FIRST Australia
Regional Tournament Handbook

Event
- Parking Information/map
- Schedules
    - Include 'spare' teams, quantity "2"
    - Three robot game rounds; three judging sessions per team
    - Avoid a rapid pace
- Review for adequate volunteers
    - At least 1 referee per table
    - At least 2 judges per judges' room
    - Pit admin, judges assistants, MC, etc.
- Opening/closing ceremonies
    - with scripts
    - with slides/PPT
- Sponsor signs
- National Invitations
    - Must be given in the closing presentation
- Volunteer room
- Directional signs
- Award trophies and certificates
- Volunteer shirts (provided by *FIRST* Australia)
- Volunteer gifts
- Lunch (i.e Pizza or Subway)

Team Pits
- Pit areas marked out
    - Must be equal sizes/facilities
- Team Packets
    - Team Schedules
    - Pit/venue map
    - Participation certificates
- Release forms
    - sent out ahead of time and spares at the comp.
- Sticky Dots
- Practice Tables with Challenge Sets

Judging
- Must have Certified Judge Advisor
- Judging "Check In Stations"
    - One room per judging session; no combined judging with the exception of robot design which can be held in a library in separate corners of the room
    - Technical judging requires FLL tables with challenge sets
- Assess Judge skills and use the best skillsets for each category of judging
    - At least 2 judges for each room

1

- All judges properly trained & confirmed attendance
- Judges' packets:
  - Judge Schedule
  - Clipboard
  - Pen/highlighter
  - Sticky notes
  - Judging rubrics
  - Core, Robot Design or Project Judging Guidelines per season
- GP Forms
- Core Values Exercise, decided in advance - same for all teams. Must keep secret for fairness.
- Project Room requires pc, projector, A/V access. Ideally with internet; however, teams are encouraged to bring a laptop with their presentations or a USB.

Robot Game
- Competition room
- Competition Tables with challenge sets
- Robot rules and updates
- Referees - trained ahead of time and confirmed.
  - At least 1 referee per table
- Properly trained & prepared Head Referee
- Scoring & ranking system, computers, A/V and screens.
- Spectator space
- Referees' packets:
  - Ref's Schedule
  - GP Forms
  - Scoring sheets
  - Pen
  - Clipboard
- 40 cm rulers
- Challenge set spare parts
- Challenge set build instructions
- **Music!!!!!**

Event

Parking Information/Map

Many FLL Teams travel for half an hour or more to get to a competition, and very few will typically know the venue well. As such, it's important that teams know where to go. To this end, you have to make sure that all your coaches have a **parking map** well before the day of competition. This map should point to a location/s with enough parking spots for all your teams, within walking distance of the event locations. The map can also show them the best route from the parking spots to the comp, but that's a secondary consideration: the first is to get them the maps, or at least the information. Keep in mind that the parking area should, if possible, not require teams to cross roads, as teams can have up to 10 nine-year-olds, and so you should keep them from crossing roads as a safety precaution.

Schedules

The schedule is one of the most important deliverables before a competition. Whether you're running a one-day competition or more, every team needs to see all three sets of judges (Technical, Project and Core Values) once during the competition, and they need to compete in the Robot Game at least three times.

<div align="center">

This is the *FIRST* Australia official scheduler:
https://www.firstaustralia.org/systems/scheduler/

</div>

Things to keep in mind include:
- Teams need a bit of 'rest time' - both to get a bit of a breather and to get between places.Therefore, the schedule should not make any team have two engagements within a short period of time. 10-15 minutes is typically a good minimum, but this can vary depending on the distance between pits, judges and competition tables.
- Successful schedules can only be made with an even number of teams, so if you have an odd number, add in a 'stand in' team. It's also a good idea to have 2-3 stand-ins, just in case teams show up unannounced or there's been a mix-up. You could even have a perfectly tailored schedule, and an alternative on hand with extra teams.
- Judges, referees, MC's, pit admin, the tournament organiser, and all teams should have a copy of the schedule. However, they don't all need the entire schedule. Judges, refs and teams can be given their own individual segment of the schedule.
- Make sure matches have enough time between them to cue teams, reset the field and play the match. 6-8 minutes is typically a safe buffer time.
- For one-day tournaments, judges need to be finished before noon if at all possible, to allow time for judge deliberations.

Attending Teams

As the organiser, you need to know exactly which teams are coming. This doesn't mean exact numbers from each team, but you need to be aware of how many teams you will get, what their team name is, and any special requirements. Make sure you get all this information (call up every coach listed as 'interested' to confirm if you have to) at least a month before the tournament so you can make informed preparations.

Access the registration system here:
https://www.firstaustralia.org/systems/fllregistration/index.php/user/home

If you do not have a log in as a tournament director, contact FIRST Australia for assistance.

Volunteer Recruitment

Please review provided templates in the FIRST Australia Google partner drive for further information. *FIRST* Australia requires *(as of 2017)* using the Google form template provided for registration and the assignment template as provided in Google file.

It is suggested you begin recruiting no later than two months out from your event. Reach out to professionals in your community, schools, local universities and organisations.

Opening/Closing Ceremonies

All official *FIRST* events require an opening & closing ceremony. For the opening ceremony, you may want it to simply be a welcome, or you can run through the proceedings of the day. The closing ceremony is the bigger event, where you should give out all the awards of the competition and national invites. You should also thank your sponsors (both for your event and for all of FLL) and your volunteers. Above all, this ceremony should be hosted by an exciting MC, or at least shouldn't drag on. The kids and coaches should be left with a fun last impression of the day.

Also, the closing presentation should have a PowerPoint presentation, or something similar, to reveal the winners of the awards. If you have a projector or large screen, this makes the presentation feel more official and more exciting. It's also nice to be able to bring all the students on stage if possible. One way to do this is to have a high-five line for all the award winners, but there are other ways.

There will be an opening & closing script template for use on the shared Google drive; updated for each season. You may edit to add your local sponsors, Welcome to Country & special guests/speakers.

Sponsor Signs

If any corporations or businesses supported you in preparation of the tournament, they should be recognised. A good way to do this is to put up signs in the venue, which may need to be made in advance. This is not a requirement for an Australian tournament, but it is highly recommended. Any sponsor is a good sponsor, and should be decently recognised and honoured.

Also, all global and national sponsors need to be recognised in some way at the event. This is a requirement for Australian tournaments. To clarify if you're recognising these sponsors appropriately, contact a *FIRST* Australia representative.

National Invitations

As an official Australian FLL Tournament, you get the right to send a small number of your teams (you should know how many; if not, contact luan.heimlich@mq.edu.au) to the National competition. To decide who you send, you have to follow the Champion's Award criteria, which contains a list of which award winners get invitations. Typically, the Robot Game winner shouldn't be the first consideration, as the most competitive teams are good in all the areas, not just the game.

The important thing about the invitations, however, is that all the teams know who's invited before the end of the day. In the closing presentation, you HAVE to tell your invited teams who they are; teams may leave before you get another chance to tell them, and you want your region to be properly represented at Nationals.

If an invited team declines the offer for one reason or another, it's your responsibility to invite other teams. You are given a quota for how many teams you can send, and it's in your best interest to send that many teams, no fewer.

Volunteer room

The people who run your tournament are, typically, volunteering to do it. As such, they don't need to be paid, but you should do your best to make sure they're well treated. One huge thing you can do for them is to set up a 'volunteer room': a room which is off-limits to the general public, with a little bit of free goodies for the volunteers. It might have muffins, or sandwiches, etc. It should certainly have bottles of water, and could have tea and coffee. The important thing is that your volunteers have somewhere they can get a bit of a breather, and feel well treated. Obviously, make sure they don't stay in there all day, but it's a very nice thing to do, and more importantly, happy volunteers make a happy event. If the officials at a tournament don't like being there, they won't come back, and the kids attending won't have as much fun.

Directional signs

Teams and volunteers need to know where to go. You can give each person a map of the venue with important locations noted, but it's strongly advised to put up signs around the place pointing to places like Pit Admin, judging rooms and competition tables. This is especially important if you have a big venue, or if there's a bit of a walk between places.

Directional signs can be as simple as pieces of paper blu-tacked to the wall with arrows drawn in permanent marker, so long as they get the job done.

Award trophies and Certificates

Well before the competition takes place, you need to:
1. Decide which awards you're going to give out.
2. Order trophies for these awards. Note that this is just for unofficial awards; FIRST Australia decides which official awards you give out and gets you the trophies. Email luan.heimlich@mq.edu.au for more information.
3. Make certificates for each award.

The templates are available in the shared Google drive.

Remember that having a few Judges' Awards is a good way to reward teams who you like, but don't fit any official criteria.

Also remember that you can give out as many awards as you want, but you're limited to a **set number of official awards.** Other awards can be little things that don't mean much, but leave teams smiling.

Volunteer Shirts

At your competition, your volunteers need to stand out. If teams have questions, or need to talk to officials, they need to be able to recognise all the tournament volunteers. As such, you need to have something to distinguish your volunteers. Tee shirts are provided by *FIRST* Australia.

Volunteer Gifts

This is another optional thing to keep your volunteers happy. In the closing ceremony, you can give little gifts to your volunteers, or at least to notable volunteers, e.g. the head referee. These gifts can be as big or as little as you want them to be, but are a nice way to close the day for your volunteers, which will make them want to volunteer again next year.

Lunch

If you can manage it, however you create the schedule, you should try to put a lunch break into the schedule. Tournaments can be long and tiring, and all teams (and volunteers, for that matter) need a break to get a breather and some food. This can be just a 30-minute gap in the schedule, and that's quite enough.

You don't need to provide food to teams *(as long as they know this in advance!!)* but it's a nice gesture to get food for your volunteers. *FIRST* Australia generally provides pizza or Subway trays to volunteers for events in Sydney.

Registration Table

When teams and volunteers arrive, you have to know exactly who's there. That way, if a team/volunteer doesn't show in time, you can prepare for it. To this end, you should set up a registration table where you can sign in people, give them the information they need and collect their media/*FIRST* consent release forms.

Teams

Pits

At the competition, teams are going to have things with them that need to be kept somewhere. They are also going to need to work on their robot in between matches. As such, you should have a specially designated 'pit area' for each team. This can be just a small table, as long as each team has the same kind of pit area. Also, every pit should have power, whether you place them near walls with power points or run extension cables to each pit. You can set up "power stations" for the event, which is the template *FIRST* Australia is now following.

The pit area should be fairly central, if possible, not too far from anywhere. However, if you can keep all the teams in the same area, that's even better. School halls or gymnasiums are good pit areas, if you can get them. Smaller rooms are ok if you don't have too many teams.

Team Packets

When teams arrive at the competition, you should give them their individual resources. It works well to give these resources out at the registration table, but you can also leave them at each team's pit.

Included in these 'team packets' should be:
- The team's schedule for the day, i.e. when they have to be at each judge session and match. Also put in the opening and closing ceremony times if you can.
- Tournament map; not 100% necessary, but it's a nice touch and it makes them feel prepared.
- Participation certificates: dropping 10 generic participation certificates in each team packet, maybe with a space for them to write their names, is the preference for official events and a template is provided in the shared drive. These are separate from the Award Certificates

Release forms

All individuals who participate in an official FLL tournament have to complete and return a FIRST Media release form. *See shared drive.*

Depending on your venue, people may have to complete other release forms for media or insurance purposes; you should discuss this with the venue if you're not sure.
Make sure the forms are sent out MONTHS before the tournament, so that coaches have ample time to get them filled in. When teams arrive to the registration table, they should only be allowed in if they bring one completed set of release forms for each student and adult attending. Remember to keep spares at the registration table, because coaches or students will inevitably forget to bring them.

Sticky Dots

This is purely optional. You can find a system to tell media people who can be photographed and who can't, to make sure you don't get into legal bother over photos taken and used. One way to do this is to buy coloured 'sticky dots', and when individuals give in their release forms, you give them a sticky dot. That way, when photographers are looking for subjects, they can focus on the ones with sticky dots, and that way you can be certain that any pictures taken can be used anywhere with no legal ramifications. This is not a requirement, but has proven to be effective.

Judging

Judging Rooms/Spaces

Each panel of judges must have an individual space.room - separate from each other. It's not fair to the teams or the judges if you put them somewhere where they can't be heard and can't hear, or allow other teams to see/hear their judging session - so be careful with picking these areas. Robot Design is the only exception; you may use a large room like a library for multiple

judging areas.

Project judging rooms should have access to a computer, projector and A/V. Core Values judges may or may not require extra supplies based on the core values exercise. Technical judges need a full FLL table and a complete challenge set, so that the kids can showcase their robot exactly as they would in the competition. Note that for technical judges, the challenge set is not enough. They need the real table so that the boundary wall is where it should be. A lot of teams design their robots to use the boundary wall, and if it isn't present, they can't show their robot properly, which isn't fair to the teams and will leave them feeling bitter.

Judge Recruitment

Long before the tournament, you need to decide who your judges are going to be. Tournaments typically have 2-4 panels of judges (more for BIG competitions), so that they can finish before noon. Each panel needs at least 2 people to be effective, but more is perfectly ok.

The people you select need to be patient, friendly and discerning. Each team should be made to feel as comfortable as possible in their judging sessions, but at the same time the judges need to make some tough decisions. They also need to be able to explain themselves to other judges during judge deliberations.

Head Judge/Judge Advisor

Every tournament requires a **Certified Judge Advisor**. This person needs to know each branch of judging well, and needs to be able to train the judges. The Judge Advisor will need to communicate with *FIRST* Australia in Sydney to be properly trained and prepared for the season. The Judge Advisor also needs to be able to communicate with all of the volunteer judges beforehand to train them in each category.   Materials are provided for each season online.

Judge Training

This is an absolute **MUST** for any competition. The Judge Advisor needs to meet with all the judges and train them on how to judge. The teams who attend work for months to compete in each branch of competition, and they have to have a fair shot at the awards. Every kind of judge (Technical, Project and Core Values) needs to know what to look out for, what to reward, and what constructive feedback to offer.   This is not something that can be taught on the day of competition, they have to know it beforehand. For more information on how to train judges, contact *FIRST* Australia in Sydney.

Judges' Packets

Judges need certain resources at the competition, so you should put together these 'packets' to provide them with everything. Each judges' packet should contain:
- The judges' schedule. They need to know which teams they're seeing and when. Be careful to avoid any conflicts of interest - often your volunteers are involved with teams, and they absolutely CANNOT judge teams they have a connection with.
- Judging rubrics. Each judge panel needs to have at least 10 of their kind of rubric (technical, project or core values). These rubrics, available at online or through the Google drive, and **are required for use in FLL Tournaments. After the tournament, each team has to be given copies of their three rubrics - these are usually scanned and emailed the week following the tournament.**
- Clipboard. Not absolutely necessary, but it makes things far easier, especially if the judges don't have tables in front of them. Recommended just in case.
- Pen & highlighter. Judges need to be able to write down all observations and mark their rubrics.
- Post-it notes. Teams are given their rubrics at the end of the day, so judges should **never** write non-constructive negative comments on the rubrics. Provide the judges with post-it notes that they can put on each rubric and can pull off before giving them back to teams. Of course, it doesn't have to be negative comments on the notes: it can also be little hints to remind judges of teams for when they sit in deliberations. Notes should say things you may not want/need teams to hear, like "the team with silly hats", "yellow team", "morph suits", "this team annoyed me" or "terrible robot". However, judges still need to write on their rubric more than their post-its, so teams get useful feedback.

GP Forms

Teams shouldn't be made aware of this, but they can be put into consideration for awards by particularly exemplifying Gracious Professionalism (GP)...and they can be taken out of consideration for such awards for the inverse. Volunteers should always be on the lookout for teams being particularly un-gracious or rude to other teams, or teams being particularly amazing outside of judging or matches, and report these situations to judges during deliberations. In order to facilitate these reports, you should plant 'GP forms' with most of your volunteers, simply pieces of paper on which volunteers can write down any observations they have. These are available on the Google drive.

For example, a team is in the running for the Champion's award. During a match, a referee notices this team mocking a team whose robot isn't working. The referee writes this down and sends it to the judges, who are deliberating the awards. This piece of information would make that team lose any chance for an award. FLL should celebrate the right qualities in teams; good conduct both on and off the table should be rewarded, and poor conduct should be discouraged.

Robot Game

Competition Room

You have to have a room in which to run the competition. This room needs to be booked well in advance, needs to be near enough to parking, judging rooms and pit areas, and needs to be big enough to hold spectators (assuming you want people to see the event). It should also be consistently lit, so as to not cause problems for teams who use light sensors - skylights and big windows are not good for FLL competitions. Should also be equipped with screen, projector, computer and A/V (including microphones).

Competition Tables

Your competition needs to have several FLL competition tables built according to standards (which are detailed in the game manual). These tables should be elevated to allow teams to stand at them, so they should be put on desks or, if you can afford it, sawhorses. Each table you have should also have an FLL challenge set assembled and dual-locked to an FLL challenge mat. You have to make sure each challenge set is correctly assembled and complete, and that each mat is as wrinkle-free as possible. If you can, roll out the mats prior to the competition and lay them out flat to work out the creases.

Practice Tables with Challenge Sets

Every competition should have a few practice tables where teams can sign up for 5-10 minutes to test their robots, since teams are not allowed to bring their own mats/sets to the competition. These practice tables should be close to the pits, and should have properly built tables. The sets should be complete and properly assembled and the mats should be wrinkle-free, but it's far less important for the practice tables than it is for the competition tables. There are sign-up templates in the Google drive.

Robot Rules and Updates

The referees at the competition tables, or at least the head referee, should have a printed copy of the robot rules and updates. That way, if a team queries a referee call or score, the head referee can look it up in the rules and make a fair & consistent assessment. The competition should be as fun as possible, and so if teams have identified a loophole in the rules, they most certainly can use it, but at the same time, you can't be too lenient, since other teams will stick to the rules to the letter. Only if you have a copy of the rules can you be perfectly fair, and if a team asks to see the rules, you have to let them.

Referees

Each table you have at the competition should have at least 1 associated referee. If you have more than this, they can swap out and take breaks, but you must have 1 per table, at least. You cannot have referees score two tables at once; it's not fair to the kids or the refs.

Also, all the referees should be trained ahead of time, and the head referee should go through the rules with them. An FLL referee can see every possible situation arising on the table, and he/she needs to be able to respond to it appropriately. If referees don't know the rules, they can't make the right call when there's a dispute. They also can't score the matches properly, so you don't get a fair tournament. Nothing disheartens teams more than when referees make a bad call, and while referees sometimes have to go against teams, it has to be fair.

For instance, if a team brings two EV3 robots to the table with them for a match, the referee has to tell them they can't run both. Teams are only allowed to bring one to the competition. If a referee doesn't know this, that team gets an unfair advantage.

Head Referee

The head referee has a difficult job at the competition: if a team disputes a referee's call or understanding of the rules, the head ref has to resolve the dispute. As such, the head referee has to be a fair arbitrator and have a rock-solid understanding of the rules. The head ref is required to be trained by *FIRST* Australia's Head Referee, Jack Aakhus and should be able to pass along training to the referees at the tournament.

The head ref should also be someone who can 'work a crowd'. When no disputes are arising (which, if the head ref trained the referees properly, will be always), the head ref should be working with the MC to make the event as fun as possible.

Scoring & Ranking System, Computers and Screens

After each match, a dedicated scorer should put the referee's scoring sheets into the official *FIRST* scoring and ranking system. The system will show relative rankings for teams, sorted by number of points, and will display it to teams, either by projector or big monitor.

Referees' Packets

Referees need certain things while they're working, so please provide a packet for each. Included should be:
- Referee schedule: a list of which teams are coming to the referee's table and when.
- Scoring sheets: sheets that allow referees to easily note down the team's score. These are typically available online after the challenge is released each year.
- Pen: to write down the results

- Clipboard: this makes it easier to score teams, considering referees rarely have access to tables.

40 cm Rulers *Varies from year to year. Check season handbook.

One thing you should keep at each competition table is a '40 cm ruler'. These can be absolutely anything that measure 40 cms, such as a piece of folded paper or bit of PVC pipe, or a 1-meter ruler. The reason for this is to measure team's robots: they cannot exceed 40cm above the table. If referees doubt this for any robot, they should check it before the match begins.

Challenge Set Spare Parts

Every year, the challenge set has small fiddly bits that have a habit of going missing. For instance, in the 2011 Food Factor challenge, there were lots of small LEGO food items, like bananas and carrots. Sometimes they would drop on the floor, or teams would accidentally walk off with them. Whatever the reason, things go missing. As such, it's a good idea to keep some spare parts in Pit Admin. If you need some of the 'spare part kits' from LEGO specifically put together for the year's challenge, contact *FIRST* Australia.

Challenge Set Build Instructions

Challenge sets will invariably break when robots are competing, so you should have a copy of the challenge set build instructions on hand during the competition. That way, if any part gets terribly damaged, or you have an inexperienced Table Reset crew, you can rebuild the set properly. This is simply a good precaution.

Music

This may seem like a pointless exercise, but **every FLL competition should have music.** Naturally, it should be child-friendly music, suitable for 9-16-year-olds, but it should also be fun and exciting. These competitions are supposed to bring an excitement about Science, Technology, Engineering and Maths to students, and how can it do that if it's not an exciting event? Music is an easy way to make matches and general bustle far more exciting, and if you can get kids dancing, it's even more fun for them. Robotics competitions can be fun!

Volunteers

- Tournament Director
- Certified Judge Advisor
- Certified Head Referee
- MC
- DJ
- Table Reset
- Registration Table
- Volunteer Coordinator
- Judge Helpers
- FOOD
- Runners
- Pit Admin
- Scoring (Administrative)
- Scoring (Technical)
- Judge Check-in
- Judge Script Writer
- Referees
- Photographer/Video Crew
- Judges
- Firefighter! (Usually the tournament director, solving problems on the day)

Tournament Director

If you're reading this, this is most likely you. Your job is to coordinate the volunteers: make sure they are where they need to be when they're needed, make sure they know what they're doing, etc. Basically, you run the people who run the event. For bigger tournaments, 'volunteer organiser' is a separate role, but for Australian regionals, the Tournament Director is there to make sure the entire day runs smoothly, leaving it to the other volunteers to physically do things.

Certified Judge Advisor

The Certified Judge Advisor is the head judge. This person makes sure all judges are doing the right thing, including training them beforehand and checking up on them during the event. The judge advisor also runs the judge deliberations, and answers any questions the judges have.

Certified Head Referee

The head referee (HR) has multiple roles. For one, the HR coordinates the referees, making sure the tables are always manned. For another, the head referee resolves disputes the kids have with the referees. As such, the HR needs a thorough understanding of the rules, both of FLL in general and the year's particular game. Finally, when everything else is good, the HR's job is to make the competition fun. Communicating with the students and volunteers in an excited and fun way, the HR makes sure that whatever the outcome for teams on the table, they walk away smiling.

MC

The Master of Ceremonies is the public face of the competition. He/She runs the opening and closing ceremonies, keeps a running commentary going for each match, and adds an air of fun and excitement to the entire tournament.

DJ

One easy thing you can add to the tournament to make it fun is music. Cheerful and exciting music should be played around the competition tables, during and between the matches. The DJ is the one who selects the music and plays it. If he/she can get people dancing, the role has been successfully filled!

Table Reset

At each table, or at least each pair of tables, there should be a person stationed to reset the challenge set after every match. Every team coming to the table should see the same thing, to make the matches fair. The table resetters (who can be the referees) need to know exactly where everything goes and need to be able to put it there quickly, no matter how messed up the table is. They also need to know how to repair components that break, since components ALWAYS break.

Registration Table

This is a temporary job, only really necessary for the start of the day. People on the registration

table need to sign in teams to the event, make sure they all have media release forms for every student and adult, and give them whatever they need to compete.   The people at the registration table need to be professional, yet friendly; these are the first people the teams will meet at the competition, so the first impression should be a good one.   2-4 people here is recommended.

Volunteer Coordinator
Similar to the registration table people, the person in charge of volunteer check-in needs to note down which volunteers are at the event and give them whatever they'll need - referee or judges' packets, volunteer shirts, task descriptions, etc.

Judge Helpers
The judges stay in the same room for most of the morning (for one-day tournaments) and don't usually get much of a break. As such, you should have a few 'junior' volunteers dedicated to making sure the judges stay happy for the teams. This could involve taking coffee orders, collecting teams who are late, etc.

Food
You don't necessarily have to feed the teams, but it's strongly suggested to feed your volunteers lunch. As such, you need someone on hand to order, get and distribute food, whether it's a Subway pickup or a pizza order. You may also have a tea & instant coffee station setup with biscuits for morning/afternoon tea.   If providing food for volunteers, make sure the dietary requirements field is included in the Volunteer Google Form (located in Google drive).

Pit Admin
The Pit Administrator is set up in the pit area to address any problems that arise. Both teams and volunteers can go to Pit Admin to ask for directions, schedules, lost property, etc. The Pit Admin also has to make sure teams go to their events on time - this may involve coordinating guides or putting out announcements over intercom, depending on your event.

Scoring (Administrative)
Someone needs to be assigned to put scores from each match into the scoring/ranking system. This involves simple data entry and reading off scoring sheets.

Scoring (Technical)
Someone needs to be assigned to making sure the scoring/ranking system, and associated input/output devices, are functioning properly. This person needs to be tech-savvy and needs to know the scoring/ranking system you use well, even if it's as simple as an Excel Spreadsheet.

Judge Check-in
When teams go to their judging sessions, someone should be assigned to send them to the correct room and check off that they've arrived. This can be a person at a table between the judging rooms and the pits, and the primary purpose is to make sure all teams get to judging on

time. If a team hasn't checked in within a certain time frame, this person can send a runner to find them and send them in.

Judge Script Writer
During the closing ceremony, you announce the award winners. The way this is typically done is to read off the description of the award, and then a short blurb about the winning team; what stood out, why they won, etc. The judge script writer's job is to write this blurb for each award. Typically, this is one of the judges, but it can be anyone particularly clever, witty or punny (the blurbs should make teams laugh if at all possible).

Referees
The referees have one of the hardest jobs at the competition: making sure teams stay within the rules. The referees have to watch each match (at least 1 referee per table) and check that teams aren't doing anything illegal, such as using 4 motors.

If a team disputes the referee's decision, the referee should bring it to the head referee, who should be more aware of the rules than any individual ref.

At the end of a match, referees also count up the points the team scored and write it down for later entry into the scoring/ranking system. An important thing the referee then has to do is go through the score with at least one team member to make sure they don't have any problems with it.

Finally, the referee needs to make sure the teams don't walk off with parts of the challenge set; They don't do it on purpose, but often parts get stuck or placed in robots and teams forget to remove them.

The referees **MUST** be trained ahead of time to work with the students and to know the rules. The head referee should take on this responsibility.

Photographer/Video Crew
You may wish to have one or more volunteers working a camera during the event to take pictures and catch footage. This can later be used for advertising purposes and to recruit new teams in your region.

Judges
The judges work in panels to see up to 10 teams each and decide which of them should be given awards. The panels are usually 2-4 judges each, and after all the judging is concluded, all the judges have to get together and settle on the award recipients, given what each individual judge has seen. This is the Judge Deliberation.

Judges come in three flavours:

- **Technical/Robot Design** judges study each team's robot, deciding how innovative, creative, clever and reliable it is. Technical judges need to have a general understanding of the robot rules, and should be technically minded enough to ask the right questions.
- **Project** judges see each team's project presentation. They judge teams on their presentation skills as well as the innovativeness of their proposed solution and the success of their research.
- **Core values** judges have arguably the hardest job; they have to talk to the teams and ask them questions to decide how well they exemplify the FLL Core values, such as teamwork.Core values judges also have to make the teams do a 'Core Values game' to see first hand how they work together and judge them on it.

It is **ABSOLUTELY CRITICAL (mandatory)** that judges are trained beforehand. The Judge Advisor should do this, but you (as the tournament director) need to make certain this gets done. If teams are not judged by people who know exactly what they should be doing, they get a sense of amateurishness from the event, and they won't be properly assessed and scored. This is bad for you and bad for the kids, and not fair to anyone. So train your judges!

Firefighter

This is a role which could be filled by other volunteers, as long as they can afford to be pulled away at any time. Essentially, the firefighter/s (who should be trusted people involved with the venue or tournament organisation) keep an eye out for anything that's going wrong - fires, if you will. They then have to make sure these problems go away. This could involve jumping in as a last-minute judge, quickly reorganising setups at the venue, running to the nearest set of shops, etc. Essentially, they have to make sure that anything that goes wrong is fixed quickly enough to not have a lasting impact on the event.