Appendix B – The Robot Skills Challenge

## Overview

This section describes the new combined Robot Skills Challenge of *VEX Robotics Competition Starstruck.*

Please note that the Robot Skills Challenge may not be offered at all tournaments. Please check with your local event organizer, or www.robotevents.com *for more information.*

Robot Skills Challenge Description

In this challenge teams will compete in sixty (60) second long matches in an effort to score as many points as possible. These matches consist of *Driver Skills Matches,* which will be entirely driver controlled, and *Programing Skills Matches*, which will be autonomous with limited human interaction. Teams will be ranked based on their combined score in the two types of matches. The playing field will be set up similarly to that of a normal *VEX Robotics Competition Starstruck* tournament match, with the difference being that all *Scoring Objects* start on the same side of the field.
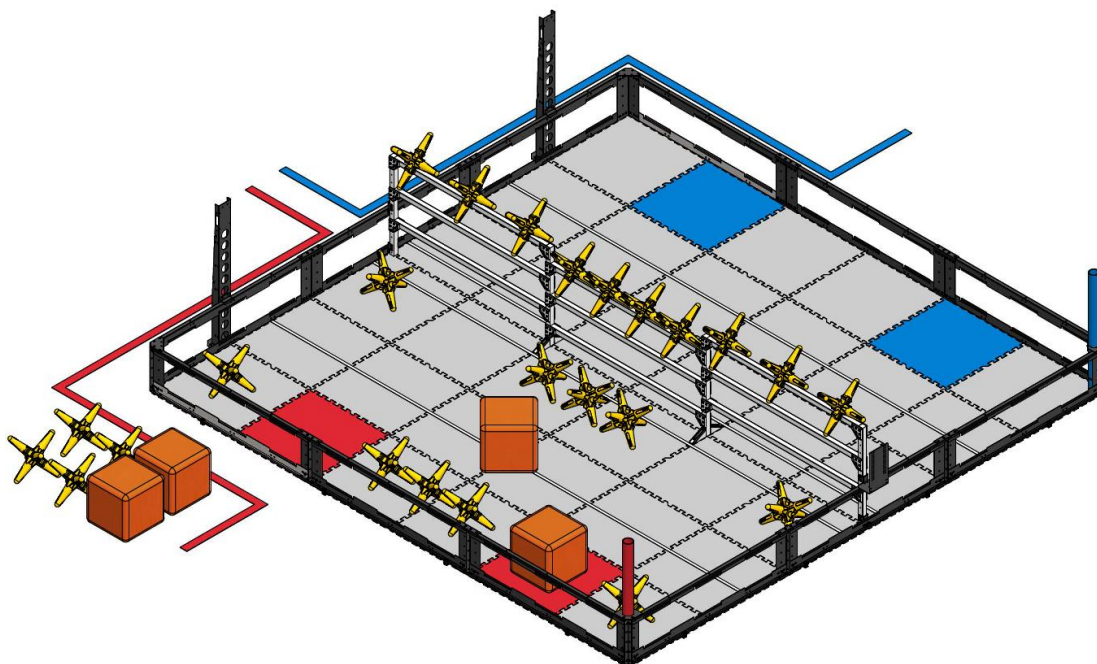
Note: Driver Skills Matches and the Programming Skills Matches use the same field setup!

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Robot Skills Challenge Definitions

Please note that all definitions from "The Game" section of the manual apply to the Robot Skills Challenge, unless otherwise specified.

Driver Skills Match – A *Robot Skills Match* consists of a sixty (60) second *Driver Controlled Period*. There is no *Autonomous Period*. Teams can elect to end their run early, however this will count as an official run.

Programming Skills Match – A *Programming Skills Match* consists of a sixty (60) second *Autonomous Period*. There is no *Driver Controlled Period*. Teams can elect to end their run early, however this will count as an official run.

Skills Loads – The three (3) Stars and two (2) *Cubes* that *Student Drive Team Members* may load onto the *Alliance Station Alliance Starting Tile* or into their *Robot* at any point during a *Skills Match*.

Skills Preload – The one (1) *Star* each team may place on the field such they are touching its *Robot*, not touching any grey foam tiles, and fully within the field perimeter prior to each *Skills Match*.

Skills Match – A *Driver Skills Match* or *Programming Skills Match*

Robot Skills Challenge Rules

Please note that all rules from "The Game" section of the manual apply to the Robot Skills Challenge, unless otherwise specified.

<RSC1> At the beginning of each *Skills Match*, the *Robot* must be placed such that it is touching the *Alliance Station Alliance Starting Tile*, not touching any *Scoring Objects* other than those permitted by <RSC2>, and not touching any other foam field tiles.

<RSC2> Prior to the start of each *Skills Match*, each *Robot* must use its one (1) *Star* available as a *Skills Preload*. A *Star* is considered to be legally preloaded if it is touching the *Robot,* not touching any other grey foam tiles*,* and is fully within the field perimeter.

<RSC3> *Skills Loads* may be loaded at any point during a *Skills Match*.

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Robot Skills Challenge Scoring

All scoring is the same as in a regular *VEX Robotics Competition Starstruck* match.

- A *Star Scored* in the opposing *Near Zone* is worth one (1) point.
- A *Star Scored* in the opposing *Far Zone* is worth two (2) points.
- A *Cube Scored* in the opposing *Near Zone* is worth two (2) points.
- A *Cube Scored* in the opposing *Far Zone* is worth four (4) points.
- A *Robot* that is *Low Hanging* is worth four (4) points.
- A *Robot* that is *High Hanging* is worth twelve (12) points.

Robot Skills Challenge Format

- The Robot Skills Challenge is an optional event. Teams who do not compete will not be penalized in either the main tournament.
- Teams will play *Skills Matches* on a "first come, first serve" basis, or by a method determined by the event.
- Teams will be guaranteed a minimum equal number of both types of *Skills Matches*, to be determined by the event organizers
- Teams may also be limited to a maximum equal number of both types *Skills Matches*, to be determined by the event organizers

Robot Skills Challenge Rankings

- For each *Skills Match* teams are awarded a score based on the above scoring rules.
- Teams will be ranked based on the sum of their highest *Programming Skills Match* score and *Driver Skills Match* score, with the team with the highest sum being declared the *Robot Skills Challenge* Winner
- In the case where two teams are tied for the highest score, the tie will be broken by looking at both teams' next highest *Programming Skills Match* score. If the teams remain tied, the tie will be broken by looking at both teams' next highest *Driver Skills Match* score. This process will repeat until the tie is broken
- If the tie cannot be broken (i.e. both teams have the exact same scores for each *Programming Skills Match* and *Driver Skills Match*), the next tie-breakers will be based on the following criteria in each team's highest scoring *Programming Skills Match*.
  - Number of points for *High Hanging*
  - Number of points for *Low Hanging*
  - Number of points for *Cubes*
- If the tie still cannot be broken, the same process in the step above will be applied to the teams' highest *Driver Skills Match*
- If the tie still isn't broken, events may choose to allow teams to have one more deciding match or both teams will be declared the winner

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