

## REMOTE MEETING/FTC in the FALL TOPICS

### Brainstorming Session Hosted by FTC Share and Learn

**Q.1 Virtual Tools:** What virtual learning tools/resources exist? How do you make sure students are engaged, motivated and actually attending? How do you still create a sense of team?

- Virtual Platforms –
  - Zoom – for meetings
  - Slack – to track sub-teams, calendar reminders (limited unless you buy subscription)
  - Discord – free, can create own private server, can create text channels to leave messages and multiple chat channels
  - Google Meets, - free, no breakout rooms, limited but can-do sharing screen and meetings
  - Teleconference.com – free, does not have breakout rooms, does have screen sharing
- Team management resources
  - Trello – Trello lets you work more collaboratively and get more done. Trello’s boards, lists, and cards enable you to organize and prioritize your projects in a fun, flexible, and rewarding way. awesome for tracking work – free - <https://trello.com/>
  - Monday.com – Project managing software – not free – But might be able to get a sponsor from them
  - Google Drive – to share information and work together on – free
  - Microsoft OneNote
  - Asana.com
  - Jira – atlassian.com
  - Microsoft Planner
- How to engage/motivate students and create a sense of team
  - Fun Fridays - Connect with teams by playing online games –
    - Jackbox.tv – Host will need to purchase but pretty inexpensive
    - Codenames – free - <https://codenames.cards/> - great for teamwork and tons of fun
    - Scattegories – free - <https://swellgarfo.com/scattergories/>
    - Kahoot (make up trivia questions) - <https://kahoot.com/>
    - Family Feud - <https://zone.msn.com/en/familyfeud/default.htm>
- Fun Activity – Show and Tell with team (share what they are working on)
- Watch Parties – Watch last year’s season matches with team, not just your matches but others and critique matches.
- Orange Alliance for watching previous matches - <https://theorangealliance.org/home>
- Have team Leaders run meetings with coach supervision – give them more responsibility and to get quiet team members involved.
- Fun FTC Simulator Game -
  - Gluten Free FTC team 11115 made XRCSimulator - <https://xrcsimulator.org/downloads/>

**Q.2 Robot Game - Building:** How can the students build the robot while social distancing or with virtual-only meetings?

- Getting started in FTC website - <https://gm0.copperforge.cc/en/stable/docs/getting-started-in-ftc/index.html>
- Rotate equipment between team members
- Divide up the robot into subsystems
- Design subsystems in CAD
- FreeCAD - <https://www.freecadweb.org/>

- OnShape – free CAD program and multiple kids can work on at same time – Great Tutorials that are free - <https://www.onshape.com/> - <https://www.onshape.com/education-plan>
  - <https://www.onshape.com/videos/topic/tutorials>
- Fusion 360 – free for FIRST Teams and multiple kids can work on at same time - <https://www.autodesk.com/education/competitions-and-events/first/recommended-software>
- Google Sketchup – free – not that great but great place to start for beginners - <https://www.sketchup.com/plans-and-pricing/sketchup-free>
- Share files with GrabCAD - <https://grabcad.com/>
- Rotate robot between team members but take copious notes in Engineering Notebook
- Before rotating subsystems or robot, make sure you have rules in place on what to tear apart or rebuild. Make sure you ask before major changes.
- After Kickoff, watch video again together and brainstorm ideas together
- Invite a few team members to work together on robot while wearing masks and being safe.

**Q.3 Robot Game – Programming:** How can the students learn programming this year? How do we get everyone involved in programming if you have only 1 robot and virtual-only team meetings? How do you share code? How do you do iterative testing?

- Robot at one person’s house (or other meeting spot/school classroom if allowed and available) with a field, programmers send program and they test
- Use GitHub to share programs - <https://github.com/>
- SoloLearn – great place to learn how to code - <https://www.sololearn.com/>
- Reach out to other FTC teams and FRC teams to ask for help
- FTC Team Beta 8397 has a simulator that runs your code on a virtual field - Team Beta simulator - [https://github.com/Beta8397/virtual\\_robot](https://github.com/Beta8397/virtual_robot)
- Online Blocks Programming Help
  - <https://ortop.org/ftc/ftc-team-resources/blocksprogramming/>
  - <https://codelabs.developers.google.com/codelabs/blockly-web/index.html#0>
- Debugging/developing FTC code <https://github.com/acmerobotics/ftc-dashboard>

**Q.4 Practice Driving:** How can the drive team practice driving if they can’t meet together?

- Have a virtual strategy session. Talk about the strategy or mental part of driving.
- Don’t forget the defense of driving or shortcuts/tips (if in person meets are happening)
- Gluten Free FTC team made XRCSimulator - <https://xrcsimulator.org/downloads/>
- Rotate robot to different team members to practice driving.
- Practice with an RC car might help with teams using tank drive. Can also help with how joystick works
- Play Rocket League – ~\$20 for Xbox, PC - <https://www.rocketleague.com/>
- Any racing or motorsport game
- Build simple drive train and rotate to team members to practice
- Play loud music and use timers!
- Don’t forget Driver Checklists for prepping for match
- Maybe have 1 driver only this year if possible? Have driver coach work with driver virtually
- Write more auto parts for TeleOp code
- Have the 2 drivers stand as far apart as possible from each other for distancing, wear masks. Use USB extension wires for more distancing.

- Driver coach could be virtual – use laptop next to driver with coach on laptop talking to driver or ear piece?

**Q.5 Outreach:** How can teams do community outreach or connect with STEM professionals while social distancing?

- Connect with professionals remotely, can do virtual presentations- also a way to ask for sponsors
- Take this as an opportunity for your team to connect virtually with other teams around the world
  - Mentor other teams
  - Teach webinars
  - Connect with teams around the world
  - Mentor younger teams: FLL Challenge, Explore, Discover all virtually
    - Watch their presentations – give feedback
    - Help with programming/design/game strategy
    - Become a virtual volunteer for their events
    - Play games to get to know them – younger kids love interacting with older kids
- Invite FIRST Alumni and/or Professionals to talk virtually to your teams
- Contact Hospitals, VA Hospitals, Senior Centers, Libraries, Food Banks – how can you help them virtually
  - Food Drives
  - Make masks
  - Make Face Shields
  - Donate hand sanitizer
- Do presentations virtually to:
  - Senior Centers
  - Elks Lodge
  - Society of Women Engineers
  - Rotary Club
  - Boy/Girl Scouts

**Q.6 Game Play:** How will game play look this year if it is virtual or partially virtual and what about internet issues, some teams may not have internet? **NOTE: This is subject to change**

- Remote FTC Events – Real events on at least a partial field each team's location
- Teams would do the entire game without an alliance partner and no defense from opposing alliance.
  - Scoring – Teams run their own matches and score them – once you start a match you must finish, no redo's
  - Tie Breaker Points – #1 Autonomous Points, #2 End Game Points
  - Each team has to have equal opportunity at each level of competition
  - Meets will last 1 week – teams will log in to schedule their 5 or 6 matches
- July 14<sup>th</sup> – Game manual and Tournament manuals will be released
- Bad internet/no internet – For a full remote event you would just have to access the scoring software online to run the match and post the score. You can use a phone or tablet. You don't have to have great internet for that, but you will need at least a partial field (borrow one?)

**Q.7 Recruiting:** What kind of expectations should we set up prior to people joining the team this season since it is going to be different? Also, how is your team fundraising?

- Recruiting
  - Schedule a video conference for possible new recruits to talk with your team
  - Make sure new recruits know things are not set and tell them to be flexible
- Fundraising
  - When you approach a business make sure they are thriving and not hurting because of COVID
  - Make sure large corporations that you contact are not already donating to your region's program (they don't like being approached after they are already donating millions of dollars)
  - Develop new resources this season, don't just rely on 1 type of fundraising
  - Talk to:
    - Lions Club
    - Rotary Club
    - Elks Club
    - Kiwanis Club
    - Dentist
    - Doctors
    - CVS Pharmacy
    - Walmart
  - Partner with local restaurant with takeout food
  - Create a GoFundme page - <https://www.gofundme.com/>
  - Contact small businesses that might need help with setting up websites possibly for donation or free for outreach
  - Make sure to support your sponsors this year so they will come back
    - Send thank you note
    - Masks, face shields
  - Large Sponsor – have a cover letter, include what they will get from it.
  - Talk to Casinos for grants
    - Check gaming protocols for your area to see if they have to donate a percentage

### **More help for FTC Coaches**

Coach Professional Development in Aug, 2020 -

<https://www.engineering.uiowa.edu/future-students/k-12-outreach/first-tech-challenge/first-tech-challenge-virtual-coach-professional>