



FIRST Tech Challenge

FIRST progression of programs



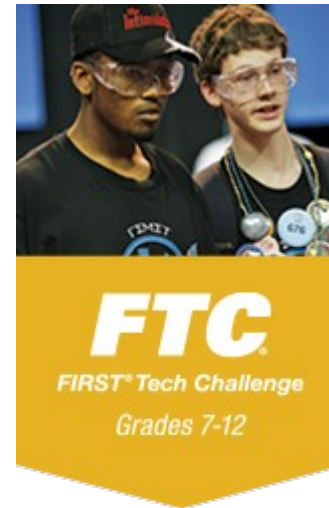
Grades K-3
4,500 teams
27,000+ players
100+ expos

LEGO elements



Grades 4-8
26,000 teams
267,000 players
1,200+ qualifiers
136 championships

LEGO Mindstorms



Grades 7-12
4,500 teams
44,000 players
300+ meets/events

TETRIX/Matrix kits



Grades 9-12
3,000 teams
75,000 players
100+ meets/events

120 lbs, custom

* based on 2014/2015 projections
<http://www.usfirst.org/aboutus/first-at-a-glance>

FIRST Tech Challenge

Grades 7-12

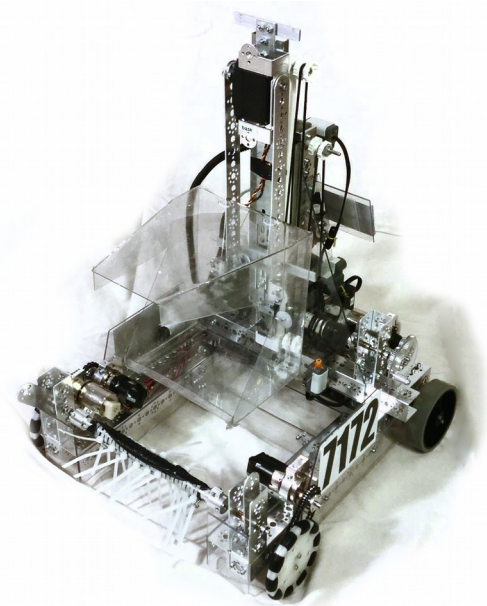
Up to 15 students per team

Robots built using modular kits
and custom parts

TETRIX, Matrix, 3D-printing, polycarbonate, wood, ...

Game challenge and theme changes every year

Bowled Over, Ring It Up, Block Party, Cascade Effect



FTC Game

Two alliances of two teams
each (four robots)

12' x 12' field with game elements

Robots perform tasks to earn points

30 second “autonomous” portion

2 minute tele-operated (driver control) portion

FTC game competition

Qualification matches

Randomly selected alliances

Teams earn a W-L-T record (QP) and ranking points

Elimination matches (“playoffs”)

Top four teams from qualification matches become “alliance captains”

Captains select other teams to form playoff alliances

Elimination bracket, two wins needed to advance

Winning alliance and Finalist alliance

FTC Awards

FTC Inspire Award	overall
Winning/finalist alliance	robot game
Think Award	engineering notebook
Connect Award	outreach
Rockwell Collins Innovate Award	innovation
PTC Design Award	design, CAD
Motivate Award	team spirit
Control Award	control systems

2015-2016 FTC Season

Jul: Game Manual (part 1) released

Competition rules, robot / team requirements

Sep 13: Game reveal and kickoff (part 2)

Game specifics, scoring, penalties

Oct-Nov-Dec: League meets

Dec-Jan: League championships, qualifiers(?)

Feb: Regional championship

2015-2016 FTC Season

Mar 9-11: South Super Regional

Henry B. Gonzales Center, San Antonio

72 teams

Apr 27-30: FTC World Championship

Union Station, St. Louis, Missouri

FTC League Play

Region divided into “leagues” of 10-16 teams

Each league has three or more “league meets”

- Five or more qualification matches per team

- Engineering Notebook judging

League championship

- Teams seeded into elimination rounds based on league meet results

- Judging

- Awards / advancement to Regional Championship based on size of league and championship

Advancement criteria

1. Qualifier “host” team
2. Inspire Award
3. Winning Alliance Captain
4. Inspire Award 2nd place
5. Winning Alliance, 1st team
6. Inspire Award 3rd place
7. Winning Alliance, 2nd team
8. Think Award
9. Finalist Alliance Captain
10. Connect Award
11. Finalist Alliance
12. Rockwell Collins Innovate
13. Finalist Alliance, 2nd team
14. PTC Design Award
15. Motivate Award
16. Control Award