FIRST Tech Challenge

October 2023
Intro, Robot Hardware, CENTERSTAGE

Welcome

Schedule

Saturday   9:00 - 4:00 Lunch at noon

Sunday   9:00 - 4:00   Lunch at noon

Agenda

Saturday Morning - Introductions, What is *FIRST*?,
Robot Resources, CENTRESTAGE game

Saturday Afternoon - FTC Events, Portfolios, Team Stuff

Sunday Morning - Wiring, Coding, Vision Portal

Sunday Afternoon - Advanced Programming   or

FIRST Software, Q&A,

Agenda

- Introductions

- What is *FIRST*? What is *FIRST* Tech Challenge?
  What is Gracious Professionalism?

- Robot Parts and Resources

- CENTRESTAGE Game

Introductions

- Name, School, What do you teach or what is your favourite subject?

- Do you have any experience with robots?

- What's something you are hoping to get out of this weekend?

What is *FIRST*?

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The mission of FIRST is to encourage young people to become the science and technology leaders of tomorrow.

What is *FIRST*?

Students learn:

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Students learn:

- STEM Skills (Programming, CAD, …)
- Leadership
- Budgeting
- Marketing
- Time Management
- Talking to people
- Capturing and presenting ideas
- Failure is a great way to learn
- Respect your opponents
- Teamwork!

Gracious Professionalism

Encourages high quality work, emphasizes the value of others, and respects individuals and the community. Competition is definitely part of GP!
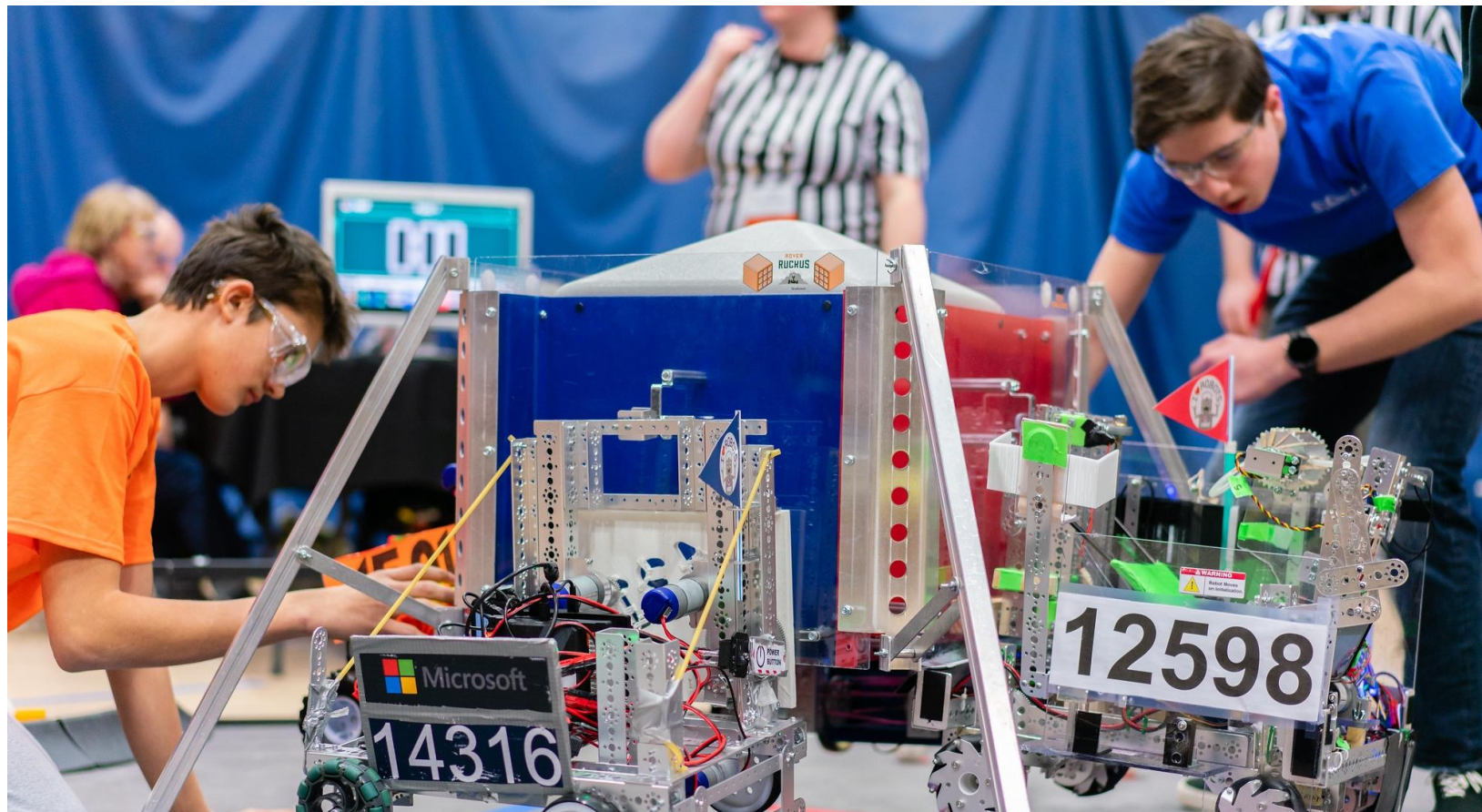
What is *FIRST* Tech Challenge?

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- up to 15 students
- grades 7-12
- design, build and program robot
- compete in matches
- Judging at Tournaments
- Engineering Portfolio
- Reusable Robot Kit
- Make your own robot parts
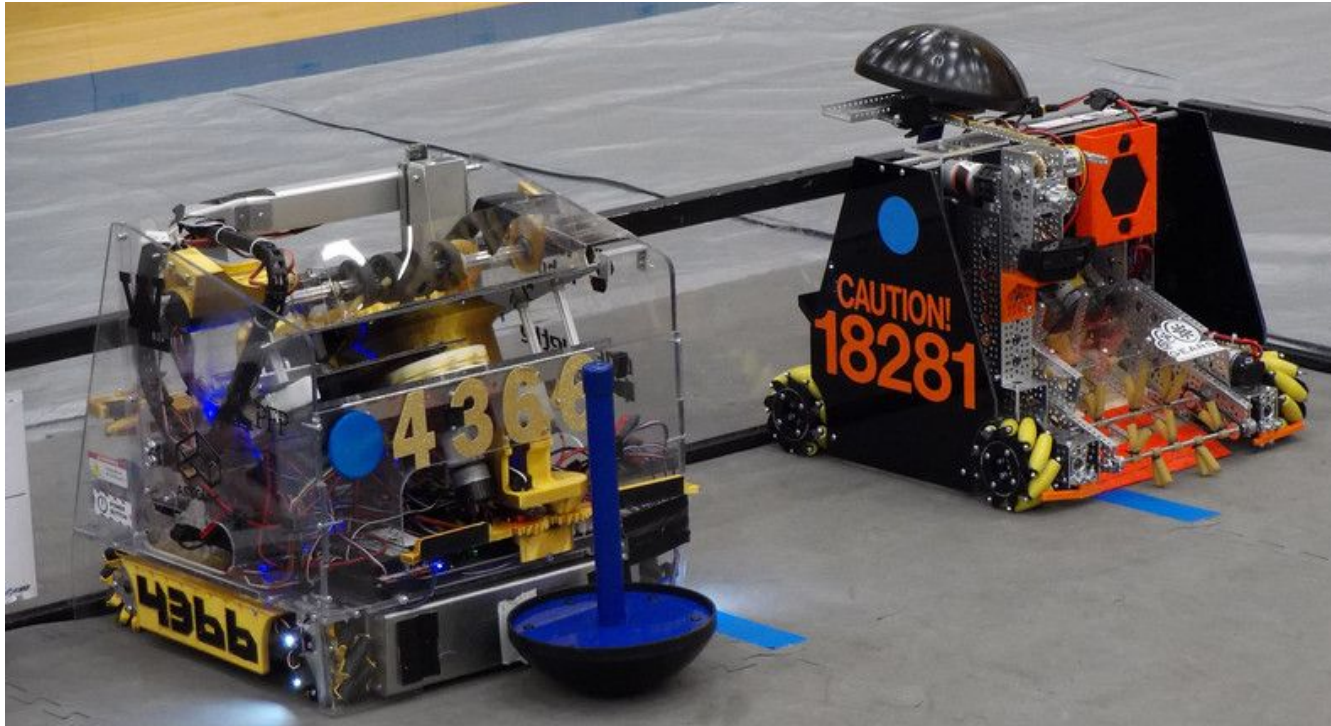- Fundraising and Team Branding,
- Community Outreach

Have fun!

Robots

- Robot Rules in Chapter 7 of Game Manual Part 1

- Allowed Parts

- Robot Building Resources

Robot Rules in Chapter 7 of Game Manual Part 1

Robot Rules in Chapter 7 of Game Manual Part 1

- 18" sizing cube
- limits on electronics and power source
- most hardware is allowed
- Team number
- safe wiring (no risk of entanglement)
- nothing that detaches from the robot
- nothing that damages the field

Allowed Parts

Allowed Parts

- reusable Robot Kit (Tetrix, REV, goBILDA, Studica, AndyMark, …)
- Locally sourced parts
- 3D printed
- Machined parts
- plastic, cardboard, elastics, surgical tubing, …

FIRST BC workshop on Looking Beyond the Kit of Parts

https://www.youtube.com/watch?v=XJhvHT1RoUE&list=PLIBrpYHdy1Jgt1GeZRJWE40N1G1NkYJFg&index=4

Building Resources

Building Resources

Game Manual 0 (wiki for FTC written by teams)
https://gm0.org/en/latest/index.html

FTC Tech Tips

FIRST Tech Challenge Tech Tips — FIRST Tech Challenge Docs 0.2 documentation (firstinspires.org)

Supplier Websites and Videos

Tetrix - https://video.pitsco.com/default.aspx?gID=73

REV - https://www.revrobotics.com/resources/

AndyMark - https://www.youtube.com/results?search_query=andymark+centerstage
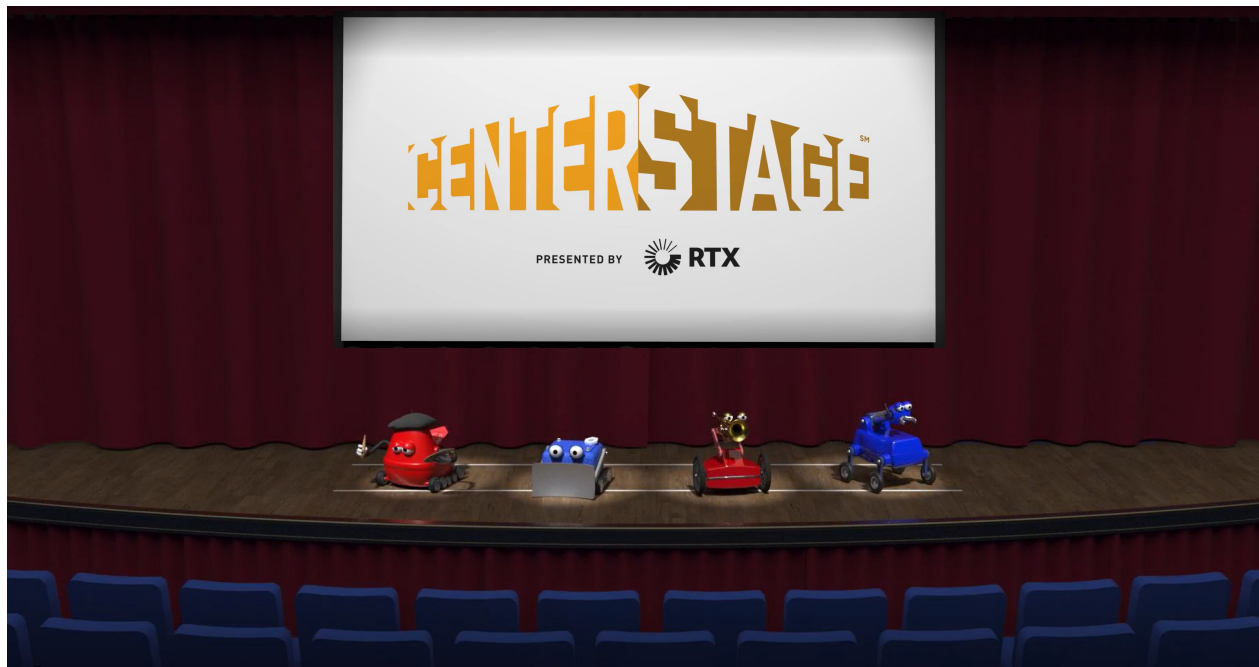
CENTERSTAGE

Remote Field

Remote Field
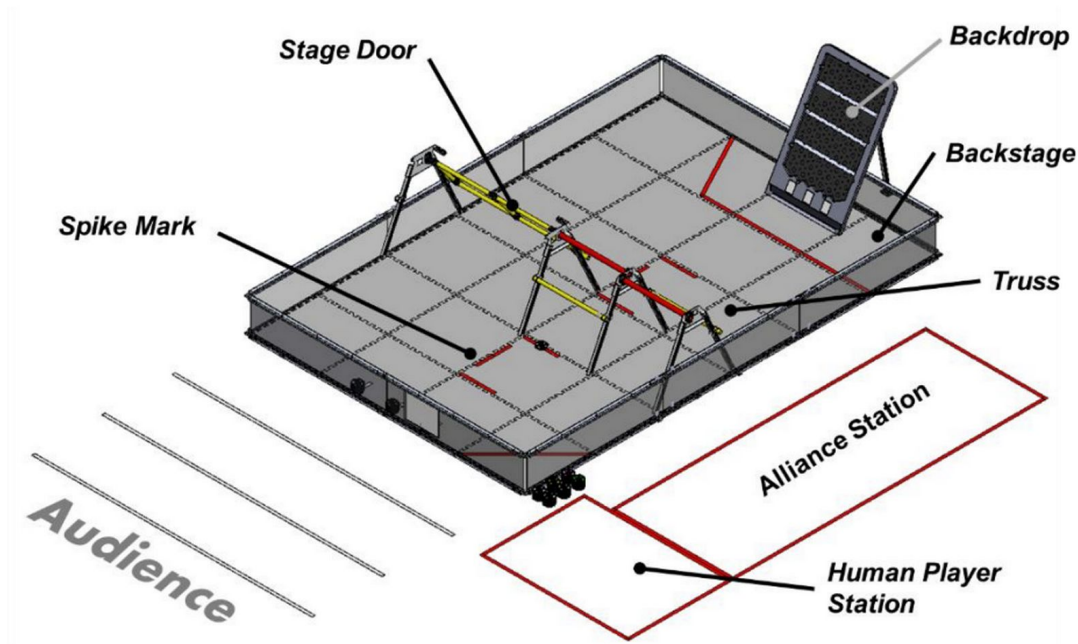
CENTERSTAGE Autonomous

CENTERSTAGE Autonomous

Navigating:

Parked In Alliance Backstage: .... 5 points

Randomization Tasks based on white Pixel:

Purple Pixel in Spike Mark location: ....10 points

Yellow Pixel in correct column on Backdrop: ....10 points

Randomization Tasks based on Team Art:

Purple Pixel in Spike Mark location: ....20 points

Yellow Pixel in correct column on Backdrop: ....20 points

Pixels:

Placed in Backstage: .... 3 points

Placed on Backdrop: .... 5 points

CENTERSTAGE Tele-op

CENTERSTAGE Tele-op

Pixels:

Placed in Backstage: .... 1 points

Placed on Backdrop: .... 3 points

Bonus:

Artist - mosaic : …………………………………….……………….. 10 points

Set - pixels cross a set line: …………………………………….10 points

CENTERSTAGE End Game

CENTERSTAGE End Game

Robot location:

    Hanging from Rigging: .... 20 points

    Parked in Backstage: .... 5 points

Drones:

    Zone 1: …………………………….......…................................ 30 points

    Zone 2: …………………………………................................... 20 points

    Zone 3: …………………………………................................... 10 points

CENTERSTAGE Resources

Game Manual Part 2

https://firstinspiresst01.blob.core.windows.net/first-in-show-ftc/game-manual-part-2-remote.pdf

FTC Q & A

https://ftc-qa.firstinspires.org/

Game Play Webinars

CENTERSTAGE presented by RTX Season Team Webinars - YouTube

Good Luck this Season!