



FIRST
TECH
CHALLENGE

2022-2023
COVID-19 Season
Guidance

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



FIRST
LEGO
LEAGUE



FIRST
TECH
CHALLENGE



FIRST
ROBOTICS
COMPETITION

Contents

Introduction.....	1
Section 1- Student Collaboration.....	2
In-Person Collaboration	2
Creating a Team Safety Plan	2
Remote Collaboration.....	2
Remote Collaborations Practices.....	2
Remote or In-Person Collaboration	2
Consider these details when creating a plan that works for your local scenario:	2
Accessibility.....	4
Section 2-Engaging Students Remotely	4
Learning Computer Aided Design	4
<i>FIRST @ Home</i>	4
Section 3- Additional Resources	5
Accessing Mentors and Experts	5
Free Professional Learning.....	5
Leading and Engaging Remote Teams	5
Teaching in a Virtual Classroom.....	5

Introduction

For 31 years, *FIRST*[®] has been a thriving robotics community that prepares children of all ages worldwide for the future. We are committed more than ever to delivering the life-changing experiences our programs offer to young people during these uncertain and challenging times. Thank you for joining us to explore new and exciting ways to deliver our programs with your safety and wellbeing as our top priority.

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 Collaboration

Creating a Team Safety Plan

Instilling a culture of safety is a value that every individual in the *FIRST* community must embrace as we pursue *FIRST*'s mission and vision. As you plan to have a safe season, you can consider the implications of infectious disease and incorporate elements that help minimize the risk of spreading COVID-19. Elements of this plan can include use of collaboration tools, identifying precautions, social distancing measures, and establishing policies around sharing materials and tools.



Figure 1- A small robot wearing a medical mask on a grass field

Prior to putting a safety plan in place, it is recommended that you reach out to your organization as well as local health offices to determine the guidance for your area. 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.

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.

Remote Collaborations Practices

- Involve the team in the discussions.
- Keep Core Values at the forefront of how to work together.
- Have students create new team norms for working remotely.
- Keep the whole team involved by ensuring everyone has a role that is valuable to overall team success.

Remote or In-Person Collaboration

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?
- How long should each meeting be? (consider that things may take longer with safety measures like social distancing)
- With whom will this plan be shared?

The following are examples of resources you can use as you assemble your plan:

- [How to Protect yourself and others](#)

October 2022 Update

- [Guidance for Cleaning and Disinfecting Public Spaces, Workplaces, Businesses, Schools and Homes](#)
- Consult your school, school district, and other sources of policies for your area.
- Safety requirements for participating in *FIRST* and *FIRST*® Tech Challenge as well as the [Youth Protection Program](#) guidelines
- *FIRST* Tech Challenge [Game & Season Materials](#) page, where you can find Game Manuals for both Traditional and Remote events.

Digital Tools

One of the challenges with remote collaboration is that it can sometimes be harder to experience the inspiration that happens by working together and making improvements in real time. Being remote sometimes makes this difficult when programming or editing documents. 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](#)
- Surveys or Interactive Stories - [Google Forms](#) or [Microsoft Forms](#)
- CAD - [OnShape](#), [Fusion 360](#)
- Bring the FUN! - [Meme Generators](#) or [Kahoot](#)

Wondering how to align a team meeting 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 Notes 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.

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 has several CAD resources available to you, see the Links and Strategies below. The tools will require the importing of CAD files from the manufacturers.

- The full REV Repository is available here: [REV CAD Repository](#)

You will need to know the SKU # to reference for each part step file. Assembly of the robot or subassemblies can be completed in CAD software programs.

Look for tutorials on the following topics:

- How to assemble a model
- Animating a model
- 2D technical drawings
- How to collaborate on team models <https://www.onshape.com/cad-blog/how-to-set-up-your-first-roboticsteam-in-onshape>
- PTC Onshape has an entirely web-based platform for design and modeling of many different things. They support it with a wealth of tutorials that students and teachers can go through. These enable them to learn how to use the platform and how to collaborate with your team on designs. <https://www.autodesk.com/education/home>
- Autodesk also has a CAD platform called Fusion 360. They have a robotics curriculum that you can use to learn the program and how to design and create your robot.
- They also have a program called Simulate where you can load your CAD design into a playing field and simulate the design to gather some more information on what challenge your robot might have in interacting with the game elements and the field.

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.