



2022 *FIRST*[®] Robotics Competition

COVID Season Guidance

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

**FIRST
LEGO
LEAGUE**

**FIRST
TECH
CHALLENGE**

**FIRST
ROBOTICS
COMPETITION**

Introduction

Since 1992, *FIRST* has been a thriving robotics community that prepares children of all ages, all over the world, for the future. During these uncertain and challenging times, we are committed more than ever to delivering the life-changing experiences our programs offer to young people. We're doing our best, like all of you, to stay up to date on the rapidly evolving impacts of the pandemic while planning for the future. The goal is to provide every participating team a safe, valuable, and enjoyable experience, regardless of learning environment and uncertainties, this season.

This guide explores a variety of options for how your season and key components of the *FIRST* experience can be implemented in-person, remotely, or a combination of both. It provides suggestions and options, but it is intentionally not prescriptive; considerations for what is best for your local situation and your team's needs should be prioritized. **Organizational and local health and safety regulations and guidance should precede any of the recommendations in this guide. Be sure to read the [Safety Manual](#) for additional guidance.**

Section 1 - Student Collaboration

In Person

Some teams may be allowed in their classrooms/shops with minimal changes from prior to the pandemic whereas others may be required to social distance in their classrooms/shops for team gatherings. Consider these details when creating a plan that works for your local scenario:

- Who needs to attend the meeting?
- Can a large team be divided into smaller groups based on tasks to complete?
- How can you use remote tools (when possible) to facilitate meetings and collaboration?
- What are your organizational and local social distancing requirements? Is there other guidance that needs to be considered too?
- Does your team have specific needs, like accommodations for at-risk individuals, that need to be met?
- What documentation of this plan will you create and share with all stakeholders? See the [Safety Manual](#) for more help.
- With whom will this plan be shared?
- How long should each meeting be? (consider that things may take longer with safety measures like social distancing)

Remote Collaboration

Some teams may choose to do a hybrid approach where some meetings are remote, and some are in-person whereas others may still be required to meet remotely. Remote collaboration has its positives and negatives so teams should evaluate what works best for each task. Teams can see the [How To: Conduct Online Meetings](#) guide for tips on how to structure remote meetings.

Youth Protection

All *FIRST* activities, including online team meetings, are expected to follow the standards set in the [Youth Protection Program](#) in addition to those set by the school or organization hosting the team and/or activity.

Remote Collaboration Best Practices

- Involve students in discussions about best practices.
- Keep your team's and [FIRST Core Values](#) at the forefront of how to work together.
- Have students create team norms for working remotely.
- Keep the whole team involved by ensuring everyone has a role that is valuable to overall team success.

Digital Tools

Remote collaboration can sometimes make it harder to experience the inspiration that happens by working together and making improvements in real time. It sometimes makes collaborative programming or editing documents difficult too but there are many options for how to overcome these.

Choose a [Video Conferencing service and/or apps](#) to host your meetings.

- Review settings to ensure safety for all participants.
- Limit meetings to invited team members and specific invited guests only.
- Practice using the tool with the team, so all are comfortable with the platform and its features.

Other useful digital tools for sharing include:

- Remote Collaboration – [Google Classroom](#), [Google Meet](#), [Zoom](#) or [Discord](#)
- Collaborative Whiteboards – [Miro Whiteboards](#), [Whiteboard](#), [Jamboard](#)
- Interactive slideshows – [Peardeck](#)
- Social Learning – [Flipgrid](#)
- Collaborative Brainstorming – [Google Drawings](#) or [Teams Whiteboard](#)
- Create Multimodal Content – [Buncee](#) or [Adobe Spark](#)
- Surveys or Interactive Stories – [Google Forms](#) or [Microsoft Forms](#)
- Project Management or Organization – [Trello](#) or [Freedcamp](#)

Wondering how to align a team meeting or remote classroom to ensure *Gracious Professionalism*[®] is present in all your team does? Use the [Gracious Professionalism Check-In Guide](#) to compose your meetings and spark ideas for questioning techniques in a remote environment, as well as how to incorporate student voice and choice in activities.

Additional Thoughts About Virtual Meetings

Remote meetings mean team members will see inside each other's homes, so have a conversation about what's appropriate to share. All home lives vary, so be respectful and, if required, provide help, guidance, or advocacy to your team.

Accessibility

Whether you have retuning or new team members, there are important access considerations to understand that lead to positive and inclusive experience for all participants. Use the [Equity, Diversity & Inclusion training modules](#) to learn how to help all students be successful. A parent or guardian may confide to a mentor that their child has a specific diagnosis, mentors should use the [Gathering Info from Families Tip Sheet](#) to help determine what information to ask.

Overcoming Challenges in Meeting and Meeting Spaces

Some teams may have lost meeting spaces or access to supplies. Your team might need to reach out to the community and/or parents to find resources and areas where your team can work in smaller groups or independently with adult supervision, such as mobile labs.

Prior to your team's first remote meeting, be sure to check that each team member has the necessary technology and permission to use that technology, the time to participate in team meetings, and reliable access to the internet. Start with a phone call or survey to team members, parents, or guardians to understand the following considerations, and then make a plan based on what you learn.

1. What technology does each team member have?
2. How much access does each team member have?
3. Would the parents or guardians like to participate/support the team and if so, how much and what might they like to do?

- a. Would a parent or other community member have alternative meeting spaces if you have lost your space to meet?
 - b. Could fabrication or prototyping be completed in a “home shop” with adult supervision?
 - c. What kind of communication/platform would be helpful to the family and how often?
 - d. How/when should parents or guardians communicate with you?
4. Are there family needs that impact participation, like dates and times that don't work?

Section 2 – Engaging Students Remotely

If your team is in a scenario where you cannot meet in person, keeping the team engaged can be a challenge. Encouraging students to use it as an opportunity to develop their own personal skills can greatly benefit your team. Your team may achieve more skill development through learning new programs, developing additional engineering thinking skills, and pursuing industry certifications.

Learning Computer Aided Design

- *FIRST* Robotics Competition teams have access to many options when it comes to computer aided design thanks to the generosity of our Kit of Parts Suppliers. Information about Virtual Kit items, like CAD software is detailed on the [Kit of Parts Webpage](#). Check back in late November when the items are updated with 2022 Pre-Kickoff items.

Programming

- *FIRST* Robotics Competition teams can start to learn the programming languages for the control system by working through [the documentation on the WPILib](#).
- The [Programming 101 Resource by The Compass Alliance](#) is also a great place to start.

FIRST @ Home

Continue to develop *FIRST* skills using the resource on the [FIRST @ Home webpage](#). This site contains carefully chosen activities that align with STEM learning experiences and represent an opportunity to build a variety of technical skills and career preparedness/holistic skills that range from high tech, to low tech, to no tech. In addition to links from our partners to explore *FIRST* core values, coding, computer aided design, robot mechanics, electronics and STEM or Career and Technical Education, we have created free and flexible lessons that can be used in a variety of learning environments. Use these resources to supplement your *FIRST* season and continue STEM learning throughout the year.

Section 3 – Additional Resources

Accessing Mentors and Experts

Some teams may need help recruiting new mentors to join their team. The [FIRST Mentor Network sponsored by NI](#) allows you to connect with other mentors to share ideas, stories, resources and support. It is an interactive platform allowing teams to find mentors to work with virtually or face to face, locally or across the country, for a few hours or for a season. Lead Mentors can build a team profile highlighting successes, goals, and desired mentor skill sets and experience.

In addition to the *FIRST* Mentor Network, topic experts can be found and engaged through social media channels or virtual visits. Mentors should plan to take the lead and can facilitate questions and conversations between their team. Remember your school or community may also be great resources for experts.

Free Professional Learning

[Our friends at Ariel](#), leaders in developing experiential training programs, have shared two courses that are relevant to preparing for the various scenarios that we will experience this season: *Leading and Engaging Remote Teams* and *Teaching in a Virtual Classroom*. A summary of the courses is listed below. You can access the Ariel courses at <https://www.ariel-digital.com/first>, and by using the registration code: first-at-home.

Leading and Engaging Remote Teams

This module is designed for leaders who are new to engaging remote teams. You'll be able to learn new techniques and behaviors to ensure you are engaging your people, whether that is adult peers or students. This module can be completed at your own pace, and you are able to get what you want out of the experience. One of the tasks is to create your SMART goal outcomes. Here are some considerations for your goals related to *FIRST*:

- How can you use *FIRST* Core Values to build trust and engage your remote team?
- What team dynamics do you want to ensure are still experienced in a remote environment?
- How might team building be achieved in a remote environment?

Teaching in a Virtual Classroom

This module is designed for educators who are teaching in a virtual classroom. By the end of this experience, you will be able to:

- Engage your virtual student audiences more effectively.
- Develop stronger and more intentional physical and vocal presence for class presentations.
- Make more authentic, trusting connections with remote students.
- Deliver more engaging virtual presentations.
- Facilitate more successful student interactions.