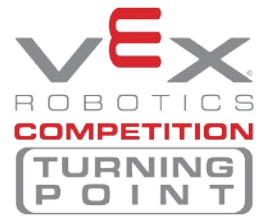


# Appendix B – The Robot Skills Challenge



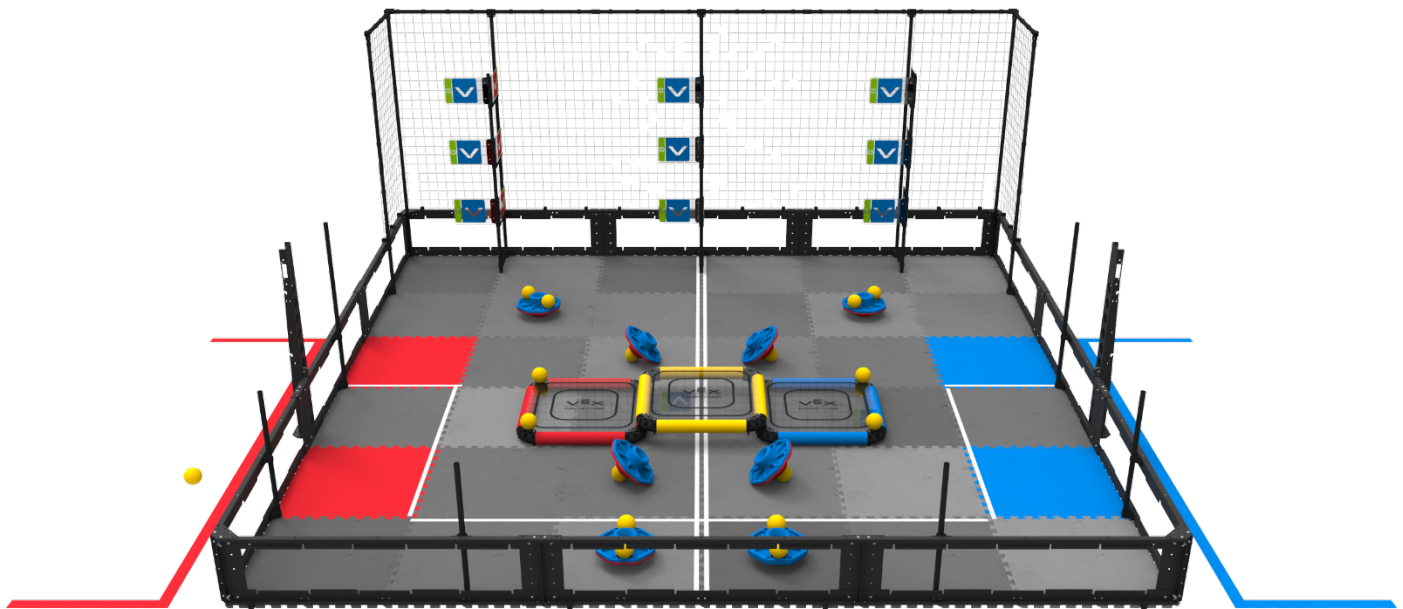
## Overview

This section describes the combined Robot Skills Challenge rules for *VEX Robotics Competition Turning Point*.

Please note that the Robot Skills Challenge may not be offered at all tournaments. Please check with your local Event Partner or [www.robotevents.com](http://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 *Driving Skills Matches*, which will be entirely driver controlled, and *Programming 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 Turning Point* match, with some modifications (see <RSC3>).



VEX Robotics Competition Turning Point Skills Challenge setup, per <RSC3>. Note that Driving 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.

*Driving Skills Match* – A *Driving 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.

*Robot Skills Preload* – The one (1) *Ball* that must be placed on the field such it satisfies the following conditions, as per <RSC2>, at the start of the *Skills Match*:

- The *Robot Skills Preload* is touching the *Robot*.
- The *Robot Skills Preload* is fully within the field perimeter.

*Robot Skills Match* – A *Driving 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 *Robot Skills Match*, the *Robot* must be placed such that it is:

1. Touching an *Alliance Starting Tile*. Teams may elect to start in either color *Alliance Starting Tile*. However, *Drive Team Members* must remain in the *Alliance Station* that corresponds to the *Alliance Starting Tile* in which their *Robot* started the *Match*.
2. Not touching any other foam field tiles or Game Objects that are not the *Robot Skills Preload*.
3. *Preloaded* with one (1) *Ball*, per <RSC2>.

<RSC2> Prior to the start of each *Robot Skills Match*, the *Robot* must use its one (1) *Ball* available as a *Preload*. A *Ball* is considered to be legally preloaded if it is touching the *Robot*, and is fully within the field perimeter. The other three (3) *Preload Balls* are not used in a *Robot Skills Match*.

<RSC3> In a *Robot Skills Match*, all *Flags* begin the *Match Toggled* for the blue *Alliance*, and all *Caps* start with the blue side facing upwards. A *Team’s* score for their *Robot Skills Match* will be determined by how many points are scored for the red *Alliance* at the end of the *Match*, i.e. how many *Flags* are *Toggled* to red, how many *Caps* are placed “red-up”, if the *Robot* is *Alliance Parked* on the red *Alliance Platform*, etc.

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## Robot Skills Challenge Scoring

Most scoring is the same as in a regular *VEX Robotics Competition Turning Point* match. As noted in <RSC3>, scores for *Flags*, *Caps*, and *Alliance Platforms* are assigned as though the *Robot* is playing on the red *Alliance*.

- A *Toggled High Flag* is worth two (2) points.
- A *Toggled Low Flag* is worth one (1) point.
- A *High Scored Cap* is worth two (2) points.
- A *Low Scored Cap* is worth one (1) point.
- A *Robot* which is *Alliance Parked* earns three (3) points.
- A *Robot* which is *Center Parked* earns six (6) points.

## Robot Skills Challenge Rankings

- For each *Robot 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 *Driving 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 *Driving 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 *Driving Skills Match*), then the following ordered criteria will be used to determine which team had the "best" *Programming Skills Match*.
  1. Number of points for *Toggled High Flags*.
  2. Number of points for *High Scored Caps*.
  3. Number of points for *Center Parking*.
  4. Number of points for *Alliance Parking*.
  5. Number of points for *Low Scored Caps*.
  6. Number of points for *Low Scored Flags*.
- If the tie still cannot be broken, the same process in the step above will be applied to the teams' best *Driving Skills Match*.
- If the tie still isn't broken, events may choose to allow teams to have one more deciding match, or declare both teams the winner.

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## Robot Skills Challenge Format

- The Robot Skills Challenge is an optional event. Teams who do not compete will not be penalized in 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*, as determined by the event organizers.
- Teams may also be limited to a maximum equal number of both types *Skills Matches*, as determined by the event organizers.