

Drive Coach Best Practices

Introduction

This guide was created by *FIRST*® Robotics Competition in collaboration with select Drive Coaches from our community. Thank you to the Drive Coaches that helped us with creating this guide!

This guide is intended to focus on how to be an exemplary Drive Coach, and the content is applicable to both student and adult Drive Coaches. This guide can also be used by other Drive Team members, or even other members of the team, to know what to expect from their Drive Coach. In this context, “exemplary” is based on how a Drive Coach interacts with others and is not focused on robot performance. We believe that Drive Coaches that model these behaviors are more successful at helping *FIRST* fulfill our mission of inspiring youth. We want all Drive Coaches to model these behaviors and believe that they can learn additional skills to focus on robot performance.

What is a Drive Coach?

Per the [Game Manual](#), a Drive Coach is defined as a guide or advisor and up to 1 member of the Drive Team may be an adult. *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. There are no plans to remove the ability for adults to serve as a Drive Coach as some of the greatest mentoring can happen in the tensest moments, including right before, during, and after a match.

Some teams have adult Drive Coaches; others rely on students—and both approaches can work. It is up to each team to decide if they want an adult or student in the role. What matters most is emotional maturity. It is important to consider the maturity of the Drive Coach and ensure the other members of the team respect the Drive Coach.

A good Drive Coach keeps morale high after losses and remains gracious in victory. Representing your team with integrity and empathy is just as important as strategic execution on the field. The Drive Team serves as the “face” of your team when interacting with volunteers, alliance partners, and opponents and the Drive Coach sets the tone. *Gracious professionalism*® is an absolute must at all times. Practicing *Gracious Professionalism* includes things like congratulating the opposing alliance after both wins and losses.

In traditional team sports, the whole team practices and then they all go out on the field to try for the win together. Whereas, in *FIRST* the whole team spends weeks and months preparing only to bundle up all those hopes and dreams and give them to 4 people to try and make them real. One way a Drive Coach can help diffuse this pressure is by adopting a “wins are on them, losses are on me” approach where they give credit to the Drive Team for successes and keep focus on themselves for failures, though this approach may not work for all individuals. No matter the approach, the Drive Coach serves as an important buffer between the Drive Team and the rest of the team. By ensuring that all feedback is filtered through them, a Drive Coach can help mitigate some of the pressure the rest of the team may place on the Drive Team and ensure that feedback is shared in an appropriate and constructive manner.

What makes a good Drive Coach?

The role of a Drive Coach can be expansive, and specific responsibilities may vary a bit from team to team. Regardless of specific responsibilities, a good Drive Coach:

1. Understands that it's about the Drive Team members – it's their moment, not the Drive Coach's
2. Understands that the reason we're all here is for the students
 - The goal is for students to learn and grow as humans, not to be the best drivers/operators/human players/technicians.
3. Has the ability to communicate in a way that inspires and explains, not discourages and dominates
4. Listens to others and is receptive to being inspired and taught new things
5. Has desire to learn and grow, always striving for improvement, no matter how marginal
6. Has technical knowledge of the game and gameplay
7. Establishes trust across all members of the Drive Team
8. Demonstrates role model behavior
 - Many competitors look up to Drive Coaches, so it is important to model good behavior at all times. Teams are always looking to emulate the actions of well performing teams, especially their Drive Coaches, so if you find your team is playing well at an event, it is even more important to consider how others may perceive your behavior.
9. Enforces ethical behavior with their Drive Team and alliance partners
 - If you ever hear a team suggest throwing a match or something equally unethical, it's important to be deliberate in stating "Hey, that strategy is not ethical, and something our team won't be involved in. Let's think about different ways that we can play this match." These sorts of statements make a big difference as many teams assume well performing teams are always in "win at all costs" mode.

Interacting with your team

Matches can be stressful for the students on your team as for many, this is the highest pressure situation they have ever been in. It's the Drive Coaches role to go into every match ready to help them succeed. The best way to do that is by creating a relationship and rapport with the Drive Team members before the event. We recommend trying these best practices:

- Consider choosing your Drive Team early to help build relationships and give them time to practice
 - Teams should also review the [Guide to Selecting Drive Team Members](#) and [Improving Driver Performance](#) resources for additional helpful information.
- A Drive Coach should get to know the Drive Team members.
 - Learn what stresses and calms each of them down (breathing exercises, make jokes, distract them, walk away from the stress for a minute, etc.)
 - Every Drive Team member is different, and the Drive Coach needs to spend the time getting to know each of them individually
 - The Drive Coach should also build a rapport with the students so they can safely give feedback on coaching and where the Drive Coach can improve
- The Drive Team is going to work together throughout the season, with some very long and stressful hours at competition. It's important to earn trust with each other by being open, honest, and direct. People are most successful when they're happy and having fun, so it's important to try and create a relaxed atmosphere where people can thrive.

Before the Event

Drive Coaches may work closely on robot design as it pertains to match-time decisions. A good example of this is providing suggestions on robot states or button mappings in collaboration with the rest of the Drive Team.

On most teams, the Drive Coach should be involved with driver practice. They may take on the role of coordinating driver practice or they may ask another mentor for help. This can include:

- scheduling,
- ensuring all team members (not just Drive Team) are aware of time and location,
- coordinating with practice field venue hosts (if applicable), and
- ensuring practice data is being captured for analysis.

Close collaboration with the strategy team during practice sessions is very important while everyone is learning about the robot's capabilities (both designed and discovered). Drive Coaches should also work closely with sub teams to make enhancements or alterations to improve the robot.

It is important to make sure that a Drive Coach and the Drive Team can learn to communicate clearly, concisely, and efficiently. There isn't always time for long explanations of what needs to happen or where the robot needs to go. Coming up with agreed upon quick language to describe things can be helpful or important to save time. Be careful not to assume everyone will have the same interpretation of certain language, especially in the heat of the moment. If there is a miscommunication during the match - make sure to discuss it afterwards. This can be a crucial step to ensuring you know how the Drive Team should call out certain things. It can also be important to understand what calls are helpful to ensure everyone is aware of what's going on. Are there things that one Drive Team member sees more because of their role that the other members need to know? Learn what callouts are important and valuable to make sure everyone has the info they need to succeed.

Before events, it's essential to have a conversation to prepare the Drive Team for the stress of the competition and make sure they know to let you know if they need anything.

Before/During a Match

The Drive Team responds to the emotions of the Drive Coach. It's important to be calm and confident, but not over-confident. Learn how to get the Drive Team relaxed and focused. Things to consider before a match include:

- Techniques such as tossing balls to each other to get focused and then breathing techniques to relax just before the match begins.
- Does everyone know the match strategy plan?
- Does everyone know their role in getting the equipment set up and where everything is going (player station, robot starting location, human player location, etc.)? Any confusion and panic in setting up for the match may carry over to the match itself.
- Is everyone focused on the moment? People have a tendency to think about the past and the future and ignore the now. It's easy for Drive Team members to fixate on what went wrong last match, or how you play the top ranked team in the next match or how "tough" your schedule is. A good Drive Coach helps keep those worries and concerns away from their head and maintain focus on this match, not the past or future.

It is crucial to make sure it is clear how certain decisions will be made mid-match. If one person makes a call, and another person disagrees - how is it resolved? There often isn't time to have a full

discussion in the middle of a match, so determining who owns what decisions can be an important part to success. If one Drive Team member thinks there is time to score 1 more game piece before end-game and another member thinks there is not, what happens? It can be important to know how quick decisions like this will be handled. A larger discussion can be had after the match to determine what each team member saw, and what the collective group thinks would be the right decision if that situation comes up again. Just like the robot, a Drive Team should always be iterating on their communication, strategies, and decision-making methods.

During the match, it's important not to micromanage every action that your team is doing. The best Drive Coaches trust their Drive Team to handle the "micro" while they focus on the "macro". Rather than yelling out every single action, focus on things like:

- collecting scoring elements in hard to see areas,
- locations of partners and opponents,
- the timer,
- penalties happening on the field, and
- the objectives in the match (e.g. have we done enough of X action for the RP yet?).

Avoiding micromanagement will help the Drive Team members feel empowered and confident.

After a Match

After a match, always take a moment to cool down and analyze how the match went.

- You may consider recording matches and watching them with your Drive Team to talk through how everything went and how you may be able to improve.
- Praise should outnumber criticism by a scale of approximately 3:1 - 10:1. You can't continually harp on mistakes and expect people to improve. *FIRST* is about inspiration, and the best way to inspire someone is to make them believe that they're capable. You don't do this by excessively criticizing, rather by providing meaningful words of encouragement. That being said, if you're over the top with praise that isn't genuine, you will get tuned out.
- Avoid the "blame game", especially after losses.
 - This is the fastest way to demoralize a Drive Team. While it's not productive to ignore mistakes, you need to recognize that everyone makes them and treat them as learning opportunities and not opportunities to scold someone. Always focus on how the team can improve and grow. It can be helpful to get everyone's perspective on issues that are encountered. Every member of the Drive Team may be seeing, hearing, or thinking something different during the match. Taking the time to get everyone's perspective can help ensure you can figure out how everyone can contribute to a better performance in the next match. After a disappointing match, you can still be direct without playing the blame game. For example: "Okay, that match was not ideal. Let's talk about what happened. What do you think went wrong? What are we unhappy with? What can we do differently next time? Is there something you think I can improve?" Ultimately, it's important to know each member of the Drive Team and learn how they want to receive feedback.

Interacting with other teams

Power Imbalances

When interacting with other teams, it's very important to be aware of any power imbalances that may exist. Many of these may be subconscious, the person affected may not even realize they are being deferential. Power imbalances can include things like:

- Age Imbalance
 - o Adult Drive Coaches will always have a power advantage over student Drive Team members in strategy discussions and matches. There is a natural tendency for students to defer to adults in these situations, even if they don't want to.
- Gender Dynamics
 - o No matter a person's gender, all people should be treated with respect and not given an advantage over any other person based on their gender.
- Size Dynamics
 - o This may sound silly, but it is hard to disagree with someone who is large. They can be intimidating
- Experience Imbalance
 - o A Drive Coach that is new to the role may not feel that they are "qualified" to share their opinion compared to someone that has been coaching for 10 years.
- Team Status
 - o At competitions the top ranked teams hold immense amounts of influence, especially when it comes to alliance selection. Teams often automatically defer to the top ranked teams because they're afraid of offending them in fear of being dropped or removed from a pick list.

As a Drive Coach, it is your responsibility to be aware of these power dynamics and actively counteract them and ensure you're creating opportunities for everyone else to be heard. For example, if you're the number one seed at an event, and you come into a strategy discussion with "Hey, this is what we want to do, are you good with this?" chances are the team is going to say "yes, for sure", even if they think it's a bad idea, or if it's against their best interests. It's more appropriate to start the discussion with "Okay, what would you like to do in this match?" and then work to find an effective and complementary strategy that fits what all teams on the alliance want.

Before a Match

Alliances will be more successful when every team feels heard and valued. Remember that every team may have different goals than your own team. Ask questions before offering suggestions—such as "How's your competition going?" or "Is there anything you haven't been able to showcase yet?" These questions make other teams feel heard and respected. Often, by simply listening, a team might reveal a hidden strength—like a strong drivetrain—that could become a strategic advantage. Rather than dictating strategy, aim to guide conversations in a way that helps teams come to their own conclusions.

This doesn't mean you can't use data, but as you approach conversations first try to understand what each team is interested in doing and then figure out how to leverage each team's strengths to get the best possible outcome. If possible, it's helpful to have a team of people helping you look at scenarios, strategies, and what ifs. There's always a strategy that can make every team feel valued; the key is to

be collaborative, positive, and open-minded. Remember, the goal is to inspire, and everyone should have a good time. Always follow up with genuine recognition: “You were the reason we won that match.” Making a strategy feel like a shared idea—and something they can take pride in—is far more effective than issuing instructions

Sometimes, it can be hard to align on a strategy. Here are some additional recommendations to try:

1. Ensure your perspective is clearly documented (a strategy board is a great tool for this). Sharing your motivation and reasoning behind your perspective may help build consensus.
2. If the conversation has wandered a bit, you can attempt to re-introduce your perspective, making sure to tie into the ideas that others have shared.
3. Make sure you are listening to the goals and motivations of the other team(s) and framing your strategy in terms of how it aligns with those goals.
4. If the other team(s) are still insistent, try to then find a middle ground between the two perspectives. Are there ways the two ideas can be blended together? Can a team be allowed to try something a certain number of times before falling back to an alternate plan?
5. If a middle ground is not possible, focus on creating a plan that allows the alliance to perform at its best with the resources and strategies available. Encourage students to recognize that sometimes flexibility is the most effective path forward for the team. This is also a good time to pause and ask whether your own team might be holding too firmly to its preferences, and if greater adaptability would benefit everyone.
 - There may be instances where teams wanted to prioritize showcasing a new mechanism—like a shooter—in hopes of improving their pick potential. It’s not often a broad strategy change but rather a team wants to do X, let them. It’s not worth having others leave frustrated or have a bad experience based on wanting them to only do X.
6. Consider having a follow-up conversation after the match with a Lead Coach on their team if needed.

In Playoffs, things can be a little different. While the goal of every Alliance should still be to build consensus, if there is still disagreement, it is typically considered courteous to defer to the Alliance Captain for the final call.

During a Match

During a match, the most important thing to do is to communicate. If your robot breaks, communicate. If you notice something going better than expected, communicate.

Be mindful that events are loud, a Drive Coach needs to be heard but never wants to come across as yelling. A Drive Coach may need to practice how to raise their voice to be heard while maintaining a tone that makes it clear they aren’t upset. If you need to talk to another team, consider moving closer to the other Drive Coach instead of shouting at them.

Always celebrate the job on the field with everyone but do any follow-up after with the Drive Coach.

After a Match

After a match, always take a moment to cool down and think through how everything went during the match. Consider your own actions and realize that everyone makes mistakes, but being able to recognize, apologize, learn and grow is so important.

If you are going to provide constructive criticism to another team, it is usually best to wait until robots are off the field, and they are back in their pits and have had time to reflect. Direct confrontation while

everyone is still hyped from the match generally will not go well. Remember that as a Drive Coach, it's not your job to give direct feedback to other Drive Team members. Always approach the Drive Coach and include another adult from their team if the Drive Coach is a student.

If you're a Drive Coach and you or your team has been treated badly by another team, please let someone know. You could speak directly to the Lead Coach of said team, or if you're not comfortable doing that, you can bring it to the attention of any of the leadership of the event (e.g. Local *FIRST* leadership, Head Referee, Volunteer Coordinator, FTA, LRI, etc.). If no one ever addresses the bad behavior, then there's no chance that the behavior will change. Folks in our program are generally good people trying to do the right thing and are quick to accept responsibility and issue apologies.

Interacting with volunteers

Everyone — volunteers included — are under stress during competitions, so it's important to be kind, upbeat, and remember that we're all here to have fun and inspire youth. A little enthusiasm and appreciation go a long way. Remember that they are volunteers, giving their time and money to be at the event, and want to provide a positive experience for students. Hearing positive feedback is an important part of the reward of volunteering, so make sure to give shoutouts to volunteers for everything, not just going above and beyond.

If you need to approach a volunteer and are frustrated, consider taking a second to pause before starting the conversation. Calmly ask for clarity when there are disagreements or misunderstandings. Know that everyone makes mistakes and sometimes a wrong call is made — volunteers are doing their best. Make sure you have realistic expectations for resolutions, sometimes a mistake can't be "fixed" (e.g. a call a Ref didn't see or queuer pressuring a team to get to their match) and the best that can be done is to come to an understanding of how to make it less likely to happen again.

If there is disagreement about a rule or policy, ask if you can pull it up and review it together. If you can't seem to reach a resolution with the volunteer, make sure you understand the escalation path for issues with different volunteer roles. Is this issue something that can be escalated to a key volunteer at the event (e.g. taking an issue with a Robot Inspector to the Lead Robot Inspector), or something where a key volunteer may want to consult a Global Volunteer or *FIRST* HQ? However, make sure you pursue escalation wisely; trying to escalate every little issue over the volunteers you are working with is unlikely to lead to a positive experience.

Similar to the above, if you believe your team has been treated badly by a volunteer, please let someone know. You can bring it to the attention of any of the leadership of the event (e.g. Local *FIRST* leadership, Head Referee, Volunteer Coordinator, FTA, LRI, etc.). It's important that the behavior is addressed so that it can be corrected for future interactions and the volunteer can improve.