create a password to access your account.

Tournament Application Step 2 (October): Apply to attend an Indiana Qualifying Tournament in your area. You should visit the Indiana Tournament website www.etcs.ipfw.edu/fll and apply to attend one of the official Indiana Qualifying Tournaments. There are 11 tournaments across the state. Indiana Qualifying Tournament application takes place in October. See Indiana website for exact dates and directions.

Championship Advancement Step 3 (Nov-Dec): Confirm you attendance at the Indiana Championship Tournament If your team is chosen to advance to the Championship from a QT, you must confirm your intention to compete at the Championship Tournament by the Monday after the QT. Qualifying teams will be given a letter at their QT with instructions on how to confirm.

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