

# Technology Competitions and Exhibits

## Robotics (VEX) - Division 50

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### Entry Form accepted from October 21, 2019 to January 14, 2020.

Check In:	February 27, 2020, 4:00 PM to 8:00 PM in Arnold Hall.
	February 29, 2020, 10:00 AM to 4:00 PM in Arnold Hall.
Check Out:	April 9, 2020, 4:00 PM to 8:00 PM in Arnold Hall.
Group Entries:	Accepted

### Rules:

- Grade Levels: Middle School and High School Individual and Group entries will be accepted.
- Number of Entries: Only one robot may be entered by an individual or team. Each teacher may enter a maximum of three robots from individuals/teams with no more than 5 student members per team.
- Size and Materials Specifications: Robots are to be a maximum of 18" x 18" x 18" or smaller at the start of the game. Refer to the guidelines in the Tower Takeover, Section 3 The Robot at <https://content.vexrobotics.com/docs/vrc-tower-takeover/GameManual20190614.pdf>
- Entry Tag(s) must be adhered to the lower right corner of the engineering notebook's back cover. A copy of the tag must be securely attached to the robot entry.
- Acceptable Entries: Each entry must consist of two parts.
  - Part One - The VEX competition robot which meets the guidelines set forth in the Vex Tower Takeover – Game Manual (Inspection Guidelines) document <https://content.vexrobotics.com/docs/vrc-tower-takeover/GameManual20190614.pdf>
  - Part Two - An Engineering Notebook (per robot) with documentation, as set forth in the engineering notebook rubric and guidelines available at [curriculum.vexrobotics.com/teacher-materials/assessment-tools/engineering-notebook.html](http://curriculum.vexrobotics.com/teacher-materials/assessment-tools/engineering-notebook.html) and submitted in the form of a bound engineering notebook. The robot and accompanying Engineering Notebook must be submitted to the judging committee on project check-in day for evaluation.
- NOTE: ALL members, coaches, and guests in the pit area must have **SAFETY GLASSES** with side shields or safety goggles on at all times. Each team is responsible for bringing their safety equipment. Failure to follow this rule will constitute a safety violation and may result in your team being disqualified.

7. NOT ACCEPTABLE: No team will be allowed to check-in their entry without the accompanying engineering documentation. Teams not passing inspection guidelines at check-in may be allowed to check-in their robot at the judge's discretion but will not be allowed to participate in a qualifying match until robot inspection has been passed.

### **VEX Tower Takeover Game Description:**

VEX Robotics Competition Tower Takeover is played on a 12'x12' square field configured as seen above. 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.

The object of the game is to attain a higher score than the opposing Alliance by placing Cubes in Towers or scoring Cubes in Goals.

### **Competition Guidelines and Requirements:**

There are sixty-six 66 Cubes on a Tower Takeover Field. Twenty-two (22) Green, twenty-two (22) Orange and, twenty-two (22) Purple. There are also seven (7) Towers placed around the field. Five (5) of these are neutral, with the remaining two being alliance specific. Alliance specific Towers may only be utilized by robots of the same alliance.

Cubes can be Placed in Towers or Scored in Goals. Cubes are worth at least 1 point when Placed in a Goal Zone. The exact value of each cube is determined by how many Cubes of that specific color have been Placed in Towers. When Cubes are Placed in or removed from Towers, the new values apply to ALL cubes. So, the actions of one Robot will impact the potential score for both their own alliance, and their opponents.

The alliance that scores more points in the Autonomous period is awarded with (6) bonus points added to the final score at the end of the match. The Alliance who wins this Autonomous Bonus is also awarded 2 purple cubes, which may be introduced at any time during the driver control period.

### **The Playing Field:**

Participants can download specific information and a drawing of this year's competition field in the following document: VEX Tower Takeover – Appendix A (Field Drawings, Specifications, & BOM) located at <https://content.vexrobotics.com/docs/vrc-tower-takeover/GameManual20190614.pdf>

The Robot:

All robot entries must meet the guidelines set forth in VEX Tower Takeover – Game Manual, Section 3 located at <https://content.vexrobotics.com/docs/vrc-tower-takeover/GameManual20190614.pdf>

**Judging and Scoring Criteria:**

Engineering Notebook

Engineering notebooks will be scored by a committee based on the rubric and guidelines at [curriculum.vexrobotics.com/teacher-materials/assessment-tools/engineering-notebook.html](http://curriculum.vexrobotics.com/teacher-materials/assessment-tools/engineering-notebook.html). Tie breakers will be decided by the Engineering Notebook Review Committee.

**Class Number and Title:**

Class 5001 – High School and Middle School Tower Takeover Tournament

**Premiums and Trophies:**

Purple Ribbon .....	\$10.00 and Rosette
Blue Ribbon .....	8.00
Red Ribbon .....	6.00
White Ribbon .....	4.00
Yellow Ribbon .....	Ribbon Only

**Vex Tower Takeover Tournament Trophies:**

The Captain of the winning alliance will receive a team trophy identifying them as Team Captains for the Winning Alliance. The remaining alliance team from the winning alliance will receive Winning Alliance Team Trophies.

**Robotics Engineering Notebook Trophies:**

The top 3 scoring high school and middle school teams' notebooks based on the rubric will be awarded first, second and third place team trophies. Tie breakers will be decided by the notebook judging committee.

If there are no entries meeting the quality standards for any special awards, no award will be given.

If you have any questions during the construction of your robot about competition rules, please refer to the Vex Tower Takeover game manual. For any additional questions please email Carmen Garcia at [clgarcia@dadeschools.net](mailto:clgarcia@dadeschools.net) or Melissa Fernandez at [melissafernandez@dadeschools.net](mailto:melissafernandez@dadeschools.net).