

The Minimum Requirements
(or, the least you need to know to start a team)

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I am writing this section of the New Coaches' Packet from the perspective of a relatively new FTC coach. I have been through two seasons with my FTC team now, and I hope that you find the following recommendations both helpful and encouraging!

The least you need to know to start your new FTC team:

1. You need a group of interested kids who are in grades seven through twelve. The lower age limit is somewhat flexible, but a student cannot be over the age of 18 to participate in FTC. Teams can range in size from three on up to over 30, with most teams having around six to ten members.
2. You need a place to meet. Our team (a private team) met in my basement. School teams usually meet in a classroom at their school. It's also best to set a regular meeting time...usually twice a week for a few hours each time.
3. You will need at least one coach (or mentor). You don't have to be an engineer to be an FTC coach or mentor! Anyone can do this! I'm not an engineer, and there have been lots of ways I have been able to guide and teach my team. If you aren't an engineer, see if you can help your team to connect with engineers in your community. It's not hard to do; you will be amazed at how many people are willing to help you.
4. You need an FTC "starter" kit. You have to have this. It comes with lots of the things you will need to start building your robot. (The kit is covered in more detail in a separate part of this packet.)
5. You'll need a computer. It's best to have a laptop so you can bring it to events. It doesn't have to be super-fast or fancy; it just needs to be enough to run the programming software (either RobotC or LabVIEW). We had a fairly slow computer our first season for our team computer and it did the job just fine.
6. You will need an engineering notebook! This is essentially a log of all of the work your team has done together throughout the season. Guidelines for the notebook are in part I of the game manual. There is a blank notebook including in the starter kit. Some teams do their notebook on the computer, and that's fine, too. Just be sure to decide early on whether your notebook will be paper or electronic (you'll still have to print it out for judging) and stick with it for the duration of the season.

7. Access to field elements and a playing field is extremely helpful. In order to build your robot to compete in this year's challenge, you will want to have access to whatever it is the robot will have to manipulate. For example, we had to handle rings for the 2012-2013 Ring It Up challenge. We ordered our rings right away from Andy Mark, the manufacturer of FTC fields and field elements. Our team members needed the rings to know how big to make their ring grabber, to see how heavy the rings were, and so forth. We are now going into our third year as a team, but we still don't have our very own playing field. We set up a partial field in our garage which was enough to do the job. We found other teams in the area who were gracious enough to let us practice on their full field, and that worked out really well. You can do this, too.

8. Access to tools is also helpful. Recommended tools are listed later in this manual. We did our entire first season with little more than wrenches and a handheld drill. You will branch out into bigger and better things as you gain experience.

9. Find a veteran coach that you can call or email for help and advice! This is really easy to do, as there is a list of these wonderful people later in this manual. It's also really helpful to visit veteran teams if you can...see if you can visit one of their meeting or build sessions! The advice and encouragement of the veteran coaches I contacted in my first year coaching (and still now!) have made all the difference for me and my team.

The least you need to know when you go to your very first qualifier – what you need, and what to expect:

So it's official...you've registered for your very first local qualifier, and the date is on your team calendar! Here's what you need to bring with you on the day of your event, as well as some of what you can expect:

THINGS TO BRING TO YOUR QUALIFYING TOURNAMENT

- Your team consent forms. Each student and mentor will need a signed consent form from US FIRST. You can also do this online this year...if you do it online, you don't need to bring your forms to the event.
- Your team's engineering notebook. This will need to be turned in by the coach when you check your team in. Be sure to bring a notebook...no matter how complete or incomplete it may be!! Submitting a notebook of any sort is a requirement for most of the judged awards, and you don't want your team to miss out on that opportunity!

- Are you submitting a video or a software award? These usually need to be turned in at check-in as well. You will be notified of these requirements after you have registered for a qualifier.
- You will need your robot! It's okay if your robot doesn't even run! Bring it anyway! It's awesome just to be at your first qualifier. Other teams will help you out if you need it. If you do have a running robot, it is wise to bring whatever extra parts and motors you may have along with you. Things do tend to break at events.
- Bring safety glasses for yourself and your team members! The venue will not provide safety glasses to teams! It is also wise to have safety glasses available for family members and other visitors to your pit.
- Do you have a team look? Do you have team t-shirts? While not required, it is really cool to have a theme for your team. Lots of teams have banners and photo displays to place on the table in their pit. You don't have to do this, but it is a lot of fun.

WHAT TO EXPECT AT YOUR FIRST QUALIFYING TOURNAMENT

Be sure to arrive on time with your whole team the morning of your event. Check-in usually starts at 7:30 and runs until 8 am. Once you have checked in, you can head to your pit. The pit consists of an approximately 8-foot table, usually accompanied by a power supply. You will receive a coach info packet a week or two before your event which will go over all the details of your particular venue. It will include guidelines for what food will be available, directions to the event and so forth.

You will be assigned a time slot for judging. Be sure that all your team members are ready and queued up outside the judging room a few minutes before their assigned time. The robot is brought along to judging. Judging lasts about 20 minutes. It's a good idea to have your team members ready to present themselves, their robot and their team experiences to the judges. This is such a great opportunity to work on presentation and public speaking skills! Some teams have a formal presentation ready to go, while some teams simply receive questions from the judges. Do what works best for you. We did not have any sort of presentation at our first qualifier. We did have a presentation ready for our second qualifier, and we feel it made a big difference. Basically, if you have the time, prepare your team to present themselves. One important note on judging: while mentors are welcome to join the team in the judging room, it's very important that only the team members talk and answer questions!

The robot part of the competition usually doesn't start until around just before noon. If you have friends or family who want to come see your team in action, it's best to have them to arrive after 11am or so. Also be aware that many qualifiers are limiting the number of team members, mentors and visitors who can be in the pit at a given time due to space limitations. This varies from event to event. This is more important to keep in mind if you have a larger team.

One thing I remember from our first qualifier is how quickly matches can go. You can expect to have about six qualifying matches with your robot at most events. It's surprising how little time there can sometimes be between matches...you may just have gotten back to your pit from match #1 and it's already time to queue up for match #2! Be ready for that. Also, make sure you queue up when you are supposed to...be on time. You don't want to miss a match! Make sure the queuing volunteers can find your team! If possible, it's always a good idea to have at least one student or mentor "staffing" your pit. Each match requires two drivers and coach. The coach can be a student or an adult mentor. All three need to be present before a match can begin!

Always be respectful to the judges, referees and event volunteers. Never argue with the refs! These people are here to serve you and to help your team learn and grow. They are passionate, wonderful people without whom we wouldn't have these events.

The most important thing for your very first qualifier is to HAVE FUN! Don't worry too much about winning anything the first time around, either with the robot or in judging. That's not to say you shouldn't expect to win something...many rookie teams have qualified for the next level of competition (State Championship) at their first or second qualifier. Remember, your robot doesn't even have to be working! Take this opportunity to get a feel for what an FTC tournament is like, and take time to talk with other teams, mentors and coaches. It's an incredible opportunity to network, learn and get ideas for next time!