Robotics

Student Activities Conferences 2024

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Before We Get Started

Register your attendance by scanning QR Code.

Session numbers are in the program.

LUBBOCK ROSTERS

Sessions 215 & 216

Robotics Alphabet Soup

BEST

FIRST

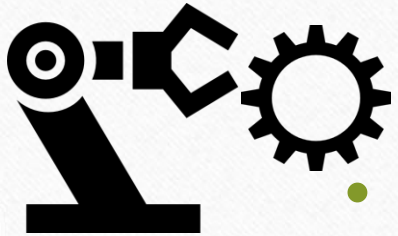
UIL

RECf-VEX

FRC

FTC

UIL Robotics



- Program structure and participation
- Contest and Eligibility Rules
- Costs
- Qualifiers and Championships
- Getting Started
- Resources

Decoding the Alphabet Soup

- BEST – Boosting Engineering Science & Technology
  - Nationwide robotics organization with Texas roots
  - Texas has the most participation in BEST of any state
- FIRST – For Inspiration and Recognition of Science & Technology
  - Worldwide robotics organization with strong participation in Texas
  - Founded by Dean Kamen and Woodie Flowers

Decoding the Alphabet Soup

- FRC – FIRST Robotics Competition
  - The inaugural competition for FIRST, and still the "main event"
  - Features the largest robots and largest playing fields
- FTC – FIRST Tech Challenge
  - Another FIRST program also included in UIL Robotics
- RECF – Robotics Education & Competition Foundation
  - The organization that administers VEX competition programs
- VRC – VEX Robotics Competition
  - The VEX competition program included in UIL Robotics

Program Structure

- UIL Robotics is a collaboration
- Two partner organizations since 2016

BEST Division	*FIRST* Division
• One competition platform • Fall season	• Two competition platforms • FIRST Tech Challenge (FTC) - Fall/spring season • FIRST Robotics Competition (FRC) - Winter/spring season

And Now a Third…

- Official contest in 2024-2025, following two successful pilot years
- One competition platform – VEX V5 Robotics Competition
- Fall/spring season
- VEX competition programs are administered by the Robotics Education & Competition Foundation (RECF)

Participation in Robotics

- Which competition is the right fit for my school community?
- Your school can compete in any or all UIL Robotics divisions
- Participation can change over time
  - More schools are including multiple competition platforms in their robotics programs

How to Sign Up

- UIL Robotics is included in your school's UIL membership
  - No additional registration with UIL
  - No additional fees paid to UIL
- However…
  - You must register with the robotics organization(s) you want to participate with
  - There are registration and entry fees paid to the robotics organizations

Costs

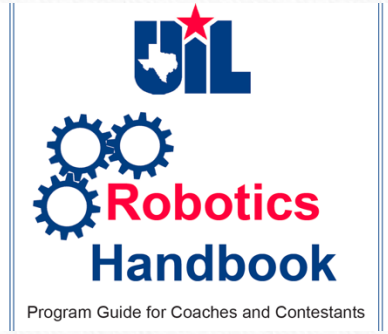
- No fees paid to UIL for robotics participation
- Robotics organization fees
  - Independent organizations that are self-funded
  - Yearly registration
  - Meet entry fees
  - Equipment costs – startup and recurring
- Costs vary dependent on the competition

Funding Your Program

- School support
- Grant funding
- Parent support
  - Booster clubs
- Community support
- Program fundraisers
  - Hosting events
  - Summer camps for younger students

Contest Rules

- UIL rules determine team eligibility to compete for UIL Championships and specify championship criteria
  - UIL Robotics Handbook (updated version coming soon)



- BEST, FIRST and RECF-VEX rules determine how the contests are run - contest specifications, qualifier structure, judging, scoring, etc.

Student Eligibility and Team Composition

- Robotics participants must meet standard eligibility rules required by state law, UIL and local school district policy
  - e.g. No Pass No Play
- To be eligible for UIL honors, teams must be:
  - High school-based
  - Have a majority of team members in grades 9-12
- High school-based teams that include some middle school students (composite teams) are eligible for UIL state championships
- Teams that include students from multiple high schools (combined teams) are NOT eligible for UIL state championships
  - STEM center campuses and full-time student requirements

Qualifier Meets

- Participation in the regular season for the robotics organization is required
- No UIL district or regional contests
- Qualification to the UIL Robotics State Championships is based on your team's scores in BEST, *FIRST* or RECF-VEX qualifier meets
  - BEST – Hub Competitions
  - FTC – League play, regional* contests
  - FRC – District* model
  - RECF-VEX – League play, regional* contests
- Qualifier meets are organized and administered by the robotics organizations, not by UIL
  - Collaboration --> Championships

* - *FIRST* and VEX districts and regions are not linked in any way to UIL districts and regions

State Championships

- UIL Robotics State Championships are invitational
- Invitations are based on performance in BEST, *FIRST* or RECF-VEX qualifier meets plus consideration of the number of competing teams in a given location
- Robotics organizations determine the points/rankings systems
  - UIL collaboration on specifications and priorities for advancement to UIL State
- The number of slots available is based on the number of qualifier meets and participating teams, plus what the venue and schedule will allow
- Waiting lists are maintained

Concurrent Scheduling

- A UIL Championship and a BEST/*FIRST*/RECF-VEX Championship in a single event
  - In recent years, BEST and FRC
- Two scoring tracks
  - UIL Awards track – only UIL eligible teams, awards presented by UIL
  - Robotics Awards track – UIL and non-UIL teams, awards are presented by the robotics organization
- Why concurrent versus standalone UIL championship?
  - Large-scale Robotics events are complex (and expensive) to organize and to host
  - Reduce travel and loss of school time

Robotics and UIL Classifications

- Robotics is not split into UIL Conferences 1A-6A
- BEST Division:
  - Two competition groups and two state champions: small school (1A-4A) and large school (5A-6A)
  - Planned move to three groups for 2024
- FIRST Division:
  - FTC – Conferences 6A, 5A, 4A and below; three state champions
  - FRC – single competition group; one state champion
- RECF-VEX Division
  - Conferences 6A, 5A, 4A, 3A and below; four state champions

UIL Points and TILF Scholarships

- Robotics receives points toward overall Academics State Championships
  - 1st place = 20 points; 2nd = 16 pts.; 3rd = 12 pts.; 4th = 10 pts.
    (When placement is determined by elimination bracket, non-advancing semifinalists split 3rd and 4th place points)
  - No district or regional points
- Lone Star Cup points
  - State 1st place – 6 points; 2nd place – 4 points; 3rd place – 2 points;
    State championship berth – 1 point
- TILF eligibility
  - Students on teams that finish in the top 10 for their competition group at the state championships

Local Policies

- Student letters or letter jackets
- Teacher compensation (stipends paid to coaches, etc.)
- Use of school facilities, transportation, etc.

Participation in Robotics – First Steps

- Register a team with the organization you have chosen
- Team registration happens through the national offices of BEST, FIRST or RECF
  - www.bestrobotics.org
  - www.firstinspires.org
  - www.robotevents.com
- Texas affiliates will help you
  - www.bestoftexasrobotics.org
  - www.firstintexas.org
  - www.robotevents.com/support (RECF-VEX, click Texas on the map for contacts)

Which Program to Choose?
Some Factors to Consider…

- Scheduling
  - BEST – compact fall season
  - FRC – compact spring season
  - FTC – spread out season (UIL championship in March/April)
  - VEX – spread out season (UIL championship in February)
- Cost and available resources
  - BEST, FTC and VEX are comparable, FRC costs more
  - Lots of variables – available facilities/equipment, travel considerations, etc.
- Personnel
  - What is the best fit for the educator(s) who will be working with the robotics program at my school?

Which Program to Choose?
Some Factors to Consider…

- Which programs are most active in your area?
- Educational focus
  - In general, BEST and FRC will include a heavier engineering component, while FTC and RECF-VEX incorporate more programming
  - BEST – build from raw materials
  - FRC – build with higher-end machining
  - FTC and VEX – build from prefabricated parts
- Additional competition elements
  - Presentations, engineering notebooks, etc.

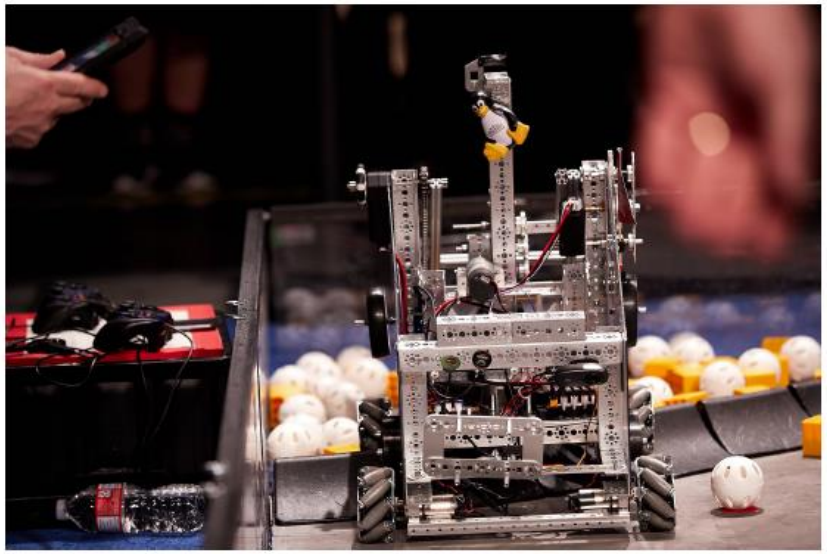
Robotics In Your School

- Potential to be a program, not just a contest
- What makes a program?
  - Ties to curriculum
  - Dedicated funding, facilities, personnel
  - Year-round student engagement
  - Multiple platforms for competition
  - Engagement of the larger school community
- Reach new groups of students
- Build a culture
- Think of other programs at your school – band, theatre, speech/debate, athletics

Example Robots - BEST

Some robots from 2017 BEST competition: "Crossfire"

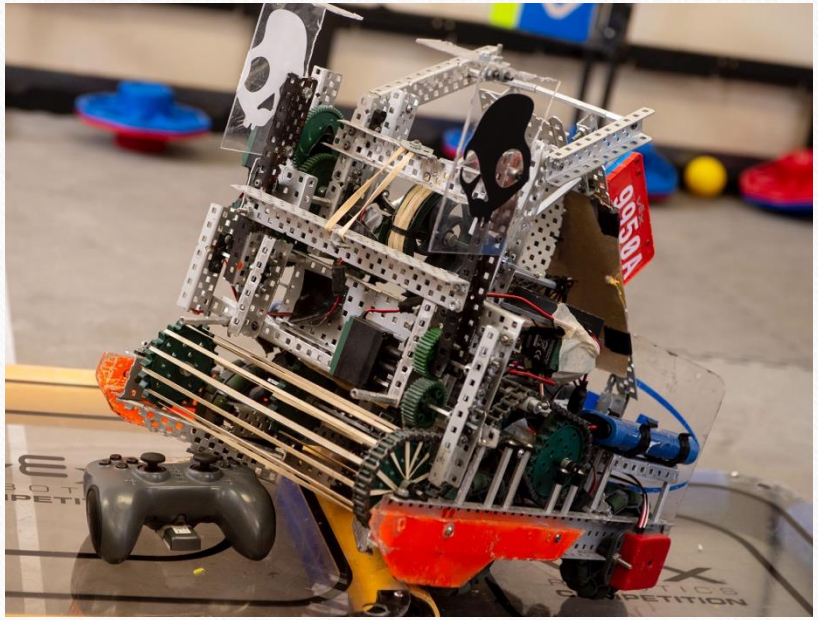
Example Robots - FTC



Example Robots - FRC

FIRST ROBOTICS COMPETITION

Example Robots – RECF-VEX



Resources

- BEST
  - National Headquarters website
  - National Registry
  - BEST of Texas
- FIRST
  - FIRST HQ website
  - FIRST in Texas
- RECF-VEX
  - RECF website
  - Team engagement manager

Resources

- Robot parts and kits, game fields, etc.
  - BEST – kit of parts included with registration
    - Limited use of customized parts
  - FTC – purchase through AndyMark or REV Robotics
    - Many parts are reusable year to year
  - FRC – kit of parts included with registration
    - Lots of customization options
  - RECF-VEX – purchase through VEX Robotics
    - Many parts are reusable year to year
- Grant funding – check with Texas contacts for each organization

Thank you for attending

Lubbock Eval

We value your feedback.

Please complete conference evaluation after your last session.

TEXAS TECH UNIVERSITY-LUBBOCK