CIJE-Tech Middle School

Robotics Competition 2026-2027

Level Up

CENTER FOR INITIATIVES IN JEWISH EDUCATION

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Revision A, 07/15/2026

The Center for Initiatives in Jewish Education (CIJE)

The Center for Initiatives in Jewish Education (CIJE) strengthens and enriches the quality of education in Jewish schools throughout the United States. CIJE is investing in our nation's future by providing beneficiary schools with cutting-edge technology, engaging curricula, and vital support so that students can acquire the skills they need to excel in our global society. Currently, CIJE has more than 245 beneficiary schools across the United States and programs which span grades K-12. CIJE's innovative programs are paving the way for the achievement and success of tomorrow's leaders and thinkers.

CIJE-TECH STEM PROGRAM: AN OVERVIEW

More than ten years ago, the Center for Initiatives in Jewish Education began the implementation of various STEM programs in elementary Jewish schools. The success of these programs brought about the initiation of the CIJE-Tech Principles in Engineering and Applied Engineering programs.

Goals:

The CIJE STEM education programs:

- Provides a challenging and rigorous program of study focusing on the application of STEM subjects.
- Offers courses and pathways for preparation in STEM fields and occupations.
- Bridges and connects in-school and out-of-school learning opportunities.
- Provides opportunities for student exploration of STEM related fields and careers.
- Prepares students for successful college and university STEM education.

To increase STEM learning, the CIJE-Tech programs include activities that improve student and teacher content knowledge and teacher pedagogical skills. Innovative strategies are used, including small group collaborative work and the use of hands-on activities and experiments to promote inquiry and curiosity. Learning is connected to the real world through an emphasis on the application of STEM subjects to everyday life, employment, and the surrounding environment.

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Robotics Competition

Game Rules

2026-2027



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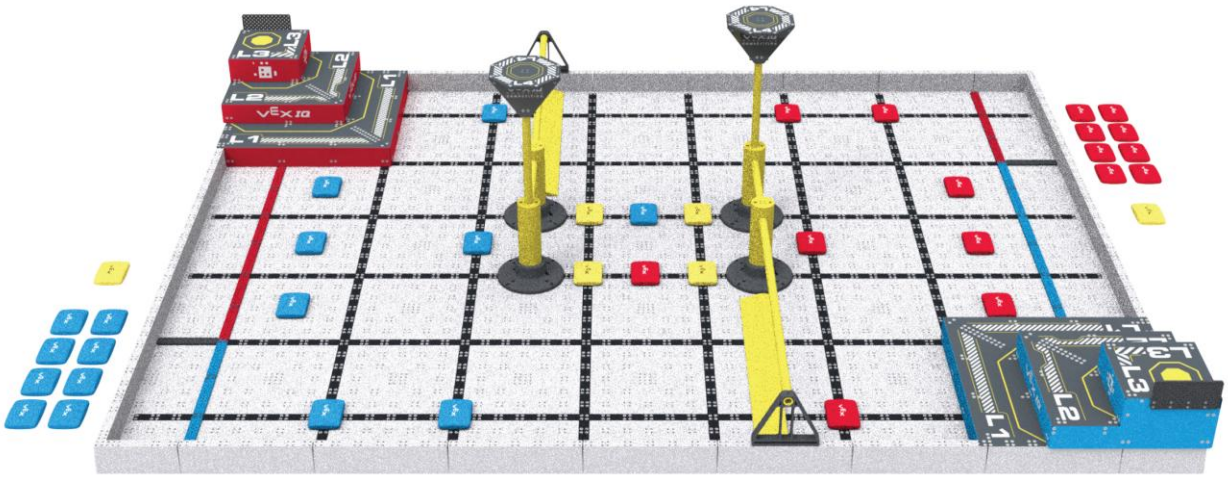
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Summary

VEX IQ Robotics Competition Level Up is played on a 6'x8' rectangular *Field*, set up as illustrated in the figures throughout this game manual. An Alliance composed of two (2) Robots works together to score as many points as possible in a sixty (60) second Match

The primary objective of the game is to score *Bean Bags* into *Goals*. Higher *Goals* earn more points, and a *Robot* can only carry one *Bean Bag* at a time.



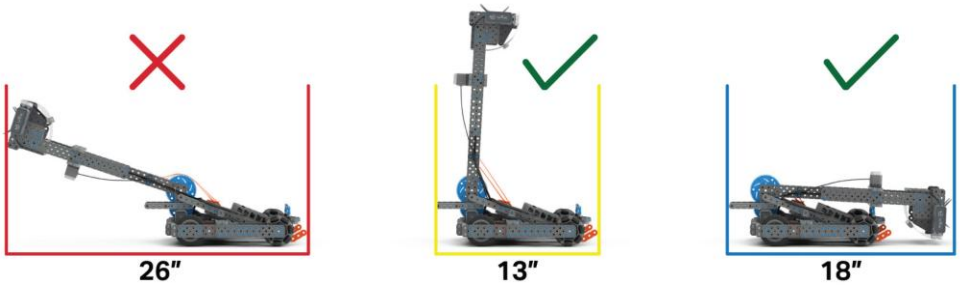
All disputes are to be decided at the head referee's discretion.

Robots Rules

1. Each team will undergo an official measurement before they can compete. Robots must fit within an 11" wide x 20" long x 15" high dimensional box
2. Teams that do not meet the dimensional requirements will not be allowed to compete in matches until the infraction is fixed.

   Each team will undergo an official inspection and measurement before they can compete. Teams that do not meet the dimensional requirements will not be allowed to compete until the size is corrected.

3. Robots MAY expand horizontally up to a dimension of 11" x 24" during Match play.
4. There is no limit to vertical expansion.
5. Robots may NOT exceed horizonal expansion limits EVEN while transitioning to a vertical expansion, as demonstrated in the images below:



6. Only official VEX IQ components specifically designed for use in Robot construction are allowed. With the following exceptions:
    a) HEXBUG and VEX GO mechanical and structural parts.
    b) 1/8" metal shafts from the VEX V5 product line.
    c) Lubrication
7. VEX IQ Packaging and Field Elements may not be used, unless it is possible to be reconstructed using standard VEX IQ components.
8. Official Robotics components from the VEX IQ product line that have been discontinued are still legal for Robot use.
9. To determine whether a product is "official" or not consult www.vexiq.com.
10. VEX IQ Smart Cables may only be used for connecting legal electronic devices to the VEX IQ Robot Brain. They're not ropes.
11. VEX IQ Pneumatics Kit (228-8795) may be used, but must satisfy the following criteria:
    a) No more than two (2) Air Tanks, including any not connected, may be used.
    b) No more than (1) Pneumatic Pump, including any not connected, may be used.
    c) No additional parts that are not included in the VEX IQ Pneumatics Kit (e.g., unofficial tubing or fittings), may be used.
    d) There are no restrictions on running the Air Pump prior to (or during) Matches.
12. 3D printed components may not be used, unless replicating an already existing VEX component, without changing its form or function.
13. Parts may NOT be modified. Examples of modifications include, but are not limited to, bending, drilling, cutting, sanding, gluing, or melting. The following exceptions are legal:
    a) Cutting metal VEX IQ or VEX V5 shafts to custom lengths.
    b) Bending parts which are intended to be flexible, such as string, rubber bands, or thin plastic sheets.
    a) Cutting VEX IQ pneumatic tubing to custom lengths.
14. Any rubber bands may be used, up to a ¼" inch wide and 7.5" long.
15. Tape may not be used. Only VEX IQ rope or string may be used.
16. There is no weight limit on the robot.
17. The robot must be wireless and cannot have any connections (e.g. - wired, mechanical, string) to the drivers or competitors.
18. Robots may ONLY use one (1) VEX IQ Robot Brain. 1st or 2nd generation.

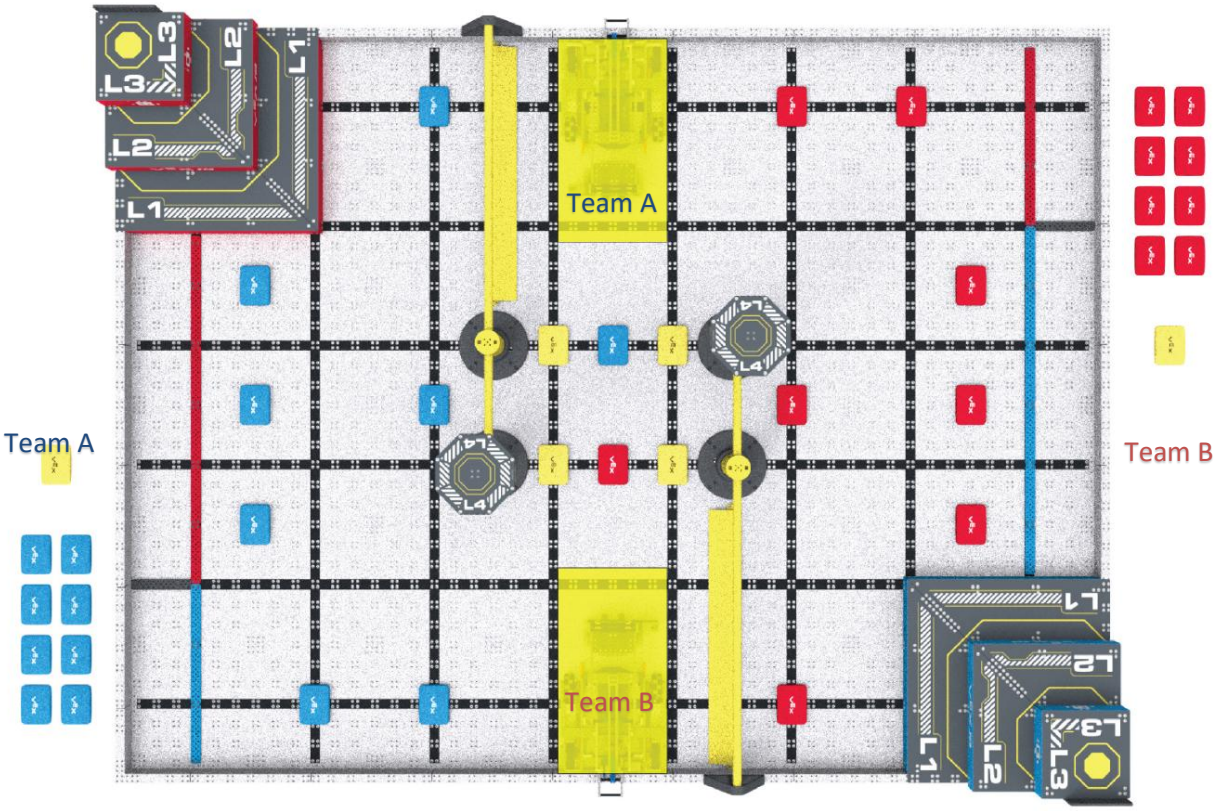
1st Generation	2nd Generation
	

Both 1st and 2nd generation electrnoics are acceptable

19. The only legal method of driving the Robot is one (1) VEX IQ Controller.
20. Robots may use up to six (6) VEX IQ Smart Motors.
21. Additional batteries or motors cannot be placed on the Robot, even if not electrically connected.
22. The only allowable sources of electrical power for a Robot are one (1) VEX IQ Robot Battery or six (6) AA batteries via the Robot AA Battery Holder (Part # 228-3493).
23. The IQ Controller can be powered in any safe manner that you wish.
24. Robots may not intentionally detach or leave mechanisms on the field during the match.
    a) Parts that become unintentionally detached from the *Robot* may be removed with referee permission
25. A competitor may only "drive" for one robot throughout the day. Even if other robots belong to the same school as the competitor, he/she may only drive for one of them.
26. A team (a specific group of students) may not switch robots during a competition. This includes adding or amending to their robot so that it behaves in a significantly different manner or capability. The competition referee will decide all matters pertaining to changing robots during a competition.
27. Mechanisms and components that (1) could potentially damage playing field objects (2) potentially damage other competing robots (3) pose an unnecessary risk of entanglement are not allowed.
28. Robots may not be dangerous.
29. Teams may add non-functional decorations made of any materials, provided they do not affect the robot's performance in any way or affect the outcome of the match.
30. The hosting school will be required to have their robot(s) in the designated tournament area throughout the competition, beginning from the official start time, and may not bring it to another part of the building for the duration of the tournament. They may bring tools and supplies to the tournament area.

Game Rules

31. **Field Overview:** The VEX IQ Robotics Competition Level Up Field consists of the following:
    a) 38 Bean Bags
        - 8 blue + 8 Red Bean Bags on the field
        - 8 blue + 8 red Bean Bags introduced through the blue Load Zone
        - 4 yellow Bean Bags on the field
        - 2 yellow Bean Bags for preload
    b) Two (2) Floor Goals, one red and one blue
    c) Two (2) Load Zones, one red and one blue
    d) Red and blue Pyramid Goals (L1 – L3)
    e) Two (2) L4 Goals



32. **Bean Bags:** Blue, red, or yellow rectangular, pellet filled fabric pouch, measuring approximately 3 inches by 4 inches, and weighing approximately 40 grams.



33. **Starting Position:** At the beginning of a Match, the Robot must fit within an 11” wide x 20” long x 15” high volume, and positioned within one of the starting positions shown above in yellow.

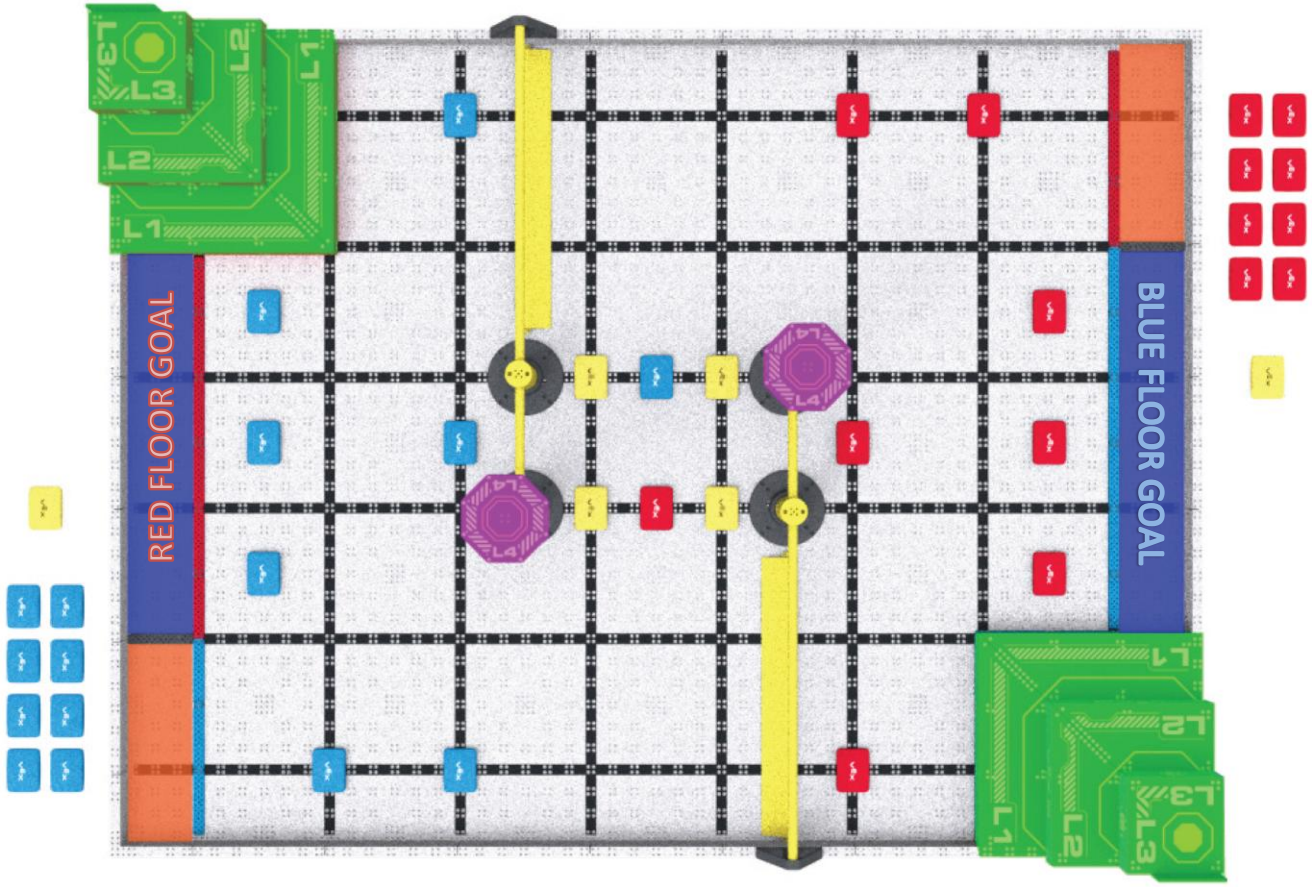
34. **Preload:** Each robot receives one Yellow Bean Bag as preload. It must be in contact with the robot, and NOT another Game Element. If a Robot is not present, its Preload is placed in the matching Load Zone.

Scoring

35. There are four (4) ways to score points:

Objective	Points
Each *Bean Bag* scored in a *Floor Goal*	1 Point
Each *Bean Bag* scored on an *L1 Goal*	3 Points
Each *Bean Bag* scored on an *L2 Goal*	6 Points
Each *Bean Bag* scored on an *L3 Goal*	12 Points
Each *Bean Bag* scored on an *L4 Goal*	16 Points

36. The Floor Goal is on the Floor directly adjacent to the Pyramid Goals, and is of the same color:

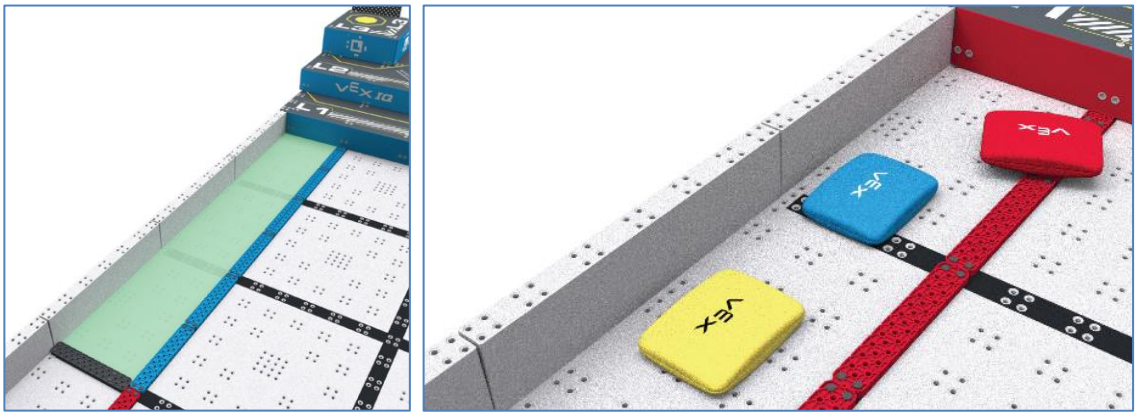


37. A Bean Bag is scored in a Floor Goal, and receives 1 point, if it meets all the following criteria:

    a) The Bean Bag matches the color of the Floor Goal, or is yellow.

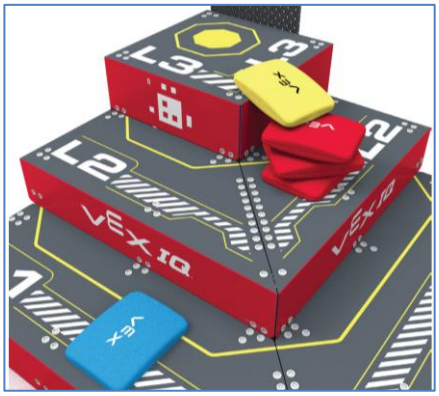
    b) No part of the Bean Bag is contacting a Robot.

    c) The Bean Bag is entirely within the defined area of the Floor Goal. The top of the Field Perimeter is outside the Floor Goal.



Only the Yellow Bean Bag is considered scored in a Floor Goal

38. A Bean Bag is scored on an L1, L2, L3, L4 Goal if it meets all of the following criteria:
    a) No part of the Bean Bag is contacting a Robot.
    b) The Bean Bag is in contact with the horizontal Goal surface, or supported by a Bean Bag that is in contact with the horizontal surface.
    c) The Bean Bag matches the Goal color, or is yellow (L4 is a Yellow only Goal).
    d) The Bean Bag is not in contact with anything outside the Field.
39. If a Bean Bag counts as scored on multiple levels, it only receives points for the higher level.

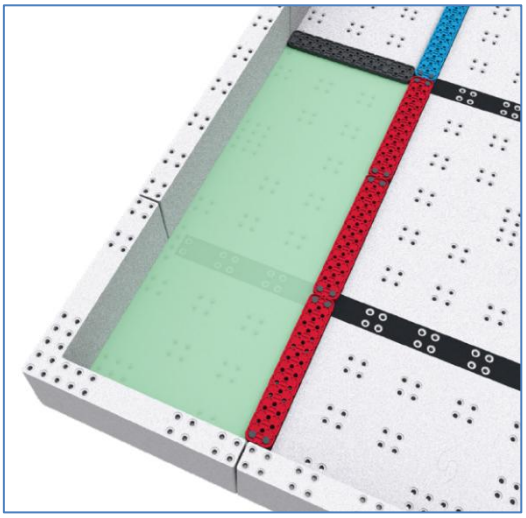


Blue bag is on the wrong color goal
All 3 Red Bags score as L2
Yellow Bag is scored as L3



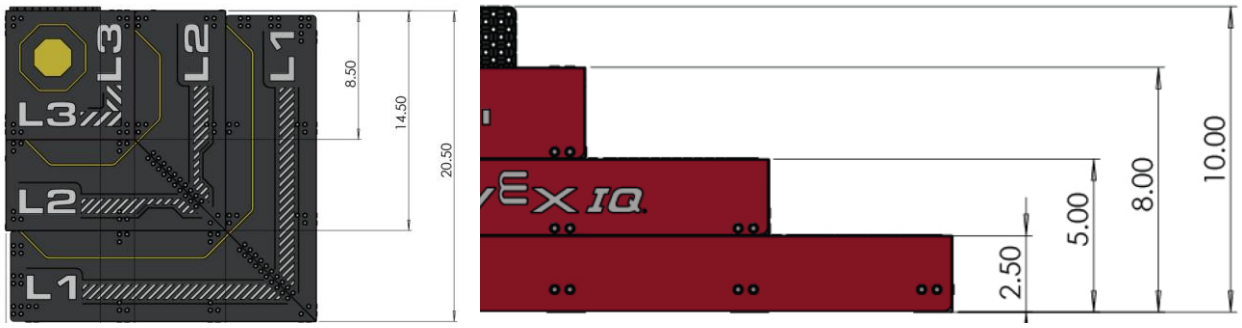
Both Yellow Bags are scored as L4.
Only Yellow Bags can score on L4. The Red Bag is not scored.

40. All scoring statuses are evaluated after the Match ends.
41. Scoring Objects that leave the Field Perimeter during a match are NOT returned or reloaded.
42. Robots may only Possess or Plow one (1) Bean Bag per robot at a time. Plowing is defined as pushing a Bean Bag across 1 tile length (i.e. – 1 foot) or more. Incidental contact is fine.
43. Bean Bags may be Loaded during the Match using the following criteria:
    a) Loaded into their respective color Load Zones.
    b) Placed in contact with the Floor and fully within the Load Zone (i.e. – it cannot be placed on the pieces used to form the border)
    c) No other Bean Bags are in that Load Zone.
    d) A Robot may not contact a Bean Bag in the Load Zone while it's in contact with a human person.

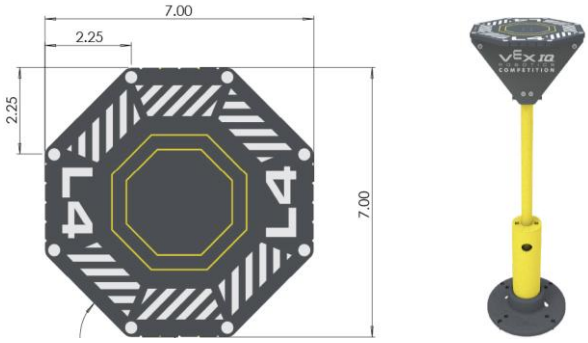


Each color has a designated Loading Zone in the corner

Field Dimensions



L1, L2 and L3 consists of a set of stairs at varrying heights and widths



L4 consists of an elevated platform, 24" above the Field Floor

Gameplay Rules

44. A Robot may only be driven by a member of its Team. No driver may fulfill this role for more than one Robot (i.e. – you can drive a lot, but only for one robot).
45. Drivers are not required to switch mid-Match. (Note this differs from official VEX Rules).
46. Drivers are prohibited from making intentional contact with any Field Element, Game Object, or Robot during a Match. If part of the robot inadvertently extends outside the arena it may not be touched as well.
47. If a Robot goes completely outside the Playing Field, gets stuck, tips over, or otherwise requires assistance, the Drive Team Members may retrieve & reset their Robot with referee permission.
48. Any *Scoring Objects* being controlled by the *Robot* while being handled must be removed from the *Field.*
49. Robots may not intentionally cause damage to game objects, field elements or rink components.
50. All Scoring statuses are evaluated visually by a Referee, to the best of their ability within the context of a given Match/event.
    a) Referees and other event staff are not allowed to review any videos or pictures from the Match.
    b) If there is a concern regarding the score of a Match, only the Drivers from that Match, not an Adult, may share their questions with the Referee.

c) Where a Scoring status is determined "too close to call" by the referee, Teams will be given the "benefit of the doubt," and the higher of the two possible Scoring statuses should be assigned.

51. **Code of conduct:** Treat everyone with respect. All students, teachers, mentors and adults associated with a school are expected to conduct themselves in a respectful and positive manner while participating in the CIJE-Tech Robotics Tournament. If person(s) are deemed to be disrespectful or uncivil to staff, volunteers, or fellow teams at an event, the team can be disqualified from their current or upcoming match.
52. If the adult team leader feels there has been an error regarding tournament play, he/she may bring it exclusively to the attention of the head referee without involving students. Their decision will be final say in the matter.

Tournament Style

53. Multiple robots from the same school do not behave as a team or affect each other's scores. For the purposes of the competition each robot is judged independently.
54. Each robot in a match receives all the points scored in that match, regardless of which robot physically scored the points.
55. The tournament will consist of round-robin style play, with robots and alliances chosen at random to play in multiple Matches. It is possible for an alliance to contain two robots from the same school.
56. If a team does not show up to, or is late to, a match it is the judge's discretion on when to begin. The absent robot does not receive any points. The remaining robot plays by itself.
57. Teams are ranked by their AVERAGE Match scores.
58. Every Team will be ranked based on the same number of Matches. If a Team is needed to play an extra match to even out the schedule, or an event is cut short for logistics, those added Matches will be dropped.
59. A certain number of a team's lowest scores will be dropped, based on the quantity of Matches each team plays.
60. Ties are broken by removing the teams' next lowest score and comparing the new average score (this can be done multiple times as needed).

Number of Qualifying Matches per Team	Number of excluded Match scores
Between four (4) and seven (7)	1
Between eight (8) and eleven (11)	2
Between twelve (12) and fifteen (15)	3
Sixteen (16) or more	4

61. At the end of all the qualifying matches, the top 16 teams will form 8 alliances for the Finals. Depending on tournament size, the number of teams that make the Finals may be adjusted.
62. Finals Alliances are assigned as follows: The 1st and 2nd ranked Teams form an Alliance, the 3rd and 4th ranked Teams form an Alliance, etc.
63. Finals Matches are 90 seconds.
64. Each Alliance plays one match. The top score is declared the winner. Ties will be decided with an additional tie-breaker Match.