Vex Robotics

Event Overview

Applying leadership and 21st-century skills, participants in the Vex Robotics event will work together as a team and form an alliance with another team to use problem-solving and scientific discovery to attain a higher score than the opposing Alliance. The current game, "High Stakes," involves scoring Rings on Stakes, placing Mobile Goals in designated zones, and climbing a central Ladder. Head-to-Head Tournaments consist of Qualification Matches and Elimination Matches. Qualification Matches are used to rank Teams based on Win Points (WP), Autonomous Points (AP), and Strength of Schedule Points (SP). The top-ranked Teams will then form Alliances to participate in Elimination Matches and determine the tournament champions.

Competitors
Participants compete in teams of 3-4 students per robot.
Schools may register more than 1 team.

Competitors Must Bring:

- Robot (with team # and other requirements met)
- Transmitter/Joystick
- Fully charged batteries (and spares, if you have them)
- Battery chargers (both kinds if needed)
- Laptop with your programs
- Extension cord and power strip with enough sockets for all battery chargers and laptop
- Robot kit with spare parts
- Tools
- Safety goggles/glasses
- Engineering notebook
- Supplies like tape, Sharpie markers, pens, scissors, Ziploc bags for emergencies

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Competition

The VEX Robotics Competition "High Stakes" is played on a 12'x12' square field, set up as illustrated in the figures throughout the High Stakes Game Manual. The object of the game is to attain a higher score than the opposing Alliance by:

- Scoring Rings on Stakes (1 point per ring)
- Placing the top Ring on a Stake (3 points per top ring)
- Positioning Mobile Goals in Positive or Negative Corners, which modify the value of Rings on Stakes
- Climbing the central Ladder for additional points based on height

An Autonomous Win Point is awarded to any Alliance that completes specific assigned tasks by the end of the Autonomous Period. An Autonomous Bonus is awarded to the Alliance that scores the most points at the end of the Autonomous Period.

Pre-Conference:

1. Using the [High Stakes Game Manual](), teams will build their robot to complete the tasks outlined in the Game Manual for VRC Teams.

2. Qualification Matches follow the Match schedule. A Qualification Match Schedule will be available on the day of the competition. The Match Schedule will indicate Alliance partners, Match pairings, and Alliance colors for each Match. The Match Schedule is subject to change at the Event Partner's discretion.

3. Each Team will have at least six Qualification Matches.

Round 1:

1. In Head-to-Head Matches, two (2) Alliances—one (1) "red" and one (1) "blue"—composed of two (2) Teams each, compete in Matches consisting of a fifteen (15) second Autonomous Period followed by a one minute and forty-five second (1:45) Driver Controlled Period.

2. Each team accrues a win/loss/tie record.

3. The winning Alliance in each Match advances to the next round of the Elimination Bracket.

Round 2:

Round 2:

Elimination matches continue to determine a winning alliance and a finalist alliance.

Final Scoring

Scoring for the matches will follow the official VRC [High Stakes Game Manual]() Scoring:

- Autonomous Bonus: 6 Points
- Each Ring Scored on a Stake: 1 Point
- Each Top Ring on a Stake: 3 Points
- Mobile Goals in Positive/Negative Corners: Modifies Ring Values
- Climbing the Ladder: Points increase with height

VEX Robotics
Judge Rating Sheet

Team # _____

Judge's Signature _____

Description	Yes	No
Robot fits within an 18" x 18" x 18" volume		
Robot is safe		
Robot is built from approved Vex components		
Team number is displayed on Robot and Robot License Plates		
Robot releases Rings after the Match		
Robot has one (1) microcontroller		
Robot motor does not exceed 88W		
Electrical power comes from VEX batteries only		
No modifications to electronic components are allowed		
Non-electrical components meet allowed modifications		
Robots uses VEXnet		
Give the radio some space		
Custom plastic within allowed amounts		
Tape within allowed amounts		
Non-VEX fasteners meet specifications		
Pneumatics are limited		
One or two Controllers per Robot		
Custom V5 Smart Cables are allowed		
Power button is accessible		
Use a "Competition Template" for programming		

Robot Meets Requirements: Y or N	