# How To: Organize a Team

This resource serves as a best practices guide for both new and established teams on how to organize a *FIRST*® Robotics Competition team. Using this five step model, your team will be able to create an organizational chart, divide students into teams, elect leadership, create team standards and establish internal communication.

**Phase 1: Teams and Subteams**

Teams can typically be broken into two major groups; Robot and Team/Logistics. The robot team works on all aspects of the robot while the logistics side focuses on everything else. These two major groups can be further divided into subgroups, depending on the needs of your team. These titles for subteams and teams are just one example, and it is up to what the team wants to do going forward. For example, the logistics team can also be called the team side or non technical team.

Robot Side:

- Design - The Design subteam is in charge of designing the robot based on the prototypes and decisions that the team agrees upon. Using that design, they will create computer or hand sketches for the Mechanical team to use during fabrication. For *FIRST* Robotics Competition teams who use 3D printing or computer aided manufacturing on their robot, this work may fall under this subteam.

- Mechanical - The Mechanical subteam is responsible for the manufacturing and assembly of the robot. During the design phase, they will prototype different end effectors and mechanisms that the team may potentially use. After the design is finalized and drawings are made, this team will manufacture and assemble the parts necessary for the robot.

- Electrical - The Electrical subteam is the bridge between the mechanical and programming elements of the robot. They're in charge of creating and managing the electrical board, as well as locating the board in a safe but easy to access area of the robot.

- Programming - The Programming subteam is crucial for creating a functional robot, that not only works, but runs at maximum capacity. This team is responsible for creating the programming logic between the operator's controls and the robot's sensors and motors. They will program any autonomous routines and any other automated functions that are used.

Logistics Side:

- Business/Communication - The Business/Communications subteam covers several different topics and can be split into further subteams, as required for larger *FIRST* Robotics Competition teams. Some of the topics that would fall under this team's responsibility are the team's website, newsletters, social media management, and award submissions. Any other work requiring communication, composition, and writing/editing/revising not covered above would also fall under this team.

- Audio/Visual - The AV subteam is responsible for photography and videography such as: visual documentation, graphic design, video production, and photo/video editing. The majority of this team's time is spent documenting competitions/events, creating the Chairman's video, and editing photos for use on the team's social media.

- Outreach - The Outreach subteam is responsible for expanding a team's work beyond their own team. This group will create and participate in events, with an overall goal to spread awareness of *FIRST* and STEM. Whether it's helping another *FIRST* team or spreading the benefits of STEM in a community, there are no limits to what can be done.

- Strategy - The Strategy subteam is responsible for gathering and analyzing data from all of the matches in order to effectively select alliance partners during Playoffs. During the build season, this team uses the game manual and mock matches to develop an initial strategy for the robot. In competition season, this team will develop the overall team's strategy. Members will communicate directly with the drive team in order to create customized strategies for each match.

A team does not need to have all of these subteams, two or more can be combined to form another subteam. This all depends on the size of your team and how much structure your leadership can support.

## Phase 2: Team Selection

Sorting students into sub teams can be one of the more challenging aspects to organizing a team. It's common on *FIRST* Robotics Competition teams to have students flock to one or two subteams, while another subteam may only have one or two students. A way to resolve this imbalance is to have students submit an application to the mentors or student leadership of their top three subteam choices. This ensures that all students are fully engaged and that there are enough students to work on all aspects of the challenge.

## Phase 3: Leadership

It is common practice to elect one or two students as the team captains. These students are responsible to supervise all aspects of the team and to relay messages to the advisor/head

mentor. Typically, students will apply for the team captain position with a short questionnaire, written essay, or interview. Based on these documents, the best students for the position can be elected by the mentors, a board of parents, etc. Selecting students for these positions should be based on merit and experience and not to be a popularity competition.

Below the team captains are the robot and logistics managers. These managers focus on the larger picture of their respective team and coordinate with the subteam captains. This allows the subteam captains to focus on specialized tasks within their group. The robot and logistics managers, as well as the subteam captains, can all be elected in a similar process to the team captains. Once again this is one example of how a team can set up leadership. Just like in business, there is no one perfect model for running a company. Set up what works for your team.  For more information please check out the resource Effective Leadership Practices (add link).

### Phase 4: Guidelines and Rules

Once your team structure has been formed, the next step is to set up guidelines for the team to follow. These guidelines can be in the form of a team handbook, a team contract, or both. Creating these documents will allow the mentors and student leaders to set up a team culture, rules, and expectations for the members of the team. The topics covered in these handbooks are not limited to codes of conduct, team travel policies, participation requirements, meeting schedules, and overall team culture. Follow the links below for examples of a team handbook and a team contract.

Team Handbook: [Team Handbook](#)

Team Contract: [Team Contract](#)

### Phase 5: Team Communication

Long gone are the days of lengthy email chain threads that would circulate for an entire season. Instead, there are three new tools that have become the standard for communicating within a team; Discord, Slack, and Google Classroom. In its simplest form, these tools can be used to inform students and mentors of upcoming events and meetings. For more experienced teams, these tools become a platform used to share information, as well as ideas, during the season.

Disclaimer: Before creating a team account on any of these platforms, check with your school administration on their acceptable means and methods of communication. Furthermore, any communication between students and mentors should follow the *FIRST* Youth Protection Program guidelines, as well as any school policies, to ensure safe communication between students and mentors. These platforms should only be used to exchange information and discuss appropriate material regarding *FIRST* and any other team related activities.

## Discord

Discord is a proprietary freeware VoIP application. This tool has a chat/voice system used to talk with team members and share ideas faster than having to type everything. Setting up your team server you can open up text channels for your sub teams to discuss and share ideas. Roles can be assigned to organize members into their subteams and by other identifiers which the team feels is useful. These roles allow certain members to be notified when that role is tagged rather than the whole team, and allows for chats that are specific to a subteam or group of students. Discord add-on bots can also be used to increase the functionality of the platform.

## Slack

Slack is a cloud-based proprietary instant messaging platform. This platform uses channels to allow for different topics to be discussed. Slack is used in a professional setting with many add on features to enhance the users experience. Keeping your subteams on the same page can be done with slack having a different channel for each subteam that can be viewed by everyone on the team or just the select members in that subteam. Apps or plugins are one of the best features on slack and the list is endless from calendars to taskers to code plug in for your programming team. This will help keep everyone on task and up to date with notifications. Getting started with a free slack workspace is easy but there is a limit on the number of messages, file storage and integration with other apps but for a small price a month you could expand on your space required. Slack does offer a discount for non profit programs.

## Google Classroom

Google Classroom is an announcement based communication platform. Any teacher or approved students in the classroom can post information, create assignments, and easily share files with the entire team. One of the best advantages to Google Classroom is that it is built into the Google Suite, meaning that it is integrated with Google Drive, Google Calendar, and the other Google programs. This creates the basis for a simple and functional ecosystem.

## Final Statement:

Think of your team as a business when setting up roles and leadership. A strong organizational structure will lead your team to success and help reach your goals for the season. Lack thereof will lead to contradictions, confusion, workload overlap, lack of idea sharing, and slow decision making. Develop your team structure and put the proper processes and leadership in place up front. Every team is different and no organization structure is perfect; design the system that's ideal for your team.

**About The Compass Alliance**

The Compass Alliance was founded by 10 teams from around the world with the mission of helping *FIRST* Robotics Competition teams sustain and grow. A growing Resource Repository, and 24/7 Call Center give anyone of any skill level the tools to learn something new or learn more from anywhere in the world. Remote teams lacking mentors can sign up for a Tag Team to be their remote guide throughout the season, and Help Hubs pinpoint where to gain access to local services other *FIRST* teams offer. Hear For You provides the resources and tools to help teams and volunteers develop mental wellness on their teams and at events. You can learn more about The Compass Alliance, find quality assistance, and get involved at www.thecompassalliance.org

**About This Resource**

This resource was prepared by The Compass Alliance, with the support and overview of *FIRST*. If you have questions about this resource, please contact thecompassalliance@gmail.com or firstroboticscompetition@firstinspires.org.

**Revision History**

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