VEX Robotics Competition Turning Point – “VEX Worlds” Update

2019 “VEX Worlds” Update

The scheduled April 5th, 2019 Game Manual update for VRC Turning Point included the following clarifications. Yellow highlights denote changes to existing rules; (new) labels denote new rules.

Section 2 – The Game

<G6> Drive your own Robot. Each Team shall include up to three Drive Team Members. No Drive Team Member may fulfill this role for more than one Team in a given competition season. Violations or refusal to comply with this rule could be considered a violation of the Code of Conduct and/or <G1>.

Section 3 – The Tournament

<T02> The only people from a Team permitted by the playing field are the three Drive Team Members who are identified by their drive team badges. These badges are interchangeable, but not during a Match.

Drive team badges will not be used at the 2019 VEX Robotics World Championship. <T02>, <G6>, and <G7> will still otherwise apply.

<T03> There are no time outs in Qualifying Matches; in the elimination rounds, each Alliance will be allotted ONE time out of no more than three (3) minutes, as permitted by the head referee. This time out may not be called during a Match. The Matches must progress according to schedule.

(new) <T05> Prior to the beginning of each Match, Drive Team Members must plug their VEXnet Joystick or V5 Controller into the VEXnet Field Controller’s Cat-5 cable via their controller’s competition port. This cable must remain plugged in for the duration of the Match, and may not be removed until the “all-clear” has been given for Drive Team Members to retrieve their Robots.

Note: The intent of this rule is to ensure that Robots abide by commands sent by tournament software. Temporarily removing the cable to assist with mid-Match troubleshooting, with an Event Partner or other event technical staff present and assisting, would not be considered a violation.
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Minor violations of these rules that do not affect the Match will result in a warning. **Match Affecting** offenses will result in a **Disqualification**. **Teams** that receive multiple warnings may also receive a **Disqualification** at the Head Referee's discretion.

**new** Field Modification: At the 2019 VEX Robotics World Championship, VEX EDR standoffs will be added to the bottom row of **Flags** to prevent them from over-rotating.

**new** Field Modification: At the 2019 VEX Robotics World Championship, the **Alliance Stations** will be moved 24” (0.61m) closer to the **Net**.
Section 4 – The Robot

The only allowable source(s) of electrical power are as follows:

b. If using a V5 Robot Brain, robots may use (1) V5 Robot Battery (276-4811).
   iii. V5 Wireless Controllers may only be powered by their internal rechargeable battery.
       1. Teams are permitted to have an external power source (such as a rechargeable battery pack) plugged into their V5 Controller during a Match, provided that this power source is connected safely and does not violate any other rules, such as <G7> or <R16>.

To participate in an official VEX Robotics Competition Tournament, a team must first register on www.robotevents.com. Teams that are not registered will not be eligible to compete.

b. The VRC License Plates are considered a non-functional decoration, and cannot be used as a functional part of the robot. As such, using a License Plate for a functional purpose, such as Toggling Flags, is not permitted.

e. Robots must use the colored plates that match their alliance color for each match (i.e. red alliance robots must have their red plates on for the match). It must be abundantly clear which color alliance the robot belongs to.
   i. If the plates are attached to opposite-color plates, then the incorrect color must be covered, taped over, or otherwise obscured to ensure that the correct alliance color is abundantly clear to Head Referees during a Match. Since License Plates are considered non-functional decorations, this is a legal non-functional use of tape.
Appendix B – Robot Skills Challenge

(new) Rule <SG3> does not apply in Programming Skills Matches. Robots are permitted to contact the foam tiles on the opposing Alliance’s side of the Autonomous Line, contact the opposing Alliance Platform, and become Center Parked.

Appendix E – VEX U

Teams are allowed to fabricate their own unique components from the following additional raw materials for each of their robots. These raw materials may be manipulated using techniques that may otherwise be prohibited in VRC, such as welding, brazing, and gluing.

Teams may use the following fasteners on their Robot:

a. Any commercially available #4, #6, #8, #10, M2, M2.5, M3, M4, or ¼-20 screw (of any length), and any commercially available nut, washer and/or spacer to fit these screws.

The VRC rule <SG2> applies in VEX U, adjusted for the starting height of each Robot (as defined in <VUR1>).

a. Robot A must return to 24” or smaller once it is no longer contacting the Expansion Zone.
b. Robot B must return to 15” or smaller once it is no longer contacting the Expansion Zone.
c. The 36” horizontal expansion limit applies to both Robots.
Division Elimination Matches (VRC and VEX U Divisions)

The VRC Middle School, VRC High School, and VEX U divisions at the 2019 VEX Robotics World Championship will have no changes to the tournament structure from the official Game Manual for a sixteen (16) Alliance bracket. The winning Alliance (or Team, in VEX U) will receive the title of “Division Champion”.

World Championship Finals (VRC and VEX U)

At the 2019 VEX Robotics World Championship, the Division Champions from each grade level will meet for the World Championship Finals matches.

- The two VRC Middle School Division Champion Alliances
- The two VRC High School Division Champion Alliances that score the highest in the Round Robin tournament
- The two VEX U Division Champions

In each of these two Finals matchups, the first Division Champion to win two Matches will receive the title of “World Champion”. Any tied matches will be replayed until one Alliance has two wins.
Upon completion of Division Elimination Matches at VEX Worlds 2019, the Alliance winners of each division will advance to the Round Robin tournament. The top two Alliances from the Round Robin will advance to compete for the title of “World Champion.” The Round Robin tournament will be conducted as follows:

- Alliances will be ranked based on W-L-T.
- Each of the 6 Alliances will play the other Alliances once (five matches per Alliance).
- There will be a total of 15 Round Robin Matches.
- There will be NO timeouts allowed during the Round-Robin matches.
- Round Robin matches will be played immediately following each other, so Teams should be prepared to have extra key items, like batteries, with them.
- During the Round Robin matches, the red Alliance will have the right to place its Robots on the field last. Once a Team has placed its Robot on the field, its position cannot be readjusted prior to the Match. A Team that violates this rule will have its Robots randomly repositioned by the referees.
- After the Round Robin, the top two ranked Alliances will move on to the World Championship Finals Matches.
- If there is a tie between two or more Alliances, the tiebreakers will be as follows:
  1. Head-to-head results between the two Alliances with the same record.
  2. Total points scored by an Alliance in their five Round-Robin Matches.
  3. Highest single Match score by an Alliance in their five Round Robin Matches.
  4. Total points scored against an Alliance in their five Round Robin Matches.
- The order of Matches for the competition will be as shown on the table at right.
- Referees have ultimate authority during the competition.
  - Their rulings are final.
  - The referees will not review any recorded replays.
- Any questions for the referees must be brought forward by a student Drive Team Member immediately after the score is announced for the Match.
- The only people from a Team permitted by the playing field are the three Drive Team members.

<table>
<thead>
<tr>
<th>Match #</th>
<th>Red Division Champion</th>
<th>Blue Division Champion</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Science</td>
<td>Technology</td>
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<tr>
<td>2</td>
<td>Research</td>
<td>Engineering</td>
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<tr>
<td>3</td>
<td>Art</td>
<td>Math</td>
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<tr>
<td>4</td>
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<td>7</td>
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<tr>
<td>8</td>
<td>Research</td>
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<td>9</td>
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<tr>
<td>10</td>
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<tr>
<td>15</td>
<td>Research</td>
<td>Art</td>
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</tbody>
</table>

Table 1: Order of Division pairings
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VRC (Middle and High School) and VEX U Skills Challenge Finals

When the Robot Skills Challenge fields close on Friday at 3:15 p.m., the top three ranked teams from each grade level will be invited to compete one more time in the Skills Challenge Finals in Freedom Hall.

The top three Middle School teams, top three High School teams, and top three VEX U teams will be notified by REC Foundation Staff and invited to Freedom Hall to compete.

These teams should report to the North Entrance of Freedom Hall by 4:30 p.m. to prepare for their Skills Challenges matches. The teams will then be directed to the "backstage" waiting area in the concourse/North Ramp of the arena where they should stay until the beginning of the Skills Challenge Finals. The ceremony will begin at 5:00 p.m.

The Skills Challenge Finals will consist of one final the Driving Skills Match. The Team’s Programming Skills Score that earned their rank will stand. However, the Team’s scores from the Driving Skills Challenge will be reset to zero, and teams will receive one final Driving Skills Match to set their score.

The highest combined score (from Programming Skills prior to 3:30 p.m. on Friday, and Driving Skills from Freedom Hall) will receive the title of “Robot Skills Challenge World Champion”.

If the final combined scores result in a tie, the two tied Teams will each play one additional Driving Skills Match at the same time to attempt to set a higher Driving Skills score. If the tiebreaker Match results in an additional tie, then the Teams will both receive the title of “Robot Skills Challenge World Champion”.

| Match Order in the VRC & VEX U Final Skills Challenge |
|-----------------|----------------------------------|
| Match 1         | Third Ranked VEX U Team          |
| Match 2         | Third Ranked VRC Middle School Team |
| Match 3         | Third Ranked VRC High School Team |
| Match 4         | SecondRanked VEXU Team           |
| Match 5         | Second Ranked VRC Middle School Team |
| Match 6         | Second Ranked VRC High School Team |
| Match 7         | First Ranked VEXU Team           |
| Match 8         | First Ranked VRC Middle School Team |
| Match 9         | First Ranked VRC High School Team |