



FIRST[®] Robotics Competition Mentor Guide

FIRST[®] is a global robotics community that prepares young people for the future.



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Overview of *FIRST*® Robotics Competition

Teams of students are challenged to design, build, and program industrial-size robots and compete for awards, while they also create a team identity, raise funds, hone teamwork skills, and advance respect and appreciation for STEM within the local community. Volunteer mentors lend their time and talents to guide each team. It's as close to real-world engineering as a student can get. Participants in *FIRST*® programs gain access to education and career discovery opportunities, connections to exclusive scholarships and employers, and a place in the *FIRST* community for life.

Please visit our [Vision and Mission webpage](#) for more information about *FIRST* and our core values.

Typical Season Calendar

This calendar is intended to help mentors know some of the major events that occur each season. View the [FIRST® Robotics Competition Calendar](#) online for exact deadlines each season.

Year-Round Activities:

To help ensure team sustainability, these are the things that teams should can on year-round rather than one specific month:

- Fundraising (see the [Budgets & Finances](#) section)
- Outreach

May – September

May – September is considered part of the off-season and some teams may choose to take a break while others may continue to meet. Check out the [Off-Season](#) section for more information.

- Create/Update your new/returning team (login to the [FIRST Dashboard](#) to get started)
- Fundraise and apply for grants (see the [Budgets & Finances](#) section)
- All team Mentors & Lead Coaches are required to obtain Youth Protection Clearance (see [Youth Protection Program \(YPP\) section](#))
- Connect with your [Program Delivery Partner](#) on off-season events or local training opportunities

September

September is when teams generally start meeting again (if they took a break) and begin preparing for the upcoming season. This is a great time to build new skills and engage with sponsors and the community.

- Recruit students and mentors (see the [Team Recruitment](#) section)
- Host Team Safety Meeting (see the [Youth Protection Program](#) section and [Safety](#) section)
- Select your Kit of Parts options (check out [this calendar reminder](#) for more information)
- First round of event selection (check out this [User Guide](#) for step-by-step instructions)
- Select which Kickoff you plan to attend (check out the [Kickoff webpage](#) for instructions)
- Team member skill development
- Review available grants (see the [Grants](#) section)

October

October is when season prep continues to pick up with many teams continuing to develop skills and beginning to focus on inventory and equipment.

- Select additional events
- Inventory tools and materials
- *FIRST* Impact Award, Woodie Flowers Award, and *FIRST* Leadership Award submissions open (see the [Submitted Awards webpage](#) for more details)

November

November is when teams start to finalize plans for the season (with numerous signup deadlines) and may begin working on awards submissions.

- Event Registration Closes
- Initial Event Payment Due (check out [this calendar reminder](#) for more information)
- Deadline to select which Kickoff your team plans to attend (check out the [Kickoff webpage](#) for instructions)
- Deadline to select how your team is receiving your Kit of Parts
- Pre-Kickoff Vouchers are available (check out the [Kit of Parts webpage](#) for more details)

December

December is when teams make final preparations for the season such as finalizing shop hours, plans to attend kickoff, and complete any pre-season equipment or material purchasing.

- Some teams host a mock Kickoff to help prepare the team before the season begins.
 - see the [Kickoff Section](#) on the website for some resources & [FIRST Robotics Competition Guided Experience Module 6 - Lesson 3](#) which has more information on holding a mock Kickoff.

January

January not only starts the year, but it also kicks off the *FIRST* Robotics Competition season with the release of the game and the start of Build Season.

- Kickoff (see the [Kickoff](#) section)
- Replacement Parts (check out the [Kit of Parts webpage](#) for more details)
- Additional Kickoff Vouchers available (check out the [Kit of Parts webpage](#) for more details)
- Game Q&A Opens
- *FIRST* Choice Opens (check out the [Kit of Parts webpage](#) for more details)
- Build Season Begins (See the [How to approach Build Season](#) section)
- Additional Event Payment Deadline

February

February is a continuation of the build season and there are some award submission deadlines as well.

- *FIRST* Impact Award, Woodie Flowers Award, and *FIRST* Leadership Award submissions due (see the [Submitted Awards webpage](#) for more details)

March – April

March – April is when teams attend local District and/or Regional Events. The culmination of the season is the *FIRST* Championship which brings together tens of thousands of students, mentors, and volunteers of all ages for the ultimate celebration of science and technology.

- Prior to attending an event, hold a refresher on Team Safety (see the [Youth Protection Program](#) section and [Safety](#) section)
- District and Regional Events (check out the [Events](#) section)
- *FIRST* Championship (check out the [FIRST Championship](#) section)

Overview of Document

Mentoring is an integral part of *FIRST* and largely contributes to the program's success. Every adult on a team is a mentor, simply because they lead through guidance. It is important to remember students need guidance, structure, encouragement, and most of all, a fun experience! When done correctly, this learning process builds and expands team members' self-confidence and knowledge. If the process has a strong foundation and works properly, mentors come away with as much as students do.

This document will focus on information to help successfully run a *FIRST* Robotics Competition team and help ensure students have the best experience. Be sure to also check out the [Effective Mentoring](#) resource for tips and tricks on mentoring. We also encourage you to share both resources with other mentors on your team.

The Lead Coach Role

Lead Coaches are adult volunteers (recommended 25+) that lead the day-to-day activities of the team. Each team must have two adults to act as Lead Coaches that are registered in the [FIRST Dashboard](#). Lead Coaches have the authority to make leadership decisions for the team and are the primary contacts for the team. Lead Coaches may not be high school students.

The role of the Lead Coach(s) varies by team. Some teams have one person who does the majority of the role, others may have school administrators listed as the Lead Coaches, but the work is done by other mentors, and some teams even have multiple mentors who share the workload. How you divide up the work is completely up to your team, but these are the main responsibilities that must be fulfilled by one of the Lead Coaches:

- Act as the primary point of contact for the team
- Register the team for the season
- Preference events for the team to attend (see the [Event Preferencing webpage](#))
- [Kit & Kickoffs](#): Sign up to attend a Kickoff Event or indicate how you will receive your kit
- Keep all contact information up to date on the Dashboard. Provide accurate email address, mailing address, and phone number to allow timely communication with *FIRST*, especially for use during school vacations and team travel.
- Manage team roster via the [FIRST Dashboard](#); invite youth & other mentors, ensure they register and complete Consent & Release forms
 - This action is only available after both Lead Coaches have been screened for those in US/Canada.
- Read [team email blasts](#)
 - Both Lead Coach 1 and 2 are automatically signed up for email blasts, other mentors can subscribe by [signing up here](#).
- Assign designated question asker for the Q&A Forum
- [Kit of Parts](#):
 - Enter team Kit of Parts options selections in the [FIRST Dashboard](#)
 - Inventory the Kit of Parts to ensure items are not missing. Submit missing parts request by the posted deadline.
 - Utilize the Virtual Kit of Parts voucher/password codes located in the Dashboard and other Kit of Parts elements
- Maintaining a safe and welcoming team environment

Responsibilities that may be delegated or may be handled by the Lead Coaches include, but are not limited to:

- Delegate team tasks
- Organize team meetings
- Assign team roles
- Monitor the [FIRST Robotics Competition Calendar](#)
- Ensure team meets deadlines for events and award submissions
- Read [blog posts](#)
 - Blogs are typically linked in the team blasts, but mentors can also [subscribe to them](#).
- Follow information related to the Game and Season, including [Team Updates](#)

We recommend Lead Coaches complete our [Role of a Lead Coach](#) training. This training is designed for current and prospective Lead Coaches. It provides an overview of the Lead Coach role and responsibilities, along with recommendations and resources to help guide your team through a smooth and successful season. This training contains about 60 - 90 minutes of content. You can find this training (and more!) on our [FIRST Training](#) website.

Youth Protection Program (YPP)

Part of your role as a mentor is to help create and maintain safe and welcoming environments for youth participants. *FIRST* strives to create an environment in which team members can grow, learn, and have fun with minimal risk of harm.

FIRST strongly recommends that no Lead Coach, mentor or other adult be the only adult present with one or more youth participants, unless the interaction occurs in a regular classroom setting and in conformity with school policy.

If an adult is temporarily alone with a youth participant, the interaction should be observable and interruptible. Having at least two adults present when youth participants are involved in *FIRST* activities helps ensure that assistance is available in the event of an emergency and may provide clarity in assessing and reporting safety concerns or questionable incidents.

New this year! All Team Mentors are required to obtain Youth Protection Program (YPP) Clearance. YPP Clearance includes completion of applicable YPP screening requirements, annual *FIRST* YPP training, and acknowledgment of *FIRST* YPP policies. *FIRST* Youth Protection screening requirements apply to participants in applicable roles in the United States and Canada. *FIRST* expects Youth Protection standards to be applied internationally in accordance with applicable local laws and regulations. Required annual *FIRST* Youth Protection Training must be completed through the *FIRST* Dashboard as part of YPP Clearance. Teams can reference the [Youth Protection Program page](#) for current YPP requirements, resources, and [FAQs](#).

Lead Coaches are responsible for helping ensure their team mentors meet applicable *FIRST* Youth Protection requirements. YPP Clearance status for mentors will not affect Lead Coach system permissions. Lead Coaches can check YPP Clearance by following these steps:

1. Log in to the [FIRST Dashboard](#)
2. Click on the team you are trying to administer
3. Click the 'Team Roster' tab
4. Scroll to the 'Team Leadership' section, clicking to expand it if needed.
5. Viewing each mentor to see if they have green check marks to indicate they have completed the actions.

Figure 1: Example Mentor Card showing YPP Compliance

Kimberley [REDACTED] - Mentor	FULL LEGAL NAME [REDACTED]	EMAIL ADDRESS [REDACTED]@gmail.com	PHONE NUMBER [REDACTED]	Options
☒ Consent & Release is on record				☒ Include In Team Roster Printout
☒ Meets Youth Protection Policy Requirements				☒ FIRST Leadership Award Submitter
☒ Training Status: Meets Training Requirements				

Figure 2: Example Mentor Card showing items not completed for YPP Compliance

Casey [REDACTED] - Mentor	FULL LEGAL NAME [REDACTED]	EMAIL ADDRESS [REDACTED]@gmail.com	PHONE NUMBER [REDACTED]	Options
☐ Consent & Release not on record				☒ Include In Team Roster Printout
☐ This person has not yet agreed to the Youth Protection Policy for the current season				☐ FIRST Leadership Award Submitter
☒ Training Status: Meets Training Requirements				

Lead Coaches can also send reminders to Mentors to have them complete their Youth Protection Clearance and Consent & Release Form by taking the following steps:

1. Log in to the [FIRST Dashboard](#)
2. Click on the Team you are trying to administer
3. Click the Team Roster tab
4. Scroll to the Team Leadership section, clicking to expand it if needed.
5. Click options in the upper right-hand corner of contact role card
6. Select "Request Screening." The mentor will receive an email invitation to go directly to the screening vendor.

Figure 3: Example Mentor Card Showing the "Request Screening" Button

The [FIRST Youth Protection Program](#) establishes standards and expectations for interactions between adults and youth participants. Adults working in *FIRST* programs must be knowledgeable of and adhere to the standards set by the *FIRST* YPP, as well as applicable requirements established by the school or organization hosting their team. As a Lead Coach, you must understand these requirements and help ensure that adults working with the team understand and follow applicable Youth Protection requirements. *FIRST* Youth Protection Training provides adults working with *FIRST* teams the information and guidance to help recognize potential Youth Protection concerns, maintain appropriate boundaries, and understand how to respond to and report concerns.

All *FIRST* participants and volunteers of any age may report Youth Protection Concerns or Medical Incidents to *FIRST* using the [FIRST Reporting Portal](#), or by emailing safety@firstinspires.org.

In addition to reporting concerns to *FIRST*, individuals must follow applicable mandatory reporting laws. In the United States and Canada there are laws that require individuals working with youth to report known or suspected child abuse and neglect. You can find a complete list for the USA and other contact information on the Child Welfare Gateway website [State Child Abuse and Neglect Reporting Numbers](#). The contact information for reporting suspected child maltreatment in Canada, you can find it on the Canadian Child Welfare Research Portal under the Provincial And Territorial Assistance page.

STEM for Everyone™

Part of your role as a mentor is to be an example and to welcome and include all team members. *FIRST* is committed to fostering, cultivating, and preserving a culture of unity. We embrace and celebrate our global community. Exploring, developing and implementing strategies to ensure opportunities for any young person who engages in our programs is critical for *FIRST* to fulfill its mission. ALL young people should have the opportunity to become science and technology leaders who have the skills, confidence and resilience to build a better world.

FIRST teams should be mindful, include all team members, and practice *Gracious Professionalism*®. The *FIRST* Core Value of Inclusion encourages *FIRST* participants to respect each other and embrace our differences. For additional resources visit the [STEM for Everyone™ webpage](#) to find other resources for increasing your knowledge and practice on creating welcoming environments for all.

Safety

Instilling a culture of safety is a value that every individual in the *FIRST* community must embrace as we pursue the mission and vision of *FIRST*. Safety is a vital part of the *FIRST* culture, having established the

framework for safety leadership in all aspects of the programs. Teams should use the [FIRST Safety Manual](#) to understand and implement safe practices.

Team Connectivity

If your team needs help, we recommend connecting with local teams to share expertise and resources! Teams can share if they need help (and in which areas) as well as if they are willing to provide help to other teams utilizing the team profile section in the *FIRST* dashboard. Teams can also provide a public-facing email address on the [Team Search Page](#) allowing mentors, sponsors, and additional supporters to easily find and connect with your team. This email can be added to the team profile in the [FIRST Dashboard](#). To learn more, check out [this article](#).

Team Roles

This section covers the team mentor roles within the [FIRST Dashboard](#). For a high-level overview of these roles, check out the [FIRST Team Roles](#) sheet. See below for more details specific to *FIRST* Robotics Competition and see how teams may consider breaking up the responsibilities for those roles:

Mentor:

A mentor is an individual (18+, not in high school) with technical or non-technical knowledge that teach and assist a team and are an important part of any *FIRST* Robotics Competition team. There is no limit to the number of registered mentors on a team. All team mentors are required to obtain Youth Protection Clearance.

The mission of *FIRST* is to inspire young people to be science and technology leaders and innovators, by engaging them in exciting mentor-based programs that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership. Additionally, *FIRST* Robotics Competition is founded on the idea that students and mentors work hand in hand on their team. We talk a little bit more about [the role of mentors in this blog](#).

FIRST Robotics Competition is a program where youth work both with each other and with adult mentors who help them learn new skills and grow as individuals. Mentors often contribute to areas related to their special skills. Examples include:

- **Logistics** – may help with arranging team meals, travel, robot transportation, event planning, ordering items, etc.
- **Finance/Fundraising** – may help with applying for grants, creating sponsor packets, connecting with potential sponsors, creating/maintaining a budget, etc.
- **Marketing** – may help with managing social media, creating team swag, may help with reviewing award submissions, materials for judges, and raising awareness of events, etc.
- **Machining** – may help with shop safety, managing raw stock inventory, fabrication of parts, etc.
- **Mechanical Design** – may help with prototyping, CADing robot parts, identifying components to order, etc.
- **Electrical** – may help with verifying appropriate wire sizes, wiring the robot, troubleshooting electrical issues, recommending sensors to use, etc.
- **Software** – may help with reviewing and debugging code, identified needed sensor capabilities, website management, etc.
- **Strategy** – may help lead game breakdown and robot requirement identification, review Game Manual information including [Team Updates](#), developing a scouting plan, developing match and alliance plans at events, etc.

Mentor Training Resources:

Mentors can review several of the resources linked within this guide for some additional best practices on *FIRST* Robotics Competition. In addition, there are several trainings available specifically for mentors through [FIRST Training](#) and we are actively developing more trainings. Here are a few that we think are most applicable to mentors and have tips and tricks for being a mentor:

- [Mentor Ready Training Path](#) - This introductory training is intended to create an aligned onboarding experience for all mentors, ensuring they feel prepared, meet safety requirements, and are ready to lead and inspire their teams. This path consists of four training sessions: Welcome to *FIRST*, Youth Protection Training, Data Privacy for Mentors, and Role of a Mentor.
- [Role of a Mentor](#) - This training is designed for coaches, mentors, and any adults involved in *FIRST* programs to learn more about the types of mentors, their responsibilities and impact, how they will use the *FIRST* Dashboard, and resources for mentors and teams.
- [Role of a Lead Coach](#) - This training is designed for current and prospective Lead Coaches in *FIRST* programs. It provides an overview of the Lead Coach role and responsibilities, along with recommendations and resources to help guide your team through a smooth and successful season.
- [Navigating Team Conflicts](#) - This training is designed for all current and prospective mentors involved with *FIRST* teams to learn tips and resources to help with consensus building and conflict resolution, in which conflicts or disputes are brought to a peaceful conclusion.
- [Working with Youth](#) - This training is designed for anyone interested in learning about youth development as well as learning resources for working with students across any of the *FIRST* programs.

Team Volunteer:

Team Volunteer is an optional role for an individual (18+) who regularly volunteers with and support the team, but they are not a mentor or one of the Lead Coaches. Team Volunteers are required to obtain Youth Protection Clearance. Team Volunteers may help chaperone and/or support the team in another way.

Youth Mentor:

Youth Mentor is an optional role for an individual (ages of 13-17 years old) who could be a veteran team member from any *FIRST* program, serving as youth mentor to a team with younger participants. Youth Mentors may not fill any roles that must be held by Students (e.g. *FIRST* Leadership Award nominee, *FIRST* Impact Award Presenter, Driver, etc.). If you are a student on a team, you cannot also serve as a Youth Mentor on that same team.

Team Administrator:

Team Administrator is an optional role for an individual (18+, not in high school) who does not collaborate directly with the team but can create a team, have access to financial information to procure resources for the team, can add/remove Leads Coach 1/2 (no other rostered roles), and manage the team roster. A finance contact may be best qualified for this role to facilitate registration payment and meeting payment deadlines.

Notes:

- A Lead Coach 1 can do all functions of a Team Administrator role and does not need to also be assigned to this role in addition to being a Lead Coach 1.
- Team Administrators who plan to manage the youth roster are required to obtain Youth Protection Clearance in order to have access to the student roster.

Examples of roles this person may help with:

- Submit the team registration payment for the season via the Dashboard. Pricing and payment information can be found on the [Cost & Registration webpage](#).
- Upload Sales Tax Exempt Certificate, if applicable.
- Complete [regrants](#) and submit W-9 information.
- Dashboard: Assist in maintenance and updates of Team Information.
- Monitor the [FIRST Robotics Competition Calendar](#) for payment deadlines.
- Manage the youth roster and invite parents/guardians

Team Recruitment

Exploring, developing, and implementing strategies to ensure opportunities for any young person who engages in our programs is critical for *FIRST* to fulfill its mission. All young people should have the opportunity to become science and technology leaders who have the skills, confidence, and resilience to build a better world. Lead Coaches and Mentors serve an important role in creating these opportunities.

Finding Team Members

When recruiting students for a team, it is important to understand the population of the school or local community and focus recruiting efforts on attracting a broad range of students. Make sure recruiting efforts reach a cross-section of the school or community by targeting the entire school and welcoming individuals with different skills and experience. Include and encourage a wide range of individuals to help with recruiting. Students are more likely to be interested in participating if they see and hear from their peers.

Suggestions for Recruiting Students:

- Use [FIRST videos](#).
- Hang posters in the school, at the local library, in businesses, and in sponsor organizations.
 - Check out the Recruitment Section of the [Team Management webpage](#) for flyer templates.
- Include promotional materials in school newsletters or on school web sites.
- Hold a student assembly where there is a *FIRST* Robotics Competition video and demo.
- Have a local or previous year's team put on a demonstration at a school or community event.
- Give an overview of *FIRST* Robotics Competition in a series of classes where a variety of students are enrolled.
- Engage adults from local corporations, university students, and *FIRST* Alumni to speak about the value of participation.
- Enlist *FIRST* Alumni and participants on other *FIRST* teams to spread the word.
- Utilize [FIRST stories](#)

Check out the [Team Recruitment Best Practices](#) for some more tips on student recruitment, retention, and engagement!

Youth Registration

All youth team members are required to complete the online youth registration to participate in *FIRST* team meetings, events, or competitions. Learn more about the [youth registration system](#) and how to get started. If you have a student or parent who cannot complete youth registration electronically, please reach out to your [local Program Delivery Partner](#) to request an exception and obtain a hard copy of the Consent and Release Form.

For assistance in completing the youth registration please direct parents and guardians to the [FIRST Help Center](#) for self-service support articles. For additional help, they can contact Team Support by phone at 1-800-871-8326, [via email](#), or through the chat feature on www.firstinspires.org.

Recruiting Mentors

Anyone can be a *FIRST* Robotics Competition mentor. Time and interest are the only requirements. Having a diverse pool of mentors only benefits the team; some mentors bring business expertise, some technical expertise, and some are great at marketing. A *FIRST* team can use all these skills. Lots of adults may want to help but may be unable to commit to every meeting, so understanding the strengths and weaknesses of the mentors and the team's needs will help to identify the areas where additional support will be needed.

Check out the [Team Recruitment Best Practices](#) for some more tips on mentor recruitment, retention, and engagement!

Potential groups to ask to Mentor:

- School Employees
- Co-workers of an existing mentor
- *FIRST* Alum
- Parents
- Someone a parent knows
- Local Industry professionals
- Sponsors

Setting your team up for success

Building a robot is just one of the many elements involved in being a successful team. Teams require roles, time management and plans to ensure sustainability.

Develop Roles Within the Team

Develop roles so that team members feel as though they have a part in the process. Talk about skill sets, projects and subprojects, sub teams, enjoyment, time constraints, and rules set by the school or *FIRST*. Organizational charts, often with job descriptions, can be a helpful way for all teammates to understand their roles and responsibilities. Although every team's leadership structure is different, here is an example of an [organizational chart](#) that a team might use. Teams can use this [editable template](#) (automatically downloads) to alter the organizational chart to fit their needs.

Check out the [Team Organization Best Practices](#) or the [How To: Effective Leadership](#) resources.

Meeting Schedule

Each team should decide on a meeting schedule that works for them. Some teams may decide to meet both in-person and remotely depending on the tasks. Remote collaboration has its positives and negatives so teams should evaluate what works best for each task.

The number of meetings a team needs will vary depending on what the team is trying to accomplish. Many teams meet once or twice a week in the summer/fall but will meet more frequently during build season. Check out the [How to approach Build Season](#) section for help with planning your team's meeting schedule.

Tasks, Strategies, and Stress

Help team members clarify tasks and develop strategic plans for individual jobs. Defining a task list that includes complexity and showing their relationship to the timeline may make it easier for team members to plan and work together toward successful job completion. Remember, you are not just building a robot but also building a team. Fun tasks and team building activities should be incorporated.

Watch for signs of serious stress among team members. This may be a time to intervene and ask if they need help or suggest that they take a break. 17% of youth (6-17 years) experience a mental health disorder ([NAMI, 2020](#)) and it's important to ensure students (and mentors) can take a break. Mentors can refer to this [Mental Health resource](#) for tips and additional resources.

Suggested Tools

One of the most important things you need in order to build a robot is tools. This [Tool Recommendations](#) resource is intended to help teams that are newer to *FIRST* and includes a list of beginner tools as well as suggestions for more advanced tools and machinery that teams may want to acquire.

While the Rookie Kickoff Kit contains a computer that can run all of the software necessary to program and operate the robot, we recommend that teams have at least one additional computer for programming if possible. Teams may also wish to have additional machine(s) available to run CAD software or the tools used to support the team (e.g., photo or video editing software). Teams can reference this [Computer Requirements](#) resource for recommended computer hardware. Some software programs are made available to teams for free via the [Virtual Kit](#).

Trainings

A key component to keeping students engaged is offering training to help them feel engaged with the team and eventually take ownership over projects. *FIRST* has several training courses already available within [FIRST Training](#) and more are in development to help prepare our teams.

A great starting point for new members is to take the [FIRST Robotics Competition Guided Experience](#) modules. These modules are a fun, flexible training designed for Lead Coaches, mentors, and youth team members (13+) to build essential skills for a successful season. With 12 interactive modules, hands-on activities, and downloadable resources, teams can choose a full training path or mix-and-match lessons to fit their needs. Perfect for pre-season prep, build season support, and onboarding new members.

In addition to *FIRST* provided training, teams may choose to do additional specific training within their team. This can range from official training tracks with specific activities and goals to partnering up Rookie and Veteran students so the rookies have someone to learn from.

Ensuring Sustainability

Sustainability is key to ensure the program's longevity within a school/community and the impact the program has on students. Ensuring sustainability means that a team is focused on team retention for both students and mentors.

Sustainability starts with the culture of the team, to be welcoming to new members and a home for veteran members. The size of the team is unique to each individual team's situation and depends on funding, resources, and space. The size of the team may ebb and flow as seasons progress. Mentors should be aware of the graduating vs recruitment rate to ensure the team does not get too small or too big. Reference the [Team Recruitment section](#) for tips on how to recruit new students and/or mentors.

Lead Coaches are critical to guide the teams through the seasons, but teams should also be able to operate if that Lead Coach ever needs to step down or take a break. The team should have a plan in place to transition mentors as needed.

Check out these 2 additional training resources on Sustainability:

- [Creating Team Sustainability](#) – This training walks teams through guided lessons and a companion workbook to build the systems, leadership pipeline, and documentation a team needs to survive graduation, mentor turnover, and burnout.

- [School-Based Sustainability](#) - This training is a guided, workbook-driven experience that helps *FIRST* coaches and mentors translate their robotics program into language school administrators, boards, and industry partners already understand.

Budgets & Finances

Running a *FIRST* Robotics Competition team is like running a small business, so it's important to set a budget. Each team's budget will vary depending on what they are trying to accomplish and the resources in their area.

This [Fundraising Guide](#) is intended to be an introduction to fundraising for *FIRST* teams and covers the basics of why you should fundraise, how to prepare to fundraise, fundraising ideas, as well as information on sponsorships, grants, and record keeping. Develop a team mission statement and business plan (check out the Create a Business Plan section of the [Fundraising Guide](#) on page 7 for an overview and examples) and decide what your team goals are. These will help you develop a budget and determine fundraising targets. To see average costs, please see the [Example FIRST Robotics Competition Budget](#) and then use our [Budget Template](#) (file automatically downloads) to create your own budget.

Teams can also reference the [Fundraising Toolkit](#) or our [Fundraising 101](#) for ideas on fundraising and check out our [Sponsor Relations](#) guide for ideas on how to structure sponsorship opportunities.

Grants

FIRST has a variety of grants to help teams. To see what grants your team may qualify for, please visit our [Grant Opportunities page](#). This grants page is updated regularly, so check back often to see new team grant opportunities. In addition to *FIRST* grants, teams should consider checking for grants offered by companies in their area and/or checking with their [local Program Delivery Partner](#).

Awards

FIRST Robotics Competition celebrates the excitement of competition both on and off the field. Our awards celebrate the [FIRST Core Values](#), which makes us so much more than robots!

Most awards are judged at the event, where volunteers walk around in the pits to interview students about their team's accomplishments. Please see the [Awards page](#) for more information on awards, including award guidelines, descriptions, and resources.

There are a few awards that do require pre-submitted information in order to be eligible. Adult and [student Award Submitters](#) are designated by the Lead Coaches and are responsible for submitting nominations for awards, as per each award's guidelines. Please see the [Submitted Awards page](#) for more information.

Kit of Parts

Each season, *FIRST* Robotics Competition teams receive a Kit of Parts (KoP). The KoP is not designed to be a "bolt together" solution to play the game, but is a starting point, containing mostly donated components from Suppliers across multiple industries. The Kit of Parts System consists of three parts available to teams through a variety of sources:

- Kickoff Kit – A box of parts delivered to teams at the start of the season.
 - As part of the Kickoff Kit, a KitBot is available. The [KitBot](#) is designed to be able to play some aspects of the game, but not all. It's also designed so teams can build the KitBot and then further iterate on it to add additional features if they choose. Teams will still need basic power tools (drills, saws, etc.) in order to build this robot.
- *FIRST* Choice – Items available via an online menu in exchange for credits issued to all teams.

- Virtual Kit – products available directly from the Supplier either via download or custom order.

For more information about the Kit of Parts, including deadlines, check out the [Kit of Parts webpage](#).

Kickoff

Kickoff is the event that starts the *FIRST* Robotics Competition season and is when the new game is revealed! During the broadcast, teams will hear from special guests and the details of the season's game.

There are typically three ways teams can participate in Kickoff:

1. Whole team travels to a Kickoff event and leaves with Kickoff Kit.
 - a. Local areas may host Kickoff events to allow teams to come together to watch the broadcast and receive their Kickoff Kit. These events may also choose to host workshops to help teams. Local Kickoffs are typically publicized in September/October and teams should sign up to the event that works best for them.
2. Watch Kickoff in build space and an adult gets kit from the Kickoff event.
 - a. Teams may choose this option if they are close to a local Kickoff event and to allow the team to jump right into exploring the game after Kickoff.
3. Watch Kickoff and pay a fee to ship Kickoff Kit directly.
 - a. Teams may choose this option if there is not a local Kickoff near them. Kickoff Kits will ship only after the additional fees have been paid and will arrive after Kickoff.

Teams can reference the [Kickoff section](#) for instructions on how to sign up for a Kickoff event.

How to approach Build Season

Build season is the time teams work on designing, building, and programming their robot. It begins immediately after Kickoff and goes through the first event the team attends.

Here is one very high-level schedule for how to approach the Build Season. Many factors affect this schedule including years of experience, number of students/mentors, machining resources, actual time between kickoff and your first event, etc. You should feel free to modify this timeline to what works best for your team as there is no single right way to how a team should approach Build Season. It's up to your team to figure out what may work best for you. Teams that attend more than one event may continue to iterate and improve between events.

Table 10-1: [Build Season Timeline](#) (file automatically downloads)

ACTIVITY	Week							
	1	2	3	4	5	6	7	8+
Initial Strategy (~First 2-3 days)	■							
Mechanism Brainstorming + Choosing prototype concepts (~2 days)	■							
Prototyping		■	■	■				
Detailed Design		■	■	■				
Mechanism Fabrication			■	■	■			
Assembly (includes wiring)				■	■			
Initial Programming		■	■	■	■			
Test and Finalize Programming					■	■	■	
Practice/Testing						■	■	■
Iterating						■	■	■

Some resources you may find helpful to guide specific aspects of the robot design process include:

- [Kickoff Worksheet](#)
- [Design 101](#)
- [Prototyping 101](#)
- [Programming 101](#)

If your team attends multiple events, you may decide to make improvements to your robot between events. Using what you've learned from testing (i.e., your event) to iterate and make improvements is a crucial part of the engineering process!

Post-Event

One of the best ways to create and sustain team morale is to host a team debrief after an event. This debrief should be used to celebrate your team's successes and get feedback on what aspects you could improve. Use this as an opportunity to change the narrative if an event did not go as planned. This could include everything from the robot to logistics to interviews with judges. If your team is going to multiple events, the debrief may help your team decide what areas to improve prior to that event. Teams may choose to do one debrief after each event, or one at the end of the season but it's highly recommended to hold at least one debrief to let all members voice their opinions. Check out [FIRST Robotics Competition Guided Experience Module 12: End of Season Activities](#) for more information.

In addition, after each event a team attends, *FIRST* sends both students and mentors a survey to gather feedback. *FIRST* uses this information to help make future improvements so please be sure to fill out the survey!

Events

Going to an event is one of the highlights of being on a *FIRST* Robotics Competition team. All teams are expected to follow the [Event Rules](#) at all official *FIRST* events. Teams should make sure they are prepared for the event and can do so by reading the [District and Regional webpage](#) for more information on how to prepare for events, what to expect including judging, scouting, robot inspection, what to bring to events, and more. Teams can even reference this [short video on What to Expect](#).

Some events may be day trips for your team whereas others may require an overnight trip. Check out the [How To: Arrange Team and Robot Transportation](#) guide for tips on organizing travel to events.

FIRST Championship

FIRST Championship is the culmination of the season's *FIRST* programs, bringing together tens of thousands of students, mentors, and volunteers of all ages for the ultimate celebration of science and technology. Teams from around the world earn spots at *FIRST* Championship by participating in District or Regional Events. For more information check out the [FIRST Championship website](#).

The [FIRST Robotics Competition Championship Information webpage](#) has additional information specific to the *FIRST* Robotics Competition program, including floor plans, the public schedule, and more! This webpage will continue to be updated closer to the event with division assignments, pit assignments, and more as information is finalized.

Off-Season

Some teams may take a break during the summer and/or fall whereas some teams choose to meet year-round. If your team decides to meet year-round, here are some ideas for your team to focus on:

- New student recruitment

- Fundraising for the next season
- Training – this could be machining, CAD, wiring, presentation skills, etc.
- Outreach to your local community
- Organizing Build Space
- Adding/Maintaining Team Resources
- [Off-Season Events](#) – Off-season Events are unofficial gatherings that utilize *FIRST* program content for which there is a participation fee or sponsorship funding. Many local teams or local Program Delivery Organizations may choose to hold Off-Season Events.
- And more!

Resources

This guide is intended to be a starting point for mentors. Mentors should also consider looking at the following resources:

- [FIRST Robotics Competition Email Blasts](#) – Archive of team email blasts.
- [FIRST Robotics Competition Blog](#) – Blog posts from staff and guests on changes, updates, and reminders.
 - o [Subscribe](#) to the blog to get emails when a blog is posted!
- [Season Materials Webpage](#) – A link of resources related to each season’s game including the manual, team updates, and more.
- [Team Management Resources](#) – A collection of resources to help teams with some of the aspects of running a team such as organizing your team, fundraising, and more.
- [Technical Resources](#) – A collection of both mechanical and software/electrical resources to aid teams.
- [WPI Lib](#) – Control System and Programming documentation to help with wiring and programming your robot.
- [FIRST Robotics Competition Awards Page](#) – A page that shows all of the current *FIRST* Robotics Competition Awards, award deadlines, and links to the guidelines for the awards.
- [FIRST Training](#) – *FIRST* Training serves as a central hub to provide training for coaches, mentors, students (age 13+), and event volunteers, helping us deliver consistent, accessible, and engaging learning experiences across the *FIRST* community. You can learn more about specific *FIRST* Robotics Competition Trainings by filtering within *FIRST* Training or seeing the list on the Training Section on the [Team Management webpage](#). *FIRST* Training can also be accessed via the [FIRST Dashboard](#).
- [Find Local Support](#) – A page to find your local Program Deliver Organizations that partner with *FIRST* in each community that include Program Delivery Partners (PDPs) and *FIRST* Senior Mentors.
- **FIRST Robotics Competition Social Media:**
 - o [FIRST Robotics Competition YouTube](#), and
 - o [FIRST Robotics Competition Facebook](#)

Teams can contact [Team Support](#) for any additional questions.