Skills Ontario - VEX IQ Robotics Challenge 2021

Game Description

Matches are played on a Field set up as illustrated in the figures throughout. The Robot Skills Challenge, one (1) Robot attempts 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. The object of the game is to attain the highest score by Scoring and Stacking Risers in Goals, Completing Rows, and Completing Stacks

Each VEX IQ Challenge Rise Above Match includes the following game elements:

- Twenty-seven (27) Risers
- Nine (9) Orange Risers
- Nine (9) Purple Risers
- Nine (9) Teal Risers

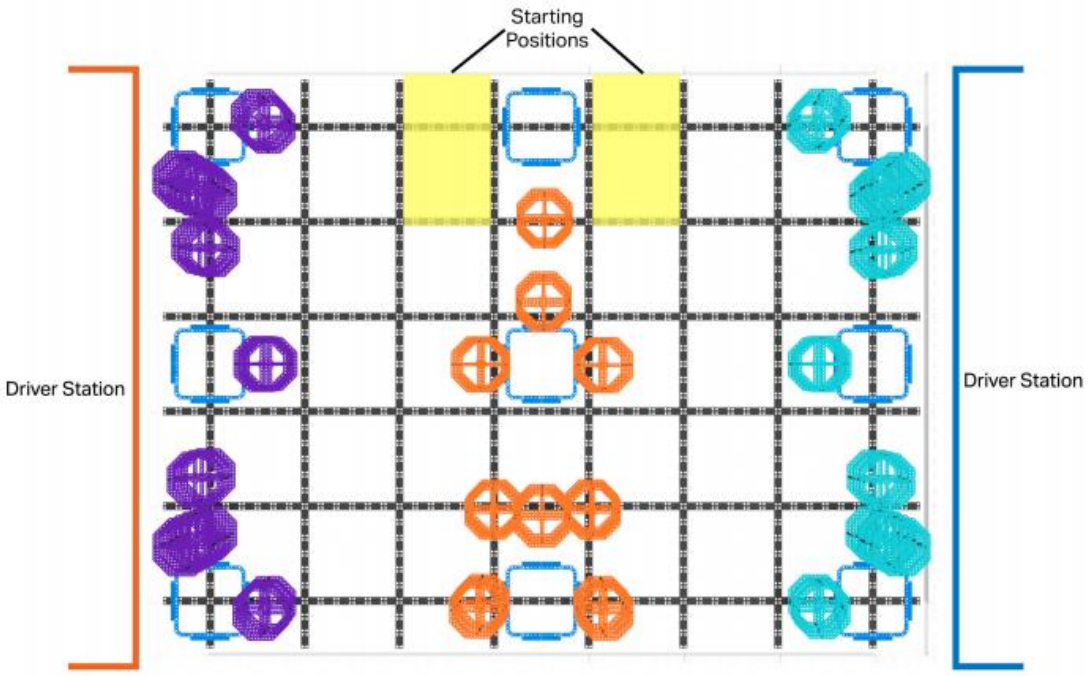


*Figure 3: Overhead view of the **Field** for a Robot Skills Match. The **Robot Starting Positions** are highlighted.*

Game Definitions

Adult – Anyone who is not a Student.

Autonomous – A Robot that is operating and reacting only to sensor inputs and to commands pre-programmed by the Students into the Robot control system. The Robot is operating without input from a VEX IQ Controller.

Builder– The Student(s) on the team who assemble(s) the Robot. An Adult cannot be the Builder on a Team. Adults are permitted to teach the Builder associated concepts but may never be working on the Robot without the Builder present and actively participating.

Completed Row – A Row Status. A Completed Row is when all three (3) Goals in the Row have at least one Scored Riser and all Scored Risers in the Row are of uniform color.

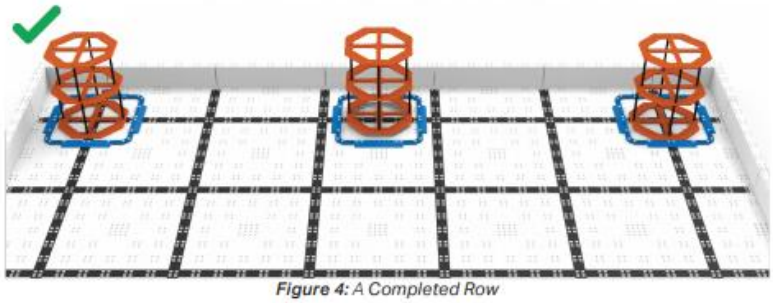


Figure 4: A Completed Row

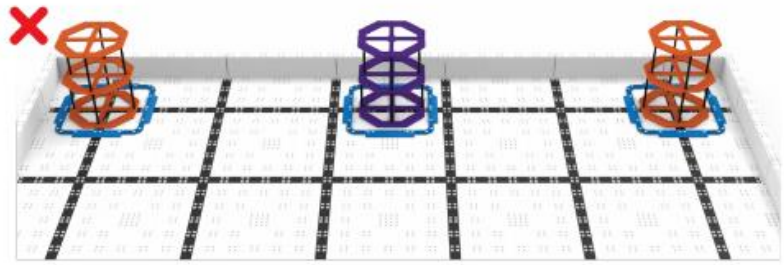


Figure 5: A Non-Completed Row

Completed Stack - A Goal Status. A Completed Stack is when the Goal is part of a Completed Row and has exactly three (3) Scored Risers. Each Goal can only count as one (1) Completed Stack.

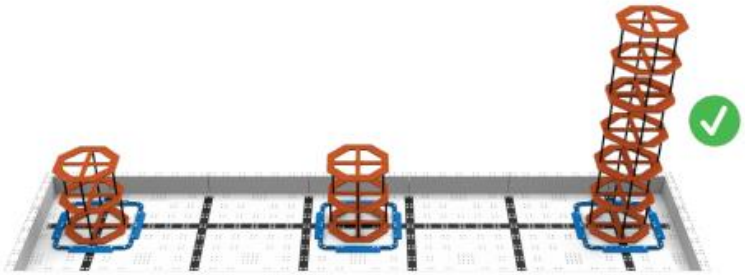


Figure 6: A Completed Stack

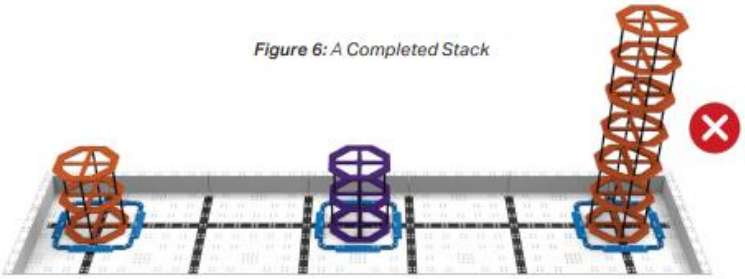


Figure 7: A Non-Completed Stack and a Non-Completed Row

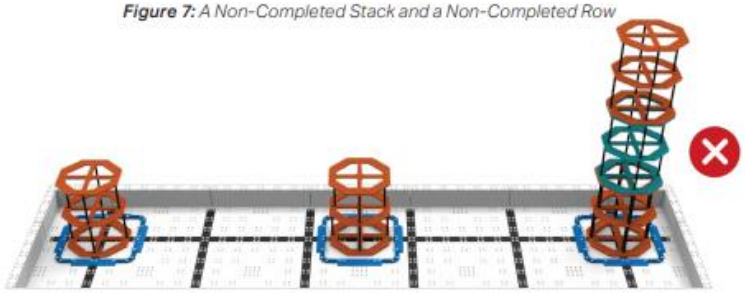


Figure 8: A Non-Completed Stack and a Non-Completed Row

Designer – The Student(s) on the Team who design(s) the Robot to be built for competition. An Adult cannot be the Designer on a Team. Adults are permitted to teach the Designer associated concepts, but may never be working on the design of the Robot without the Designer present and actively participating.

Disablement – A penalty applied to a Team for a rule violation. During Disablement, a Team is no longer allowed to operate their Robot, and the Drivers will be asked to place their Controller on the ground. A Disablement is not the same as a Disqualification.

Disqualification – A penalty applied to a Team for a rule violation (see <T11> for more details). If a Team is Disqualified in a Match, the Head Referee will notify the Team of their violation at the end of the Match.

At the Head Referee's discretion, repeated violations and Disqualifications for a single Team may lead to its Disqualification for the entire event.

Driver – The Student Team member who stands in the Driver Station and is responsible for operating and controlling that Team's Robot. Up to two Team members may fulfill this role in a given Match.

Driver Controlled – A Robot operating under the control of a Driver.

Driver Station – The regions on each end of the Field, where the Drivers must remain during their Match unless legally interacting with their Robot.

Field – The entire playing Field, being six (6) field tiles wide by eight (8) field tiles long totalling forty-eight (48) field tiles, surrounded by the field perimeter consisting of four (4) outside corners and twenty-four (24) straight sections.

Field Element – The field perimeter, Floor, and VEX IQ elements attached to the Field.

Floor – The interior part of the playing Field made up of the field tiles that is within the field perimeter.

Goal – One of the nine (9) 3-dimensional volumes extending upwards from the Floor that are used to Score Risers. The blue VEX IQ elements form a perimeter around the base of each Goal. The VEX IQ elements are not considered part of the Goal.

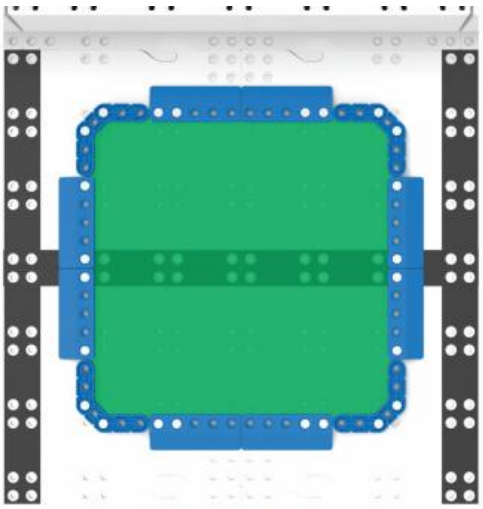


Figure 9: A VIQC Rise Above Goal

Match – A Driving Skills Match or Programming Skills Match.

- **Driving Skills Match** – A Driver Controlled period that is sixty seconds (1:00) long with only one (1) Robot on the Field.
- **Programming Skills Match** – An Autonomous period that is sixty seconds (1:00) long with only one (1) Robot on the Field.
- **Skills Match** – A Driving Skills Match or Programming Skills Match.

Programmer – The Student(s) on the Team who write(s) the computer code that is downloaded onto the Robot. An Adult cannot be the Programmer on a Team. Adults are permitted to teach the Programmer associated concepts but may never be working on the code that goes on the Robot without the Programmer present and actively participating.

Riser – An orange, purple or teal right octagonal prism with a width of 7” (177.8mm) and a height 8.75” (222.25mm).

Figure 10: A VIQC Rise Above Riser

Robot – A machine that has passed inspection, designed to execute one or more tasks autonomously and/or by remote control from a human operator.

Row - Three (3) Goals that make up a straight line. There are a total of eight (8) Rows

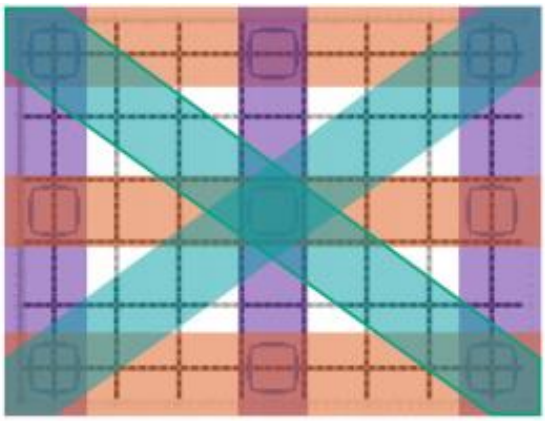


Figure 11: The eight Row combinations in VIQC Rise Above.

Scored – A Riser status. A Riser is Scored at the end of the Match if it is not touching a Robot and meets the criteria of being either a Base Riser or a Stacked Riser.

• Base Riser - A Riser status. A Riser is considered a Base Riser if it meets the following criteria at the end of the Match.

1. Contacting the Floor within the Goal.
2. The octagonal faces are parallel with the Floor, i.e. the Riser is upright and not sitting on top of the VEX IQ elements surrounding the base of the Goal.
3. Not contacting the Floor outside of the Goal.

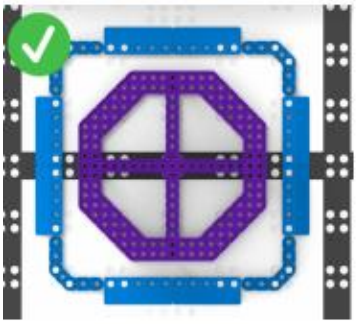


Figure 12: A Scored Base Riser.

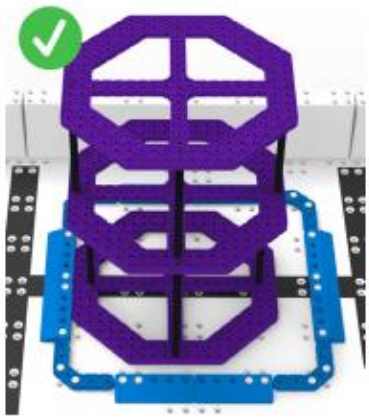


Figure 13: Scored due to the Riser being fully flush with the Goal and not sitting on top of the elements surrounding the Goal.

Figure 14: This Riser is sitting on top of the elements that make up the Goal. It would not be considered Scored.

• **Stacked Riser - A Riser status**. A Riser is considered a Stacked Riser if it meets the following criteria at the end of the Match.

1. The octagonal faces are parallel with the Floor, i.e. the Riser is upright.
2. The bottom octagonal face is contacting the top octagonal face of a Base Riser or a Stacked Riser. For the purposes of this definition, "top" refers to the octagonal face furthest from the Floor, and "bottom" refers to the octagonal face closest to the Floor.

Note: Each Goal may only contain up to three (3) Scored Risers, up to one (1) Base Riser and (2) Stacked Risers.

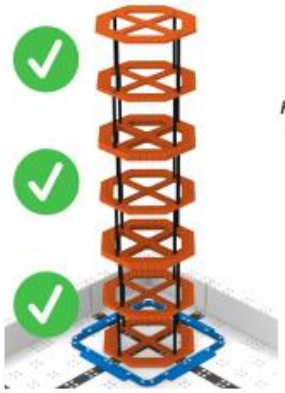


Figure 15: These Risers are upright and in contact with a Scored Base Riser. All three Risers would be considered Scored and would be eligible for a Completed Stack.

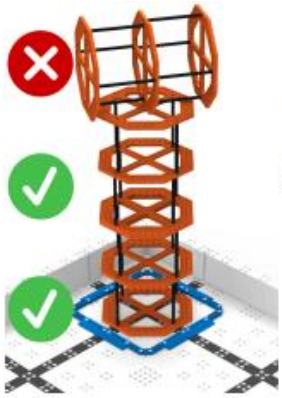


Figure 16: The top Riser is not upright, and would not be considered Scored. Only the two lower Risers would be considered Scored. This would not be eligible for a Completed Stack.

Starting Positions – The two (2) designated 11" x 19" (279.4mm x 482.6mm) volumes of the Field where Robots must start the Match. Starting Positions are bounded by the inner edges of the long black lines, outer edge of the short black line, and the inner edge of the field perimeter. See Figure 3 for more details.

Scoring

- A Base Riser is worth one (1) point.
- A Stacked Riser is worth one (1) point.
- A Completed Row is worth three (3) points.
- A Completed Stack is worth thirty (30) points

General Game Rules

G1 -Treat everyone with respect. All Students and Adults associated with a Team are expected to conduct themselves in a respectful and positive manner while participating in the VEX IQ Challenge. If Team members are disrespectful or uncivil to staff, volunteers, or fellow Teams at an event, the Team may be Disqualified from their current or upcoming Match. Judges may also consider team conduct and ethics when determining awards.

In all aspects of the VEX IQ Challenge program, the Students make the decisions and do the work with Adult mentorship. The VEX community prides itself on being a positive learning environment where no one is bullied, harassed, or berated. Teams avoid placing unnecessary stress upon Students and/or event volunteers; instead, challenging situations are viewed as teachable moments to model positive behaviors and good sportsmanship.

This rule exists alongside the REC Foundation Code of Conduct. Violation of the Code of Conduct can be considered a violation of and can result in Disqualification from a current Match, an upcoming Match, an entire event, or (in extreme cases) an entire competition season. The Code of Conduct can be found at http://link.roboticseducation.org/recf_codeofconduct

For the 2020-2021 season, some events may establish additional Health & Safety guidelines beyond the scope of this Game Manual. These guidelines will be communicated to all Teams in advance via Health & Safety notes associated with the event registration in RobotEvents. All Teams (including Students or any Adults associated with the Team) must abide by these guidelines as written. Violation of an event-specific Health & Safety rule may be considered a violation of G1 and/or the REC Foundation Code of Conduct.

G2 - VEX IQ is a student-centered program. Adults may assist Students in urgent situations, but Adults may never work on or program a Robot without Students on that Team being present and actively participating. Students must be prepared to demonstrate an active understanding of their Robot's construction and programming to judges or event staff.

Some amount of Adult mentorship, teaching, and/or guidance is an expected and encouraged facet of the VEX IQ Challenge. No one is born an expert in robotics! However, obstacles should always be viewed as teaching opportunities, not tasks for an Adult to solve without Students present and actively participating.

When a mechanism falls off, it is… …okay for an Adult to help a Student investigate why it failed, so it can be improved. …not okay for an Adult to put the Robot back together. When a Team encounters a complex programming concept, it is… …okay for an Adult to guide a Student through a flowchart to understand its logic. …not okay for an Adult to write a pre-made command for that Student to copy/paste.

During Match play, it is… …okay for an Adult to provide cheerful, positive encouragement as a spectator. …not okay for an Adult to explicitly shout step-by-step commands from the audience.

This rule operates in tandem with the REC Foundation Student Centered Policy, which is available on the REC Foundation website for Teams to reference throughout the season: https://www.roboticseducation.org/documents/2019/08/student-centered-policy-rec-foundation.pdf/

Violation of this rule could be considered a violation of and/or the REC Foundation Code of Conduct.

G3- Use common sense. When reading and applying the various rules in this document, please remember that common sense always applies in the VEX IQ Challenge.

G4 - Pre-match setup. At the beginning of a Match, each Robot must meet the following criteria:

1. Only be contacting the Floor and/or the field perimeter.
2. Fit within an 11" x 19" (279.4mm x 482.6mm) area, bounded by the Starting Positions.
3. Be no taller than 15" from the Floor.

An offending Robot will be removed from the Match at the Head Referee's discretion. They will not receive a Disqualification, but they will not be permitted to play in the Match.

G5 - The Robot must represent the skill level of the Team. Each Team must include Drivers, Programmer(s), Designer(s), and Builder(s). No Student may fulfill any of these roles for more than one VEX IQ Challenge Team in a given competition season. Students may have more than one role on the team, e.g. the Designer can also be the Builder, the Programmer and a Driver.

a. Team members may move from one Team to another for non-strategic reasons outside of the Team's control.
    i. Examples of permissible moves may include, but are not limited to, illness, changing schools, conflicts within a Team, or combining / splitting Teams.
    ii. Examples of strategic moves in violation of this rule may include, but are not limited to, one Programmer "switching" Teams in order to write the same program for multiple Robots, or one Student writing the Engineering Notebook for multiple Teams.
    iii. If a Student leaves a Team to join another Team, G5 still applies to the Students remaining on the previous Team. For example, if a Programmer leaves a Team, then that Team's Robot must still represent the skill level of the Team without that Student. One way to accomplish this would be to ensure that the Programmer teaches or trains a "replacement" Programmer in their absence.

b. Within a single event, a Driver may only drive for one (1) Team. If a Team attends an event with only one (1) Driver in attendance, then that Team is granted an allowance to use another qualified Driver from the Event. This substitute Driver is given an exemption for this event and may only Drive for this one Team at that event. Once the event is over, the substitute Driver will go back to his or her original Team. This exception is only granted if a Team has one (1) Driver in attendance due to reasons outside of the Team's control, such as illness.

G6 - Be prepared to play. Teams must be prepared to play when they bring their Robots to the Field. For example, Teams must ensure that their batteries are charged and their VEX IQ Controller is paired with their Robot before placing the Robot on the Field.

G7 – This text has been removed as it is not relevant for the 2021 SOC virtual Challenge.

G8 - Drivers drive your Robot, and stay in the Driver Station. During a Match, Robots may only be operated by that Team's Drivers. Drivers must remain in their Driver Station, except when legally interacting with their Robot as per G17 . Drivers are not allowed to use any communication devices while in the Driver Station. Devices with communication features turned off (e.g. a phone in airplane mode) are allowed.

G9 - Hands out of the Field. Drivers are prohibited from making intentional contact with any Field Element, Riser, or Robots during a Match, except for the allowances in G17.
Note: Accidental contact may result in a warning, Disqualification, or Disablement at the Head Referee's discretion.

G10 - Keep Risers in the Field. Risers that leave the Field during a Match will not be returned. "Leaving the Field" means that a Riser is outside of the Field Perimeter and no longer in contact with the Field, Field Elements, other Risers, or Robots.

If a Riser is on its way out of the Field (as determined by the Head Referee), but is deflected back into the field by a Driver, field monitor, ceiling/wall, or other external factor, G10 would apply. This Riser should be considered "out of the field" and removed by the Head Referee.

G11 - When it's over, it's over. Scores will be calculated for all Matches immediately after the Match is complete, and once all Robots and Risers on the Field come to rest.

G12 - Keep your Robot together. Robots may not intentionally detach parts or leave mechanisms on the Field during any Match. If an intentionally detached component or mechanism affects game play, the Team may be Disqualified at the Head Referee's discretion. Parts that become unintentionally detached from the Robot are no longer considered to be part of the Robot and can be either left on the Field, or collected by a Driver (utilizing G17).

G13 - Don't damage the Field or Risers. Robots may not grasp, grapple, or attach to any Field Elements. Strategies with mechanisms that react against multiple sides of a Field Element in an effort to latch or clamp onto said Field Element are prohibited. While Robots are permitted to grasp, grapple, or attach to Risers, Robots which cause damage to Risers would be considered in violation of this rule.

G14 - Let go of Risers after the Match is over. Robots must be designed to permit easy removal of Risers from their Robot without requiring that the Robot have power or remote control after the Match is over.

G15 - Be prepared for minor field variance. Field tolerances may vary by as much as ±1" unless otherwise specified. Teams must design Robots accordingly.

G16 - This text has been removed as it is not relevant for the 2021 SOC virtual Challenge.

G17 - Handling the Robot mid-match is allowed under certain circumstances. If a Robot goes completely outside the playing Field, gets stuck, tips over, or otherwise requires assistance, the Team's Drivers may retrieve & reset the Robot. To do so, they must:

1. Signal the Referee by placing their VEX IQ Controller on the ground.

2. Move the Robot to any legal Starting Position.
3. Any Risers being controlled by the Robot while being handled must be removed from the Field. In the context of this rule, “controlled” implies that the Robot was manipulating the Riser and not simply touching it. For example, if the Riser moves with the Robot either vertically or while turning, then the Robot is controlling the Riser.
4. Any Risers in the Starting Positions where the Robot is being placed must be removed from the Field.

If the Drivers cannot reach the Robot due to the Robot being in the center of the field, the Drivers may ask the referee to pick up the Robot and hand it to the Drivers for placement according to the conditions above.

The Robot

Every Robot must pass a full inspection before being cleared to participate in the Challenge. This inspection will ensure that all Robot rules and regulations are met. Initial inspections will typically take place during Team registration/practice time. Every Team should use the rules below as a guide to pre-inspect their Robot and ensure that it meets all requirements

Inspection Rules

R1 - One Robot per Team. Only one (1) Robot will be allowed to participate per Team at a given event. Though it is expected that Teams will make changes to their Robots at the event, a Team is limited to only one (1) Robot, and a given Robot may only be used by (1) Team. The VEX IQ system is intended to be a mobile robotics design platform. As such, a VEX IQ Challenge Robot, for the purposes of the VEX IQ Challenge, has the following subsystems:

- Subsystem 1: Mobile robotic base including wheels, tracks, or any other mechanism that allows the Robot to navigate the majority of the flat playing Field surface. For a stationary Robot, the robotic base without wheels would be considered Subsystem 1.
- Subsystem 2: Power and control system that includes a VEX IQ legal battery, a VEX IQ control system, and associated Smart Motors for the mobile robotic base.
- Subsystem 3: Additional mechanisms (and associated Smart Motors) that allow manipulation of Risers or navigation of Field obstacles.

Given the above definitions, a minimum Robot for use in any VEX IQ Challenge event (including Skills Challenges) must consist of subsystem 1 and 2 above. Thus, if you are swapping out an entire sub-system of either item 1 or 2, you have now created a second Robot and are no longer legal.

a. Teams may not participate with one Robot while a second is being modified or assembled.

b. Teams may not switch between multiple Robots. This includes using different robots for Skills Challenge and Qualification / Elimination Matches.

c. Multiple Teams may not use the same Robot during a competition or season. Once a Robot has competed under a given Team number at an event, it is “their” Robot - no other Team may compete with it for the duration of the competition season.

d. Robots which have not passed inspection (i.e. who are in violation of one or more Robots rules) will not be permitted to play in any Matches until they have done so. will apply to any Matches that occur until the Robot has passed inspection.

e. If a Robot has passed inspection, but is later found to be in violation of a Robot rule during a Match, then they will be Disqualified from that Match and will apply until the violation is remedied and the Team is re-inspected

R2 - Robots must be a representation of the skill level of the team. The Robot must be designed, built and programmed by members of the Team. Adults are permitted to mentor and teach design, building and programming skills to the Students on the Team, but may not design, build or program that team's Robot.

In VIQC, we expect Adults to teach different linkages, drive-trains, and manipulator applications to the Students, then allow the Students to determine which designs to implement and build on their Robot. Adults are encouraged to teach the Students how to code various functions involving applicable sensors, then have the Students program the Robot from what they have learned.

R3 & R4 - This text has been removed as it is not relevant for the 2021 SOC virtual Challenge.

R5 - Starting configuration. At the start of each Match, the Robot must be able to satisfy the following constraints:

a. Only be contacting the Floor and/or the Field Perimeter.
b. Fit within an 11" x 19" (279.4mm x 482.6mm) area, bounded by the Starting Positions.
c. Be no taller than 15" from the Floor.

R6 - The starting configuration will be inspected. The starting configuration of the Robot at the beginning of a Match must be the same as a Robot configuration inspected for compliance, and within the maximum allowed size.

a. Teams using more than one Robot configuration at the beginning of Matches must tell the Inspector(s) and have the Robot inspected in its largest configuration(s).
b. A Team may NOT have its Robot inspected in one configuration and then place it in an uninspected configuration at the start of a Match.

R7 - VEX IQ product line. Robots may be built ONLY from Official Robot Components from the VEX IQ product line, unless otherwise specifically noted within these rules.

a. Official VEX IQ products are ONLY available from VEX Robotics & official VEX Resellers. To determine whether a product is "official" or not, consult www.idesignsol.com .
b. If an Inspector or event official questions whether something is an official VEX IQ component, the Team will be required to provide documentation to an Inspector that proves the component's source. Such types of documentation include receipts, part numbers, or other printed documentation.
c. Only the VEX IQ components specifically designed for use in Robot construction are allowed. Using additional components outside their typical purpose is against the intent of the rule (i.e. please don't try using VEX IQ apparel, team or event support materials, packaging, Field Elements, or other non-robot products on a VEX IQ Challenge Robot).

d. Products from the VEX V5, Cortex, or VEXpro product line cannot be used for Robot construction. Products from the VEX product line that are also cross-listed as part of the VEX IQ product line are legal. A “cross-listed” product is one which can be found in both the VEX IQ and VEX V5 sections of the VEX Robotics website.
e. Mechanical/structural components from the VEX Robotics by HEXBUG product line are legal for Robot construction. However, electrical components from the VEX Robotics by HEXBUG product line are illegal for Robot construction.
f. Mechanical/structural components from the VEX GO product line are legal for Robot construction. However, electrical components from the VEX GO product line are illegal for Robot construction.
g. Official Robotics Components from the VEX IQ product line that have been discontinued are still legal for Robot use. However, Teams must be aware of R7b.
h. 3D printed components, such as replicas of legal VEX IQ parts or custom designs, are not legal for Robot use.
i. Additional VEX IQ products that are released during the season are legal for use.

R8 - Non-VEX IQ components. Robots are allowed to use the following additional “non-VEX IQ” components:

a. Appropriate non-functional decorations, provided that these do not affect the Robot performance in any significant way or affect the outcome of the Match. These decorations must be in the spirit of the event. Inspectors will have the final say in what is considered “nonfunctional”.
b. Any decorations must be backed by legal materials that provide the same functionality, (i.e. if your Robot has a giant decal that prevents Risers from falling out of the Robot, the decal must be backed by VEX IQ material that also prevents the Risers from falling out).
    i. ii. The use of non-toxic paint is considered a legal non-functional decoration. However, any paint being used as an adhesive or to impact how tightly parts fit together would be classified as functional.
c. Rubber bands that are identical in length and thickness to those included in the VEX IQ product line (#32 & #64).
d. ⅛” metal shafts from the VEX V5 product line.

R9 - Microcontroller. Robots are limited to ONE (1) VEX IQ Robot Brain.

a. Robot Brains, microcontrollers, or other electronic components that are part of the VEX Robotics by HEXBUG, VEX GO, VEX V5, VEX 123, or VEXpro product lines are not allowed i. The Robot AA Battery Holder (228-3493) is the only exception to this rule, per
b. Robots must use one (1) VEX IQ 900 MHz radio, VEX IQ 2.4 GHz radio, or VEX IQ Smart Radio in conjunction with their VEX IQ Robot Brain.
c. The only legal method of driving the Robot during Teamwork Matches and Driving Skills Matches is the VEX IQ Controller.

R10 - Motors. Robots may use up to six (6) VEX IQ Smart Motors. a. Additional motors cannot be used on the Robot (even ones that aren’t connected).

R11 - Batteries. The only allowable sources of electrical power for a VEX IQ Challenge Robot is one (1) VEX IQ Robot Battery or six (6) AA batteries via the Robot AA Battery Holder (228-3493).

a. Additional batteries cannot be used on the Robot (even ones that aren’t connected).

b. Teams are permitted to have an external power source (such as a rechargeable battery pack) plugged into their VEX IQ Controller during a Match, provided that this power source is connected safely and does not violate any other rules (such asG6).

R12 - This text has been removed as it is not relevant for the 2021 SOC virtual Challenge.

R13 - Modifications of parts. Parts may NOT be modified. Examples of modifications include, but are not limited to, bending, cutting, sanding, gluing, or melting.

a. Cutting metal VEX IQ or VEX V5 shafts to custom lengths is permitted. This is the only legal exception to this rule.

Teams should remember to prioritize student safety at all times if attempting to cut metal shafts. Adult assistance in the spirit of G2 is a must-have, and sharp edges must be sanded or otherwise rounded off.

R14 - Prohibited items. The following types of mechanisms and components are NOT allowed:

a. Those that could potentially damage Field Elements or Risers.
b. Those that could potentially damage other Robots.
c. Those that pose an unnecessary risk of entanglement.

Skills Challenge Rules

Standard rules apply in most cases. All rules and scoring from previous sections apply to the Skills Matches, unless otherwise specified.

Skills Field Layout. For each Skills Match, the Field will be setup as shown in the diagram below. All of the Goals are in the same locations and only the Risers have been rearranged on the Field.

Note: Some Risers (highlighted below) will start Skills Matches while resting on top of the VEX IQ pieces that make up a Goal. This applies to (5) Orange Risers, (3) Teal Risers, and (3) Purple Risers).

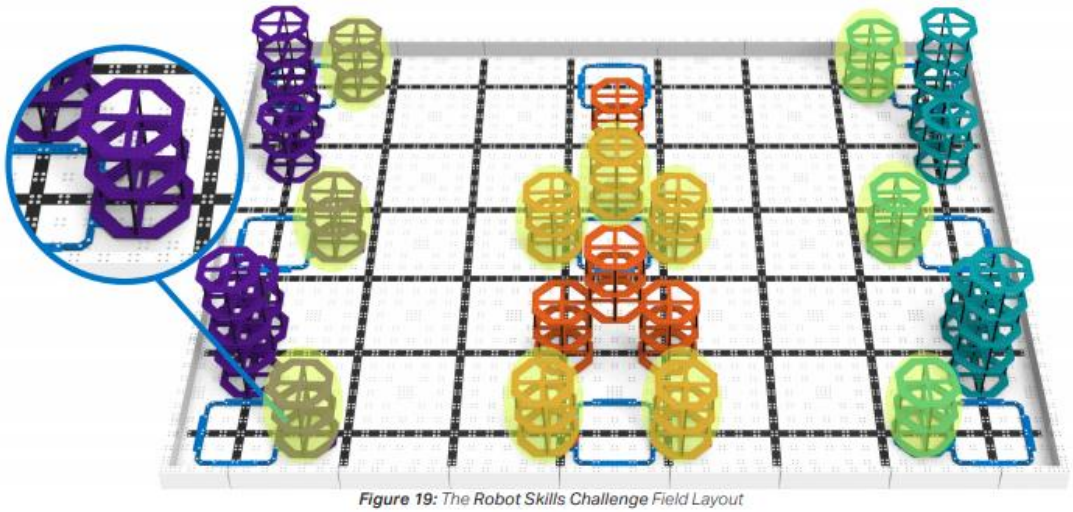


Figure 19: The Robot Skills Challenge Field Layout

Skills Scoring and Ranking at events. For each Skills Match, Teams are awarded a score based on the standard rules and scoring rules. Team will be ranked based on the sum of their highest Programming Skills Match score and highest Driving Skills Match score.

a. If two Teams are tied for the highest score, the tie will be broken by looking at both Team's' next highest Programming Skills Match score. If the Teams remain tied, the tie will be broken by looking at both Team's' next highest Driving Skills Match score. This process will repeat until the tie is broken. If a Team only plays one or two (1 or 2) of their available Programming or Driving Skills Matches, their score for the unattempted Match(es) will be considered a score of zero (0) when determining the winner of ties.
b. 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:
    i. Points for Completed Stacks in highest Programming Skills Match
    ii. Points for Completed Rows in highest Programming Skills Match
    iii. Points for Completed Stacks in highest Driving Skills Match
    iv. Points for Completed Rows in highest Driving Skills Match
c. If the tie still cannot be broken, the same process in the step above will be applied to the Team's highest Driving Skills Match.

d. If the tie still isn't broken, the Event Partner may choose to allow Teams to have one more deciding Match, or both Teams may be declared the winner.

Skills Starting Positions. During Skills Matches, Robots may be placed in either of the two (2) Starting Positions on the Field.

Skills Match Schedule. All Matches will start at the same time. Teams unable to start in time will not get an opportunity to reply the match. No submission of results needed.

Handling Robots during a Programming Skills Match. A Team may handle their Robot as many times as desired during a Programming Skills Match.

a. Upon handling the Robot, it must be immediately brought back to any legal Starting Position.
    i. Drivers may reset or adjust the Robot as desired from this position, including pressing buttons on the Robot Brain or activating sensors.
b. Any Riser being controlled by the Robot while being handled must be removed from the Field. Controlled requires that the Robot was manipulating the Riser and not simply touching it, e.g. if the Riser moves with the Robot either vertically or while turning, the Robot is controlling the Riser.
c. Any Riser contacting the chosen Starting Position (as to where the Robot is placed) must be removed from the Field for the remainder of the Match.
d. During a Programming Skills Match, Drivers may move freely around the Field, and are not restricted to the Driver Station when not handling their Robot.
    i. The rest of G8, which states that Drivers are not allowed to use any communication devices during their Match, still applies.
    ii. An intent of this exception is to permit Drivers who wish to "stage" Robot handling during a Programming Skills Match to do so without excessive running back and forth to the Driver Station.

Note: This rule only applies to Programming Skills Match. Driving Skills Matches are still governed by G17, especially for strategic violations.

Starting a Programming Skills Match. Drivers must start a Robot's Programming Skills Match routine by pressing a button on the Robot Brain or manually activating a sensor. Because there is no VEX IQ Controller hand-off, only one (1) Driver is required for Programming Skills Match (though Teams may still have two (2) if desired). G7 still applies to any Driver participating in the Match.

a. Pre-match sensor calibration is considered part of the standard pre-match setup time, i.e. the time when Team would typically be turning on the Robot, moving any mechanisms to their desired legal start position, etc.
b. Pressing a button on the VEX IQ Controller to begin the routine is not permitted.

The Day of the Challenge

Robot Inspection is done by the Team, showing on video, the inspection sheet signed and completed. Measurements must be done using a measuring device such as a Robot Sizing Tool or tape measure. Picture of inspection sheet and pictures of measurements must be done the morning of the event. Pictures will be uploaded to Event's Google Classroom.

Match Recordings

- Videos submitted for event must be recorded and submitted prior to the start of the next match. Videos recorded prior to the event's start date & time will not be acceptable.
- All Videos shall start with the timer that is being displayed in the online meeting during the event day.
- All video will include an Adult counting the scored elements.
- All matches will require a completed scoresheet to be submitted along with the video.
- Matches should follow a standard procedure, done and shown on one video without any "cuts" or edits, in the following order:
    1. Video will start by showing our event timer for the match.
    2. The Team starts a Match when the clock begins.
    3. After the Match, the Team must move the camera to each of the Goals saying out loud what counts as scored and records onto an official referee scoresheet.
    4. The scoresheet is then shown clearly on video for a minimum of 10 seconds. While the scoresheet is being recorded, Teams can reset the field for the next Match.
    5. The video recording can now be stopped.

****The full field must remain in the video the entire time.*****

Teams will need to upload their video on a publicly accessible platform like YouTube, Facebook Video, Google Classroom, SchoolTube, etc and submit the URL to the Event's Google classroom which will be provided the day of. The platform you choose must allow us to download the videos. A picture of the scoresheet must also be uploaded to Event's Google classroom as well. **Video link and scoresheet upload must be completed before the start of the next match.**

VEX IQ CHALLENGE (RISE ABOVE)

MATCH NUMBER #

REFEREE INITIALS

FOR FINALS TIEBREAKER MATCHES ONLY
MATCH STOP TIME 0 :

TEAM 1

NO SHOW DQ

DQ REASON

TEAM 2

NO SHOW DQ

DQ REASON

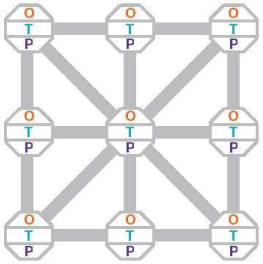
RISERS SCORED

#

COMPLETED STACKS

#

SELECT COLOR(S) IN EACH GOAL



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RISERS SCORED

#

COMPLETED STACKS

#

SELECT COLOR(S) IN EACH GOAL