VEX IQ ROBOTICS COMPETITION

LEVEL UP

2026–2027
Game Manual
Version 2.1

IQ Full Manual v2.1

Prefix

Changelog

Version 2.1 - October 8, 2026

- Updated Appendix E to provide clarity
- Minor typo / formatting fixes

Version 2.0 - September 3, 2026

- Revised <SC3b> and Figure SC3-1 to reflect changes in Floor Goal boundaries
- Updated SG5 and SG6 for clarity
- Updated SG7 to reflect changes in Load Zone boundaries
- Updated GG12 to provide clarity
- Revised R7 to recommend (not require) power button accessibility
- Removed “lubricating” as an example of an illegal modification from R17
- Updated the definitions of Floor Goal, Load Zone and their respective figures to reflect updated boundaries
- Updated the definitions of Plowing and Possession to clarify intent
- Minor typo / formatting fixes

Version 1.1 - August 6, 2026

- Updated Figures SG-1 and R3-1 to better indicate which Robot should be in which starting position
- Updated SC3 for clarity
- Revised <SG1b> for clarity
- Updated the blue-border box of SG6 to provide clarity
- Revised <SG7b> to provide clarity
- Revised GG11 to allow Drivers to serve as Loaders under certain conditions during a Match
- Revised the wording of rules G1, G2; and G4 for simplicity
- Deleted rule <G5> (the pre-existing rule <G6> is now <G5>)

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- Updated the defininition of Drive Team Member to match GG11
- Updated the defininition of Student for simplicity
- Moved *Violation* Notes from Appendix D to their corresponding rules
- Minor typo / formatting fixes

Version 1.0 - July 2, 2026

- Updated SC4 for clarity. *Bean Bags* scored on multiple levels now receive points for the higher level
- Revised SC5 for clarity
- Revised SG2 to clarify that the rule only applies during the *Match*
- Added a bullet to SG4 to clarify that a *Bean Bag* that ends up inside the Pyramid Goal is considered "out of the *Field*"
- Revised bullets B and F of SG7 for clarity
- Added bullet points to T6 allowing 0x2 or 0x3 pins to mark *Bean Bag* locations, and repairing of damaged *Bean Bags* and Pyramid Goal plastic sheets as permissible *Field* modifications
- Revised the definitions of Pyramid Goal, and L1, L2, L3 & L4 Goal for clarity
- Minor typo / formatting fixes

Version 0.2 - June 4, 2026

- Updated Figure SG-1 to correctly show the approximate *Robot* starting position
- Updated SG6 and its blue box to provide clarity regarding *Plowing*
- Updated Figure RSC3-1 to include a *Robot* in the correct starting position
- Updated the *Robot* Summary in section 4 to provide clarity
- Revised the definition of *Plowing* to include another *Scoring Object*
- Minor typo / formatting fixes

Version 0.1 - April 30, 2026

- Initial Release

Quick Reference Guide

Scoring Rules

SC1	All scoring statuses are evaluated after the *Match* ends

Scoring Rules

SC2	All scoring statuses are evaluated visually by a *Head Referee*
SC3	Scored *Bean Bag* in a Floor Goal criteria
<SC4>	Scored *Bean Bag* in a L1, L2, or L3 Goal criteria
SC5	Scored *Bean Bag* on a L4 Goal criteria

Specific Game Rules

SG1	Starting a *Match*
SG2	Horizontal expansion is limited
SG3	Vertical expansion is unlimited
SG4	Keep *Scoring Objects* in the *Field*
SG5	Each *Robot* gets one yellow *Bean Bag* as a *Preload*
SG6	*Possession* / *Plowing* is limited to a maximum of one (1) *Bean Bag*
SG7	Using the *Load Zone*

Safety Rules

S1	Stay safe, don’t damage the *Field*
S2	*Students* must be accompanied by an *Adult*
S3	Each *Student Team* member must have a completed participant release form on file

General Rules

G1	Participants must follow the Code of Conduct
<G2>	Participants must follow the *Student* Centered Policy
G3	Use common sense

General Rules

G4	*Students* must meet the *Student* Eligibility Policy requirements
G5	There is a difference between accidentally and willfully violating a *Robot* rule

General Game Rules

GG1	*Drivers* drive your *Robot*, and stay in the *Driver Station*
GG2	A *Team's Robot* should attend every *Match*
GG3	*Robots* on the *Field* must be ready to play
GG4	Hands out of the *Field*
GG5	*Match* Replays are allowed, but rare
GG6	*Disqualifications*
GG7	Time-outs
GG8	Keep your *Robot* together
GG9	Don't damage the *Field*
GG10	Handling the *Robot* mid-*Match* is allowed under certain circumstances
GG11	A *Team's* two *Drivers* switch controllers midway through the *Match*
GG12	Don't start before the timer, and stop moving at the end of the *Match*
GG13	Ending a *Match* early
GG14	*Drive Team Members* are permitted to appeal the *Head Referee's* ruling

Robot Skills Challenge Rules

RSC1	Standard rules apply in most cases
RSC2	Scoring *Robot Skills Matches*

Robot Skills Challenge Rules

RSC3	*Robot* and *Field* setup for *Robot Skills Matches*
RSC4	Loading and *Driver* differences
RSC5	Handling *Robots* during an *Autonomous Coding Skills Match*
RSC6	Starting an *Autonomous Coding Skills Match*
RSC7	Autonomous means “no humans”
RSC8	*Skills Stop Time*

Robot Rules

R1	One *Robot* per *Team*
R2	*Robots* must pass inspection
R3	*Robots* must fit within an 11” x 20” x 15” (279.4mm x 508mm x 381.0mm) volume
R4	*License Plates*
R5	Let it go after the *Match* is over
R6	*Robots* have one Brain
R7	Keep the power button accessible
R8	Firmware
R9	Motors
R10	Batteries
R11	One controller per *Robot*
R12	*Robots* are built from the VEX IQ product line
R13	Prohibited items
R14	Legal Non-VEX IQ components

Robot Rules

R15	Decorations are allowed
R16	Pneumatics
R17	Modifications of parts

Tournament Rules

T1	*Head Referees* have ultimate and final authority on all gameplay and *Robot* ruling decisions
T2	*Head Referees* must be qualified
T3	The *Drive Team Members* are permitted to immediately appeal the *Head Referee's* ruling
T4	The *Event Partner* has ultimate authority regarding all non-gameplay decisions
T5	Be prepared for minor *Field* variance
T6	*Fields* and *Field Elements* may be repaired at the *Event Partner's* discretion
T7	*Fields* at an event must be consistent with each other
T8	*Qualification Matches* will occur according to the official *Match Schedule*
T9	Each *Team* will be scheduled *Qualification Matches* as follows
T10	*Teams* are ranked by their average *Qualification Match* scores
T11	*Qualification Match* tiebreakers
T12	How *Alliances* are formed for *Teamwork Matches*
T13	*Teams* playing in *Finals Matches*.
T14	Finals *Match Schedule*
T15	Skills *Match Schedule*
T16	No requirement that Skills *Fields* have the same modifications as the Teamwork *Fields*
T17	Skills Rankings at events

Tournament Rules

T18	Skills Rankings globally
T19	*Robot* Skills at League Events

Section 1 - Introduction

About the Game Manual

The VEX IQ Robotics Competition Game Manual is the most authoritative source of information for the VEX IQ Robotics Competition. Contained within this document are all of the rules, boundaries, constraints, and other relevant information you will need to properly understand and play this year's game.

This manual is:

- A technical reference document for gameplay, *Robot* construction, and event operation
- A binding set of rules for *Teams*, coaches, referees, *Event Partners*, and all other volunteers and participants to adhere to
- The primary source of truth for all things related to the VEX IQ Robotics Competition

This manual is not:

- A strategy guide to score the most points
- An instruction set to build the best *Robot*
- A replacement for referee training, *Event Partner* training, or other Event Procedure

How to Read the Game Manual

The rules in this game manual are intended to work together to create a system of constraints. These rules are not intended to be understood independently of one another or in isolation from other information contained in this document. Many situations may require *Teams*, referees, or other volunteers to use logic from multiple places in the manual to properly form an interpretation. It is critical that the entire manual is read and understood, not just parts.

Information in the game manual is presented in the following ways:

Definitions in Appendix C establish the meaning of a term with regards to this document. Sometimes, these definitions may not perfectly match a more commonly accepted dictionary definition. In that case, the VEX definition takes precedence. If there is no VEX definition for a term, it can be reasonably assumed that a dictionary definition can be used.

General Rules establish the baseline rules for competition that *Teams* must adhere to at all times. These include, but are not limited to, conduct at an event, roster eligibility, competition integrity, and authority and enforcement.

General Game Rules begin to outline the rules that *Teams* must follow in every VEX game, not just the rules specific to this season's game. Many of these rules do not change from year to year, and help prevent the game from devolving into immediate chaos.

Scoring Rules define how points are earned and evaluated.

Specific Game Rules describe what *Robots* and *Drive Team Members* may and may not do during a *Match*, specifically for this season's game. These rules are subject to change from year to year, depending on how the game is designed and meant to be played.

Robot Rules define how *Robots* may be built and configured.

Tournament Rules describe how competitions are run, and how *Teams* are ranked at events.

Some rules also reference **Violation Notes** that are located in Appendix D. These notes provide additional guidance on enforcement, escalation, or special circumstances. If a rule doesn't include a cross-reference to *Violation* Notes, standard *Violation* definitions apply. See Appendix D for information about rule *Violations* and penalties.

> ⚠ **Caution**
>
> There are also blue boxes of text placed in some areas of the game manual. These are intended to provide further clarification and guidance in places that the *Game Design Committee* has deemed may benefit from things being said a different way, or presented slightly differently. Blue Boxes are meant to be supplements to, not replace, rules or definitions.

Game Manual Updates

This manual will have a series of "major" and "minor" updates over the course of the season. Each version is official and must be used in official VEX IQ Robotics Competition events until the release of the next version, upon which the previous version becomes void.

The latest version of the Game Manual can always be found at: https://link.vex.com/docs/26-27/viqrc/game-manual.

Known major release dates are as follows:

Release Date	Effective Date	Version #	Details
April 30, 2026	April 30, 2026	Version 0.1	Initial game release
May 14, 2026	May 14, 2026	N/A	Official Q&A system opens
June 4, 2026	June 11, 2026	Version 0.2	Minor typographical errors or formatting issues found in the initial release, with very few rule changes expected
July 2, 2026	July 9, 2026	Version 1.0	May include gameplay or rule changes inspired by input from the official Q&A system and the VEX community
August 6, 2026	August 13, 2026	Version 1.1	Clarification / minor update
September 3, 2026	September 10, 2026	Version 2.0	May include gameplay or rule changes inspired by early-season events
October 8, 2026	October 15, 2026	Version 2.1	Clarification / minor update
December 3, 2026	December 10, 2026	Version 2.2	Clarification / minor update
January 28, 2027	February 4, 2027	Version 3.0	May include gameplay or rule changes inspired by early-season events
March 25, 2027	April 1, 2027	Version 4.0	May include gameplay or rule changes pertaining specifically to the VEX Robotics World Championship

In addition to these known major updates, there may also be unscheduled updates released throughout the season if deemed critical by the *Game Design Committee*.

Any scheduled or unscheduled updates will always be released on a Thursday, no later than 5:00 PM CST (11:00 PM GMT). These updates will be announced via the VEX Forum, automatically pushed to the VEX IQ Hub app, and shared via VEX Robotics social media & email marketing channels. Once announced, the new version of the Game Manual will be immediately available at the link above.

Generally, Level Up Game Manual updates, scheduled or unscheduled, will include a grace period before the updated rules go into effect for competitions. See the release table above for specific dates. This grace period does not apply to the Version 0.1 Release, which serves as the initial rule set for the season.

Any events that begin before the 7-day grace period has ended must continue using the rules from the previous Game Manual release. This policy ensures fairness and consistency, allowing *Teams* to adapt their strategies and gameplay accordingly before the changes are enforced in official competitions.

The *Game Design Committee* reserves the right to enforce critical updates to the Game Manual as effective immediately upon release, if we feel that the changes are critical for competitive integrity, safety, and/or other extenuating circumstances.

Multi-week league events (or similar) that cross over a grace period should use the version of the Game Manual that is in effect at the beginning of each league session. Leagues should update to new versions of the Game Manual between sessions as appropriate.

The Q&A System

When first reviewing a new robotics game, it is natural to have questions about situations which may not be immediately clear. Navigating the Game Manual and seeking out answers to these questions is an important part of learning a new game. In many cases, the answer may just be in a different place than you first thought—or, if there is no rule explicitly prohibiting a gameplay strategy, then that usually means it is legal!

However, if a *Team* is still unable to find an answer to their question after closely reviewing the relevant rules, then every *Team* has the opportunity to ask for official rules interpretations in the VEX Robotics Question & Answer System. These questions may be posted by an *Adult* via the events.vex.com account that is associated with that *Team*.

All responses in this Q&A system should be treated as official rulings from the VEX Robotics *Game Design Committee*, and they represent the correct and official interpretation of the VEX Robotics Competition Rules. The Q&A system is the only source besides the Game Manual for official rulings and

clarifications, and is functionally an extension of the Game Manual. Q&A rulings are effective immediately upon release.

The VEX IQ Robotics Competition Question & Answer System will open on May 14th, 2026. Before posting on the Q&A system, be sure to review the Q&A Usage Guidelines:

1. The Q&A system is for rules clarifications only.
2. Only registered *Teams*, certified *Event Partners*, and certified VEX IQ Robotics Competition *Head Referees* can post questions.
3. Read and search this Game Manual before posting.
4. Read and search existing Q&As before posting.
5. Quote the applicable rule from the latest version of this Game Manual in your question.
6. Make a separate post for each question.
7. Use specific and appropriate question titles.
8. Questions will (mostly) be answered in the order they were received.
9. This system is the only source for official rules clarifications.
10. The *Game Design Committee* cannot and will not overrule a *Head Referee's* decision.

If there are any conflicts between the English-language PDF of the Game Manual and other supplemental or translated materials (e.g., referee training materials, the VEX IQ Robotics Competition Hub app, the game reveal video, a trans- lated game manual, etc.), the most current version of the English-language PDF of the Game Manual takes precedence.

Similarly, it can never be assumed that definitions, rules, or other materials from previous seasons apply to the current game. Q&A responses from previous seasons are not considered official rulings for the current game. Any relevant clarifications that are needed should always be re-asked in the current season's Q&A.

Hierarchy of Information

This Game Manual is the authoritative source for all gameplay, *Robot*, and event rules. For these matters, official information ranks as follows:

1. The current version of this Game Manual, including all published updates
2. The official Q&A system

3. Other VEX Robotics or Global Robotics and Science Foundation supplementary documents and training materials

Q&A answers are official rulings, effective when posted. An answer that conflicts with this Manual takes precedence until a Manual update addresses it. Answers not addressed by an update remain in effect.

The following companion documents are authoritative within their own scopes and take precedence over any summary or restatement of their content in this Manual:

- Code of Conduct
- Student-Centered Policy

No other source of information is official.

Section 2 - The Game

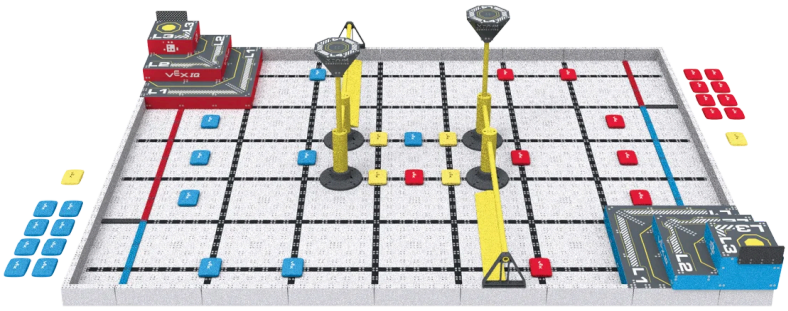
VEX IQ Robotics Competition Level Up - A Primer

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.

The primary objective of the game is to score *Bean Bags* into *Goals*. Higher *Goals* earn more points. A *Robot* can only carry one *Bean Bag* at a time, and most *Bean Bags* have to travel across the entire *Field* to reach their *Goals*. *Teams* have to decide whether to drive a long path or design their *Robot* to fit through the narrow shortcuts on the *Field*.

In *Teamwork Matches*, an *Alliance* composed of two *Robots* works together to score as many points as possible in a 60-second *Match*.

Teams may also compete in *Robot Skills Matches*, where one *Robot* tries to score as many points as possible with a slightly different set of rules. See Section 3 for more information.



Field Overview

The VEX IQ Robotics Competition Level Up *Field* consists of the following:

- 38 *Bean Bags*
  - 16 blue *Bean Bags*
    - 8 that start in the *Field*
    - 8 that can be introduced through the blue *Load Zone*
  - 16 red *Bean Bags*

        - 8 that start in the *Field*
        - 8 that can be introduced through the red *Load Zone*
    - 6 yellow *Bean Bags*
        - 2 *Preloads*, one for each *Team*
        - 4 that start in the *Field*
- Two Pyramid Goals, one red and one blue
- Two L4 Goals
- Two Floor Goals, one red and one blue
- Two *Load Zones*, one red and one blue
- Two wall structures
- Two *Floor* barriers

> **⚠ Caution**
>
> Note: The illustrations in this section of the Game Manual are intended to provide a general visual understanding of the game. Some figures may highlight or change the appearance of certain *Field Elements* and *Scoring Objects* to emphasize or clarify intent.

> **⚠ Caution**
>
> *Teams* should refer to official *Field* specifications, found in Appendix A, for exact *Field* dimensions, a full *Field* bill of materials, and exact details of *Field* construction.

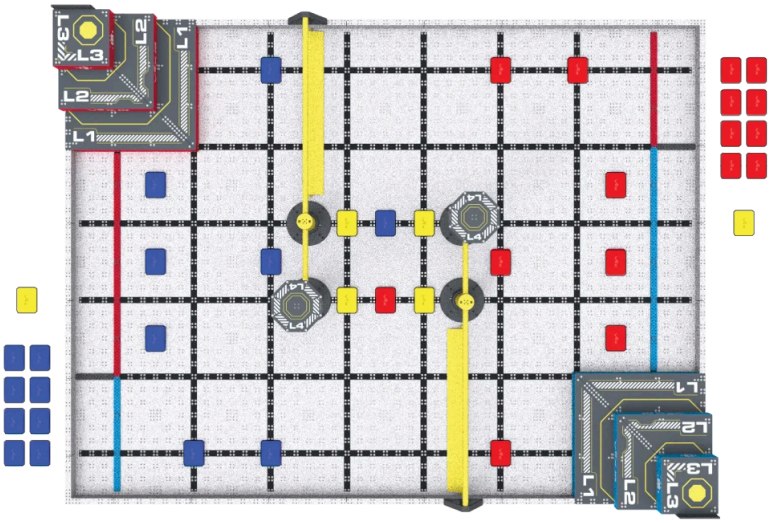


Figure FO-1: Starting configuration of a VEX IQ Robotics Competition Level Up *Field Teamwork Match* with *Bean Bags* highlighted (Red, Blue, Yellow).

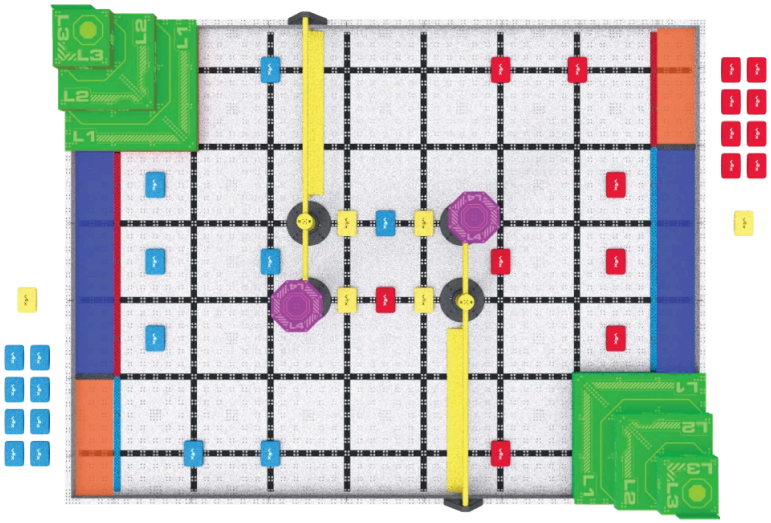


Figure FO-2: A VEX IQ Robotics Competition Level Up *Field*, with Pyramid Goals (green), L4 Goals (purple), Floor Goals (blue) and *Load Zones* (orange) highlighted.

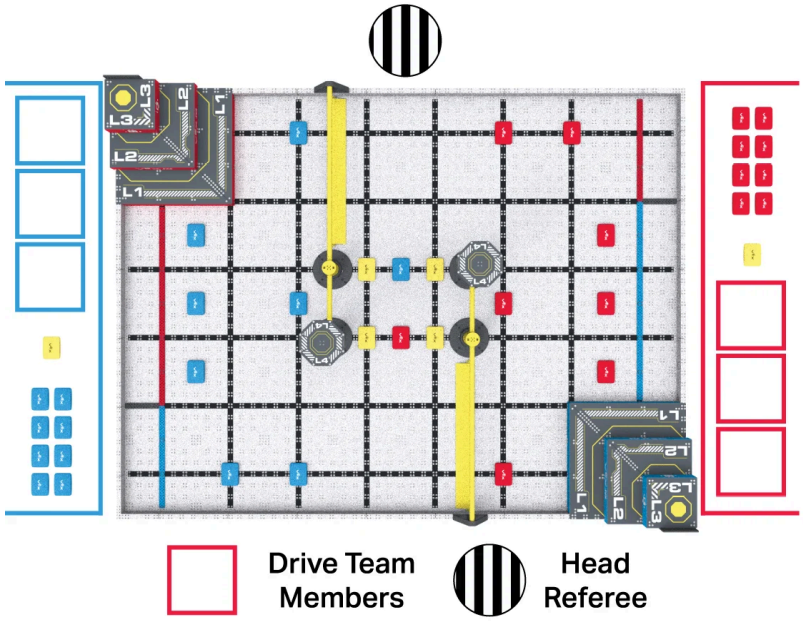


Figure FO-3: The recommended locations for *Drive Team Members* and *Head Referees* during *Teamwork Matches*.

Game Design Philosophy - A Letter from the GDC

We as the *Game Design Committee* want to explain how this game was designed and how we expect it to be played. We will also point out parts of the game we will watch during the season in case changes are needed.

This section is not a list of rules. It is here to help you understand what the game is about and what we as designers had in mind.

Level Up is a game where *Robots* move around the *Field* again and again to score. You can only move one *Bean Bag* at a time. Because of this, *Teams* will need to score often and move quickly. The game rewards *Robots* that can repeat actions and follow a plan.

Navigation and Route Choice

The *Field* is designed to give *Teams* choices about how their *Robot* moves.

Some paths are longer but more open and easier to use. Other paths are shorter but tighter and harder to move through. *Teams* will need to decide which path works best for their *Robot*.

Robot Design Tradeoffs

The way your *Robot* is built will affect how it moves on the *Field*.

Smaller *Robots* may be able to use shortcuts. Larger *Robots* may be more stable or easier to control. *Teams* will need to make choices about what is most important for their design.

There is no one “best” design. Different *Robots* can succeed in different ways.

Scoring Strategy

There are *Goals* with different heights and point values on the Level Up *Field*. This gives *Teams* choices about how they want to work with their partner and score.

Some *Teams* may try to score higher points each time. Others may focus on scoring faster. The best strategies will balance how many points you score, how quickly you score, and how often your *Robot* can repeat the action.

Commitment to Teams

The *Game Design Committee* will watch how *Matches* are played during the season. We want to make sure the game stays fun, fair, and interesting!

If needed, we may make updates to keep the focus on movement, scoring, and teamwork.

Have a great season!

- The VEX IQ Robotics Competition *Game Design Committee*

Scoring

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 a L4 Goal	16 Points

<SC1> All scoring statuses are evaluated after the Match ends, once all *Scoring Objects*, *Field Elements*, and *Robots* on the *Field* come to rest. See rule GG12 for more information and *Violation* details.

a. Referees should avoid contacting or moving *Robots* and/or *Scoring Objects* as much as possible while evaluating scoring statuses. If an object must be moved to evaluate the status of another object, its status must be agreed upon by all *Teams* and the *Head Referee*, and noted or recorded, before it is moved.

<SC2> All scoring statuses are evaluated visually by a Head 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*. See T3.
b. If there is a concern regarding the score of a *Match*, only the *Drive Team Members* from that *Match*, not an *Adult*, may share their questions with the *Head Referee*. See T3.

<SC3> A *Bean Bag* is **scored in a Floor 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 entirely within the Floor Goal (i.e., no part of the *Bean Bag* extends beyond the defined boundaries of the Floor Goal’s volume).
c. The *Bean Bag* is yellow, or matches the color of the Floor Goal.

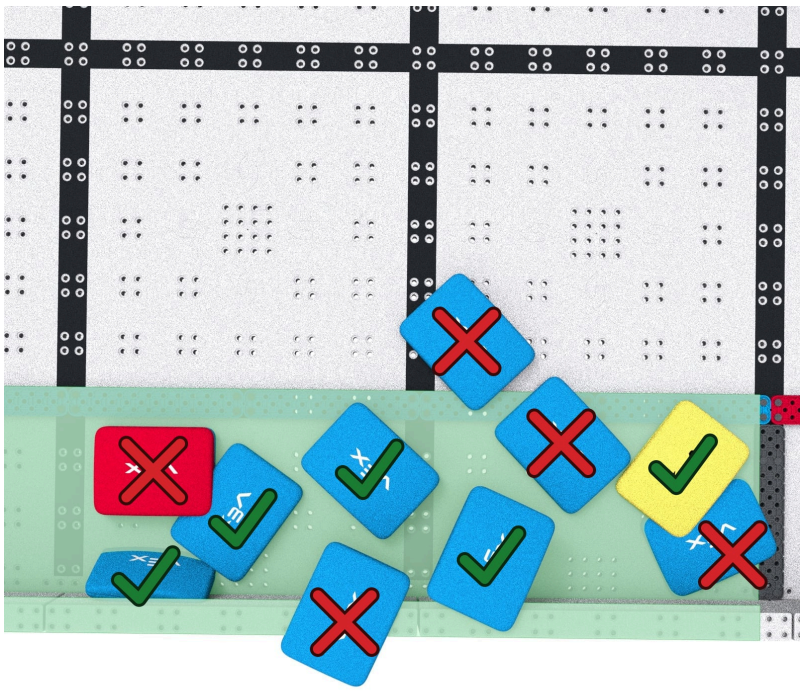


Figure SC3-1: *Bean Bags* in the blue Floor Goal. The red *Bean Bag* would not be considered scored since it does not match the color of the Floor Goal. The yellow *Bean Bag* would be considered scored since it can be scored in either color Floor Goal and is entirely within the Floor Goal. The blue *Bean Bags* with check marks would be considered scored since they match the color of the Floor Goal and are entirely within the Floor Goal. The blue *Bean Bags* with X's would not be considered scored since parts of those *Bean Bags* extend beyond the boundaries of the Floor Goal (i.e., they are not entirely within the Floor Goal).

<SC4> A *Bean Bag* is **scored on an L1, L2, or L3 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 surface that defines the L1, L2, or L3 Goal, or is directly or indirectly supported by another *Bean Bag* that is in contact with that horizontal surface.

c. The *Bean Bag* is not in contact with anything outside the *Field*.

d. The *Bean Bag* matches the color of the L1, L2, or L3 Goal, or the *Bean Bag* is yellow.

If a *Bean Bag* counts as scored on multiple levels (e.g., in contact with L3 while also supported by a stack of *Bean Bags* in L2), it should only receive points for the higher level.

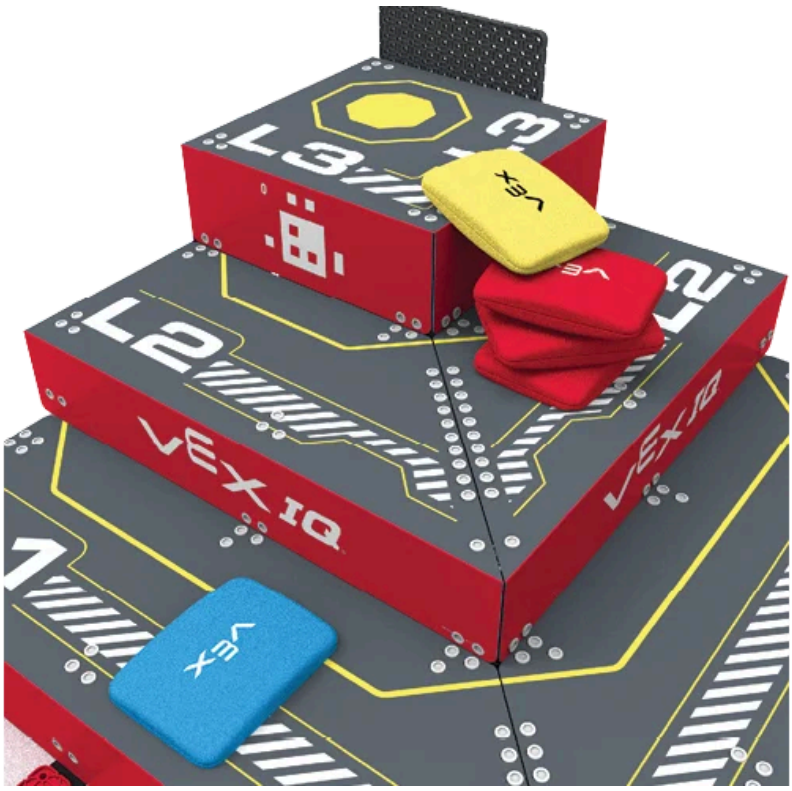


Figure SC4-1: *Bean Bags* in the Pyramid Goal.

- The blue *Bean Bag* would not be considered scored, as it does not match the color of the L1 Goal it is resting on.
- The three (3) red *Bean Bags* would all be considered as scored on the L2 Goal, as they match the color of the *Goal*, and are all either in contact with the L2 Goal or supported by another *Bean Bag* in contact with the L2 Goal.
- The yellow *Bean Bag* is contacting the L3 Goal and is also supported by a stack of *Bean Bags* on the L2 Goal. This means the yellow *Bean Bag* is considered scored on multiple levels (L2 and L3), in which case it should only receive points for the higher level (L3).

<SC5> A *Bean Bag* is **scored on a 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 surface that defines the L4 Goal, or is directly or indirectly supported by another *Bean Bag* that is in contact with that horizontal surface.

c. The *Bean Bag* is yellow.



Figure SC5-1: *Bean Bags* on the L4 Goal.

- Both yellow *Bean Bags* would be considered as scored on the L4 Goal, as both are either in contact with the L4 Goal or supported by another *Bean Bag* in contact with the L4 Goal.
- The red *Bean Bag* is not scored on the L4 Goal, since only yellow *Bean Bags* can be scored on the L4 Goal.

Specific Game Rules

<SG1> Starting a Match. At the beginning of a *Match*, the *Robot* must be placed such that it meets all of the following criteria:

a. Fit within an 11″ wide x 20″ long x 15″ high (279mm x 508mm x 381mm) volume, as checked during inspection per R3.

b. Positioned within one of the starting positions shown in Figure SG-1. *Robots* may not begin the *Match* in contact with any *Field Elements* other than the *Floor* inside these starting positions and the *Field Perimeter*, and may not be contacting any *Scoring Objects* other than the *Preload*.

   i. For Teamwork Challenge *Matches*, the *Team* listed as *Team* 1 (printed *Match* list), listed as red *Team* (events.vex.com), or listed first (VEXvia) must place their *Robot* in the starting position that shares a wall with the blue Pyramid Goal.

   ii. For Teamwork Challenge *Matches*, the *Team* listed as *Team* 2 (printed *Match* list), listed as blue *Team* (events.vex.com), or listed second (VEXvia) must place their *Robot* in the starting position that shares a wall with the red Pyramid Goal.

c. Completely stationary (i.e., no motors or other mechanisms in motion) until the *Match* timer starts. Pre-charging a pneumatic system (e.g., having the Pneumatic Pump running prior to the *Match*) is the only permitted exception to this rule.

d. The starting configuration of the *Robot* at the beginning of a *Match* must be the same as a *Robot* configuration that was checked during *Robot* inspection.

> **Violation Notes:**
>
> 1. The *Match* will not begin with any conditions in this rule unmet. If a *Robot* cannot meet these conditions in a timely manner, the *Robot* will be removed from the *Field* and rules R2D and GG3 will apply until the situation is corrected. In most cases, they will not receive a *Disqualification*, but should receive a Minor Violation and will not be permitted to play in the *Match*.

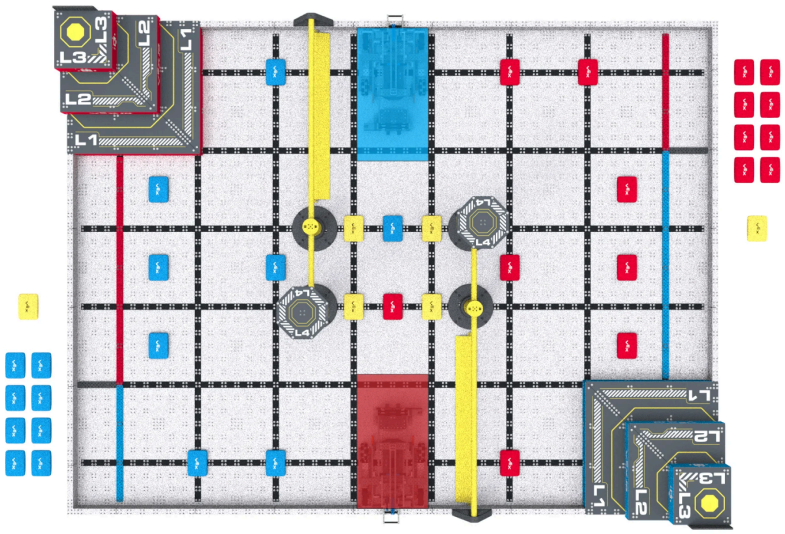


Figure SG-1: *Robots* in legal pre-*Match* starting positions (highlighted in red / blue).

<SG2> Horizontal expansion is limited. Once the *Match* begins, *Robots* may expand horizontally up to a length of 24″. The *Robot* can never be larger than 11″x24″ at any point during the *Match* (must fit within an 11″x24″ rectangular horizontal footprint)."

> **⚠ Caution**
>
> *Teams* should be aware that *Robots* may incidentally expand horizontally while extending vertically (e.g., mechanisms that arc, swing, or deploy upward). *Teams* must be prepared to demonstrate that their *Robot* does not exceed the maximum size constraint of 11″ x 24″ at any point during a *Match* due to either physical or programmed limitations, including while any vertical expansion mechanisms are in use.

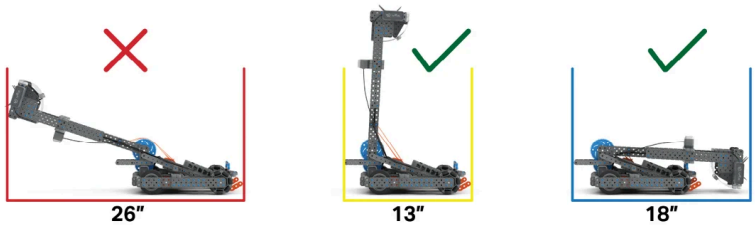


Figure SG2-1: A demonstration of how the size of the *Robot* may change horizontally through the course of a vertical expansion. The *Robot* on the far left is extended beyond 24", and would be in *Violation* of SG2.

<SG3> Vertical expansion is unlimited. Once the *Match* begins, *Robots* may expand vertically beyond the 15" starting size limit with no limits.

<SG4> Keep Scoring Objects in the Field. *Scoring Objects* that leave the *Field* during a *Match* will not be returned to the *Field*, and cannot be reintroduced by the *Loaders*.

a. "Leaving the *Field*" means that a *Scoring Object* is outside of the *Field Perimeter*, no longer in contact with the *Floor* or *Field Elements*, and not supported by *Robots* or *Scoring Objects* that are still inside the *Field*.
b. If a *Scoring Object* is removed from a *Robot* during a GG10 interaction, it is considered "out of the *Field*" as soon as it is no longer in contact with any *Robots*.
c. If a *Scoring Object* is on its way out of the *Field* (as determined by the *Head Referee*), but is deflected back into the *Field* by a *Drive Team Member*, field monitor, ceiling/wall, or other external factor, SG4 would still apply. This *Scoring Object* should be considered "out of the *Field*" and removed by a *Head Referee*.
d. A *Scoring Object* that comes to rest on top of the *Field Perimeter* is still considered to be inside the *Field* unless it contacts something outside of the *Field* (e.g., volunteer, *Drive Team Member*, field monitor, etc.), and cannot be retrieved by a *Drive Team Member* or volunteer.
e. A *Bean Bag* that ends up inside the Pyramid Goal structure should be considered "out of the *Field*."

<SG5> Each Robot gets one yellow Bean Bag as a Preload. Prior to the start of each *Match*, each *Preload* must be placed such that it meets all of the following criteria:

a. Contacting exactly one *Robot*.
b. Not contacting any *Field Elements* (excluding the *Floor*), *Goals*, or other *Scoring Objects*.

If a *Robot* is not present for a *Teamwork Match*, its *Preload* may be placed anywhere fully within that *Team's Load Zone* by the *Alliance* partner's *Drive Team Members*, or by the *Head Referee* in lieu of

Alliance partner preference.

<SG6> A Robot may Possess or Plow a maximum of one (1) Bean Bag at a time. *Robots* in *Violation* of this rule must immediately stop all *Robot* actions except for attempting to remove the excess *Bean Bag(s)*.

> ⚠ **Caution**
>
> The intent of this rule is to prevent each *Robot* from strategically transporting more than one *Bean Bag* across the *Field* at a time. This rule is not intended to prevent a *Robot* from contacting a second *Bean Bag* or from causing a second *Bean Bag* to be pushed out of the way as the *Robot* drives by or over it.
>
> A *Robot Plowing* one or more *Bean Bags* while already in *Possession* of a *Bean Bag* would be considered a *Violation* of this rule. Momentary, incidental contact with a *Bean Bag* that results in minimal movement of the *Bean Bag* is not considered *Plowing*. Greater-than-momentary contact with a *Bean Bag* that results in more significant movement of the *Bean Bag* (e.g., pushing a *Bean Bag* across a distance of more than 1 tile length) would generally be considered *Plowing*. Final determination of whether a *Bean Bag* has been *Plowed* is subject to judgment by the *Head Referee*.

<SG7> Using the Load Zone. *Bean Bags* may be *Loaded* one at a time through the *Load Zone* during the *Match*, and must meet all of the following criteria.

a. Red and blue *Bean Bags* may only be *Loaded* into the *Load Zone* that matches the color of that *Bean Bag*.
b. The *Bean Bag* must be placed in contact with the *Floor* and entirely within the *Load Zone* (i.e., no part of the *Bean Bag* extends beyond the defined boundaries of the *Load Zone*).
c. The Loader may only put a *Bean Bag* into a *Load Zone* if no other *Bean Bags* are in contact with that *Load Zone*.
d. A *Robot* may not contact a *Bean Bag* in the *Load Zone* if that *Bean Bag* is being contacted by a human.
e. Once a *Bean Bag* is placed into a *Load Zone* and released, it may no longer be contacted by a Loader unless the *Head Referee* determines it was misloaded and must be retrieved as described in clause F.
f. If a *Bean Bag* is *Loaded* improperly (e.g., while another *Bean Bag* is in contact with the *Load Zone*), it must be retrieved by the Loader and reintroduced if the *Head Referee* instructs the Loader to do so.

g. A *Loaded Bean Bag* must be placed in a stationary position, and must remain in contact with the *Floor* after it is released by the Loader until it is contacted by a *Robot*.

h. *Bean Bags* that begin the *Match* outside the *Field* cannot break the plane of the *Field Perimeter* until the *Match* begins.

> ⚠ **Caution**
>
> Note: Although it is not required, *Robots* are highly recommended to remain some distance away from the *Bean Bag* until the Loader's hand has clearly been removed. This will make clauses D & G abundantly clear to *Head Referees*.

› **Violation Notes:**

1. *Teams* are responsible for their own actions. *Violations* that involve a Loader and *Robot* from opposite *Teams* will be given to both *Teams*.
2. It is expected that most *Violations* of this rule will be accidental. In accidental cases that end up being Score Affecting (e.g., an illegally-*Loaded Scoring Object* is scored in a *Goal*), the first occurrence during a *Qualification Match* may be treated as a Minor Violation and a "final notice" that any future *Violation* will result in *Disqualification* for the *Match*.
3. Any Score Affecting *Violation* during a *Finals Match* (accidental and intentional) must be treated as a Major Violation.
4. Repeated, intentional, or egregious *Violations* may escalate to a Major Violation at the *Head Referee's* discretion. One example of an egregious *Violation* would be placing a *Scoring Object* directly onto a *Robot* without ever contacting the *Load Zone*.

Safety Rules

<S1> Stay safe, don't damage the Field. If, at any time, the *Robot* operation or *Team* actions are deemed unsafe or have damaged any *Field Elements* or *Scoring Objects*, the offending *Team* may be *Disabled* and/or *Disqualified* at the *Head Referee's* discretion. The *Robot* will require re-inspection before it may again take the *Field*.

Drive Team Members may not step onto the *Field* at any time, including pre-*Match* setup.

<S2> Students must be accompanied by an Adult. Every *Student* at a VEX IQ Robotics Competition event must be supervised by a responsible *Adult*. The *Adult* must obey all rules and be careful to not

violate *Student*-centered policies, but must be present for the full duration of the event in the case of an emergency. *Violations* of this rule may result in removal from the event and additional penalties.

<S3> Each Student Team member must have a completed participant release form on file for the event and season. A *Student Team* member cannot participate in an event without a completed release form on file.

General Rules

<G1> Participants must follow the Code of Conduct. All event attendees must abide by the guidelines set forth in the Code of Conduct.

› **Violation Notes:**

1. Any *Violation* of G1 may be considered a Major Violation and should be addressed on a case-by-case basis. *Teams* at risk of a G1 Major Violation due to multiple disrespectful or uncivil behaviors will usually receive a “final warning”, although the *Head Referee* is not required to provide one).

<G2> Participants must follow the Student Centered Policy. All event attendees must abide by the guidelines set forth in the Student Centered Policy.

› **Violation Notes:**

1. Potential *Violations* of this rule will be reviewed on a case-by-case basis. By definition, all *Violations* of this rule become Score Affecting as soon as a *Robot* which was built or programmed by an *Adult* scores points in a *Match*.

<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 Robotics Competition.

> ⚠ **Caution**
>
> Some examples include:
>
> - If there is an obvious typographical error (such as “per T5” instead of “per GG5”), this does not mean that the error should be taken literally until corrected in a future update.
> - Understand the realities of the VEX IQ *Robot* construction system. For example, if a *Robot* could hover above the *Field* for a whole *Match*, that would create loopholes in many of the rules. But... they can’t. So... don’t worry about it.
> - When in doubt, if there is no rule prohibiting an action, it is generally legal. However, if you have to ask whether a given action would violate S1, G1, or T1 then that’s probably a good indication that it is outside the spirit of the competition. On the other hand, if there’s not a rule that makes a *Robot* part legal, it’s not allowed.
> - In general, *Teams* will be given the “benefit of the doubt” in the case of accidental or edge-case rules infractions. However, there is a limit to this allowance, and repeated or strategic infractions will still be penalized.

<G4> Students must meet the Student Eligibility Policy requirements. All *Student* participants must fall within the eligibility requirements set forth in the Student Eligibility Policy for their respective program

> **Violation Notes:**
>
> 1. *Teams* believed to be in *Violation* of this rule should be reported to the Judge Advisor, *Head Referee*, or *Event Partner* for further investigation in coordination with VEX Robotics. Based on the investigation the *Team* may be removed from further *Matches*, have their *Robot Skills Match* scores removed, and/or be removed from consideration from judged awards.
> 2. *Violations* of this rule will be evaluated on a case-by-case basis, as noted in G1 and G2.

<G5> There is a difference between accidentally and willfully violating a Robot rule. Any *Violation* of *Robot* rules, accidental or intentional, will result in a *Team* being unable to play until they pass inspection (per R2D).

However, *Teams* who intentionally and/or knowingly circumvent or violate rules to gain an advantage over their fellow competitors are in *Violation* of the spirit and ethos of the competition.

General Game Rules

<GG1> Drivers drive your Robot, and stay in the Driver Station. During a *Match*, *Robots* may only be operated by that *Team's Drivers* and/or software running on the *Robot's* control system. Each *Team* may send up to three (3) *Drive Team Members* to their *Driver Station* for a *Match*: two (2) *Drivers*, and one (1) Loader. Those *Drive Team Members* must remain in their *Driver Station*, except when legally interacting with their *Robot* per GG10.

Drive Team Members are the only *Team* members that are allowed to be in the *Driver Station* during a *Match*. *Adults* (other than event staff) are not permitted to be in the *Driver Station* during a *Match*.

a. *Drive Team Members* are prohibited from any of the following actions during a *Match*:
    i. Using any sort of communication device in the *Driver Station*. Non-headphone devices with communication features turned off (e.g., a phone in airplane mode, a walkie talkie turned off, smart glasses with communication features disabled) are allowed. Communication features can be enabled for translation apps during post-*Match* discussions.
    ii. Standing or sitting on any sort of object during a *Match*, regardless of whether the *Field* is on the *Floor* or elevated, except as required by an officially approved accommodation request.
    iii. Bringing/using additional materials to simplify the game challenge during a *Match* (e.g., device to align or add *Scoring Objects* to the Loader).
    iv. To ensure that *Drive Team Members* are aware of verbal calls during a *Match* (as an application of rules T1, G1, S1, and G3), powered headphones, earbuds, passive earpieces connected to electronic devices, or other personal accessories/devices that transmit audio cannot be worn/used in the *Driver Station* except as required by an officially approved accommodation request.
b. In *Teamwork Matches*, one *Team* in an *Alliance* is assigned to the red *Driver Station* and the other *Team* is assigned to the blue *Driver Station*, as follows:
    i. The *Team* listed as *Team* 1 on a printed *Match* list, listed as red *Team* on events.vex.com, or listed first in VEXvia will use the red *Driver Station* and participate as the red *Team* in that *Match*.
    ii. The *Team* listed as *Team* 2 on a printed *Match* list, listed as blue *Team* on events.vex.com, or listed second in VEXvia will use the blue *Driver Station* and participate as the blue *Team* in that *Match*.
c. Individuals who are not *Drive Team Members* for a *Match* cannot provide directions, commands, or advice to the *Drive Team Members* during that *Match*. They're welcome to provide cheerful, positive encouragement, but should not affect *Match* play or strategy.

> **⚠ Caution**
>
> Point iii is intended to refer to non-*Robot*-related items that directly influence gameplay. Provided no other rules are violated, and the items do not pose any safety or *Field* damage risks, the following examples are not considered *Violations* of GG1:
>
> - Materials used before or after a *Match*, such as a pre-*Match* alignment aid
> - Strategic aids, such as a whiteboard or clipboard
> - Earplugs, gloves, or other personal accessories

> **Violation Notes:**
>
> 1. Major Violations of this rule are not required to be Score Affecting, and could invoke *Violations* of other rules, such as G1, G2, or G4.

<GG2> A Team's Robot should attend every Match. The *Team's Robot* must be in the *Driver Station* or on the *Field* for the *Team's* assigned *Match*, even if the *Robot* is not functional. If the *Robot* is not at the *Field* for the entire duration of the *Match*, that *Team* will be considered a "no show" and will receive zero (0) points. The other *Team* in the *Alliance* will still play and receive points for the *Match*.

a. *Teams* are expected to participate in all scheduled *Qualification Matches* and, if they're ranked high enough to be included in a finals *Alliance*, *Finals Matches*. Failure to attend scheduled *Matches* may be considered a *Violation* of G1. *Teams* that participate in zero *Qualification Matches* cannot be considered for judged awards.

<GG3> Robots on the field must be ready to play. When a *Team* puts their *Robot* on the *Field*, it must be prepared to play (i.e., battery charged, sized within the starting size constraint, etc.).

a. *Robots* must be placed on the *Field* promptly. Repeated failure to do so could result in a *Violation* of G1 and/or removal of the *Robot* from the current *Match* at the *Head Referee's* discretion.
b. If a *Robot* is delaying the scheduled start of a *Match*, it may be removed from the *Field* at the discretion of the *Head Referee* and *Event Partner*. The *Robot* may remain at the *Field* so that the *Team* does not get assessed a "no-show" (per GG2).
c. If a *Robot* is not placed on the *Field* prior to the start of a *Match*, it cannot be placed on the *Field* during that *Match*.

> **⚠ Caution**
>
> The definition of the word "promptly" as used in clause A is at the discretion of the *Event Partner* and *Head Referee*, who will consider event schedule, previous *Violations* or delays, etc. As a general guideline, five seconds to check *Robot* alignment would be acceptable, but five minutes to assemble multiple parts together would not.

<GG4> Hands out of the Field. During a *Match*, *Drive Team Members* are prohibited from making intentional contact with any *Field Element*, *Robot*, or *Scoring Object* that has been introduced to the *Field*, except for the allowances in GG10, RSC5, and SG7.

a. *Drive Team Members* are not permitted to reach into the 3-dimensional volume of the *Field Perimeter* at any time during the *Match*, apart from the actions described above. Rule S1 applies.
b. Any concerns regarding *Field Element* or *Scoring Object* starting positions should be raised with the *Head Referee* prior to the *Match*. *Team* members may never adjust *Scoring Objects* or *Field Elements* themselves.
c. Transitive contact, such as contact with the *Field Perimeter* that causes the *Field Perimeter* to contact *Field Elements* or objects inside of the *Field*, could be considered a *Violation* of this rule.

> **⚠ Caution**
>
> If a *Drive Team Member's* hands extend over the *Field* and/or *Field Perimeter* in a way that is safe and doesn't contact anything in the *Field*, it's unlikely to be a *Violation*. However, *Head Referees* may still ask *Drive Team Members* to step back and remain completely outside the *Field* when necessary (e.g., for safety reasons or to reduce the chances of gameplay interference).

<GG5> Match Replays are allowed, but rare.*Match* replays (i.e., playing a *Match* over again from its start) must be agreed upon by both the *Event Partner* and *Head Referee*, and will only be issued in the most extreme circumstances. Some examples that may warrant a *Match* replay are as follows (note that this is not an exhaustive list):

a. Score Affecting "*Field* fault" issues.
    i. *Scoring Objects* not being reset before the *Match* starts.
    ii. *Field Elements* detaching or moving beyond normal tolerances, not a result of *Robot* interactions.
b. Score Affecting game rule issues.
c. A *Field* is reset before the score is determined.

d. A *Match* is run before its scheduled time without a *Team*.

<GG6> Disqualifications. A *Team* that is issued a *Disqualification* in a *Qualification Match* receives zero points for the *Match*. The other *Team* on their *Alliance* will still receive points for the *Match*.

a. In *Finals Matches*, *Disqualifications* apply to the whole *Alliance*, not just one *Team*. An *Alliance* that receives a *Disqualification* in a *Finals Match* will receive zero points.
b. A *Team* that receives a *Disqualification* in a *Robot Skills Match* will receive a score of zero.

<GG7> Time-outs. There are no time-outs in VEX IQ Robotics Competition *Tournaments*.

<GG8> Keep your Robot together. *Robots* may not intentionally detach parts or leave mechanisms on the *Field* during any *Match*.

a. 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 *Drive Team Member* during a *Robot* reset using GG10.

<GG9> Don't damage the Field. *Robot* interactions which damage the *Field* or any *Field Elements* are prohibited. For the purpose of this rule, "damage" is defined as anything which requires repair in order to begin the next *Match*, such as causing part of a *Goal* to detach from the *Field*.

> ⚠ **Caution**
>
> *Teams* are responsible for the actions of their *Robots* at all times, especially when interacting with the *Goals*. If a *Team* chooses to repeatedly ram full-speed into a *Field Element*, it will be hard to convince a *Head Referee* that any damage caused was "accidental.

› **Violation Notes:**

1. In most cases, accidental *Field* damage should only be considered a Minor Violation.
2. Egregious, intentional, or repeated accidental/Minor Violations may escalate to a Major Violation at the *Head Referee's* discretion.

<GG10> 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 *Drive Team Members* may retrieve & reset their *Robot* with the *Head Referee's* permission. To do so, the *Team* must do the following:

a. Signal the Referee by placing their VEX IQ Controller on the ground. The *Head Referee* may ask the *Driver* to demonstrate the problem using the *Robot* controller before approving the *Robot* reset (e.g., confirming that the *Robot* is broken, undriveable, or stuck on an obstacle) if the issue with the *Robot* isn't obvious.

b. Any *Scoring Objects* being controlled by the *Robot* while being handled must be removed from the *Field*, will not be returned to the *Field*, and cannot be reintroduced by the *Loaders*. No other *Scoring Objects* should be adjusted.

   i. In the context of this rule, "controlled" implies that the *Robot* was manipulating the *Scoring Object*, and not simply touching it. For example, if the *Scoring Object* would move with the *Robot* either vertically or while turning, then the *Robot* is "controlling" that *Scoring Object*.

c. The *Robot* must be placed back into a legal position that meets the criteria listed in clauses a,b, c, & d of SG1. If any *Scoring Objects* are preventing the *Robot* from being legally placed, they should be removed from the *Field*, will not be returned to the *Field*, and cannot be reintroduced by the *Loaders*. The *Robot* does not get a new *Preload* during this reset.

d. Swapping one set of parts for another, or adding new pieces to a *Robot* mid-*Match* during a GG10 or RSC5 interaction is considered a *Violation* of the intent and spirit of this rule. Repairing a *Robot*, or reattaching parts of the *Robot* that unintentionally break off during a *Match*, is allowed.

e. As described in rule S1, *Students* cannot step into the *Field* at any time during a *Match*. If the *Drive Team Members* cannot reach the *Robot* due to the *Robot* being in the center of the *Field*, they may ask the *Head Referee* to pick up the *Robot* and hand it to the *Drive Team Members* for placement according to the conditions above.

› **Violation Notes:**

1. This rule is intended to allow *Teams* to fix damaged *Robots* or help get their *Robots* "out of trouble." Strategically exploiting this rule may be considered a Minor Violation or Major Violation at the *Head Referee's* discretion.

<GG11> A Team's two Drivers switch Controllers midway through the Match. In a given *Match*, up to two (2) *Drivers* may be in the *Driver Station* per *Team*. The two *Drivers* must switch their controller between thirty-five seconds (0:35 on the *Match* timer) and twenty-five seconds (0:25 on the *Match* timer) remaining in the *Match*.

a. No *Driver* shall operate a *Robot* for more than thirty-five (35) seconds.

b. The second *Driver* may not touch their *Team's* controls until the controller is passed to them.

c. Once the controller is passed, the first *Driver* may no longer touch their *Team's* controls.

d. *Drivers* may also serve as *Loaders* under certain conditions during a *Match*:
    i. For drive teams consisting of two or three members, any *Drive Team Member* who is not actively operating the *Robot* may serve as a *Loader*.
    ii. For drive teams consisting of only one member, the *Driver* may simultaneously operate the *Robot* and serve as the *Loader* for the first thirty-five (35) seconds of the *Match*, at which point the *Robot's* operation (even prewritten commands) must cease for the remainder of the *Match*.

> **Violation Notes:**
>
> 1. At a minimum, any *Violation* of this rule is considered a Minor Violation. Whether it escalates to a Major Violation or not is dependent upon the *Head Referee's* judgment regarding prior *Violations* and any Score Affecting actions that were a direct result of the *Violation*, such as the first *Driver* scoring additional points after 35 seconds of driving.

<GG12> Don't start before the timer, and stop moving at the end of the Match. *Driver* inputs and *Robot* may not begin before the *Match* timer starts, and must cease at the end of the *Match*, when the timer reaches 0:00.

a. Any scoring that takes place after a *Match* due to *Robots* continuing to move will not count toward the score.
b. A pre-programmed routine which causes *Robot* motion to start before the *Match* or continue after the end of the *Match* would violate this rule.
c. Any scoring that takes place after the end of a *Teamwork Match* is a *Violation*. Scoring that occurs after the end of a *Robot Skills Match* is not a *Violation*.

> **⚠ Caution**
>
> It is expected that many Level Up *Matches* will have last-second "buzzer-beater" moments. The key moment occurs when the timer display shows 0:00. At many events, a buzzer sound will also play at T=0:00; however, the *Field* timer display takes precedence in the event of any audio discrepancies.
>
> If a *Scoring Object* is released from a *Robot* before this moment, it will be allowed to finish its path and the score will be calculated once it comes to rest. However, if it is released after this moment (i.e., the *Robot* was still moving past T=0:00) it will not count and the *Team* will receive a *Violation* as described below.
>
> In cases where a last-second scoring attempt is "too close to call," *Teams* will generally be given the "benefit of the doubt" and the score will be counted.

› **Violation Notes:**

1. Because scoring that happens after the *Match* is not counted, all *Violations* of GG12 should be recorded as Minor Violations.

<GG13> Ending a Match early. If an *Alliance* wants to end a *Qualification Match* or a *Finals Match* early, both *Teams* must signal the referee by ceasing all *Robot* motion and placing their controllers on the ground. The referee will then signal to the *Teams* that the *Match* is over and will begin to tally the score. If the *Match* is a tiebreaker *Finals Match* for first place, then the *Match Stop Time* will also be recorded (see T14B).

<GG14> Drive Team Members are permitted to appeal the Head Referee's ruling immediately after a Match. If *Drive Team Members* wish to dispute a score or ruling, they must stay in the *Driver Station* until the *Head Referee* talks with them. The *Head Referee* may then choose to meet with the *Drive Team Members* at another location and/or at a later time so that the *Head Referee* has time to reference materials or resources to help with the decision. Once the *Head Referee* announces that their decision has been made final, the issue is over and no more appeals may be made (see rule T1); failure to accept this final decision may be considered a G1 *Violation*.

a. Referees are not permitted to review any photo or video *Match* recordings when determining a score or ruling. Some events may also prohibit *Drive Team Members* from reviewing photo or video *Match* recordings while in the *Driver Station*; this should be announced to all *Teams* before *Matches* start.

b. *Head Referees* are the only individuals permitted to explain a rule, *Disqualification*, or *Violation* to the *Teams* in a *Teamwork Match*. *Teams* should never consult other field personnel, including *Scorekeeper Referees*, regarding a ruling clarification.

Communication and conflict resolution skills are an important life skill for *Students* to practice and learn. In VEX IQ Robotics Competitions, we expect *Students* to practice proper conflict resolution using the proper chain of command. *Violations* of this rule may be considered a *Violation* of G1.

> ⚠ **Caution**
>
> Some events may choose to utilize a “question box” or other designated location for discussions with *Head Referees*. Offering a “question box” is within the discretion of the *Event Partner* and/or *Head Referee*, and may act as an alternate option for asking *Drive Team Members* to remain in the *Driver Station* (although all other aspects of this rule apply).
>
> However, by using this alternate location, *Drive Team Members* acknowledge that they are forfeiting the opportunity to use any contextual information involving the specific state of the *Field* at the end of the *Match*. For example, it is impossible to appeal whether a game element was scored or not if the *Field* has already been reset. If this information is pertinent to the appeal, *Drive Team Members* should still remain in the *Driver Station*, and only relocate to the “question box” once the *Head Referee* has been made aware of the concern and/or any relevant context.

Section 3 - Robot Skills Matches

Overview

In *Robot Skills Matches*, *Teams* have one minute to score as many points as possible. There are two types of *Robot Skills Matches*: Driving Skills Matches, which are entirely *Driver* controlled, and *Autonomous Coding Skills Matches*, which are autonomous with limited human interaction. *Teams* are ranked based on their combined score in the two types of *Robot Skills Matches*.

Robot Skills Matches are optional for all *Teams*. *Teams* who do not compete in *Robot Skills Matches* will not be penalized in *Teamwork Matches*. However, participation in *Robot Skills Matches* may impact eligibility for judged awards at the event.

At events that include *Teamwork Matches*, *Teams* may only participate in *Robot Skills Matches* if they also participate in the *Qualification Matches*. See rule T15.

Robot Skills Match Rules

<RSC1> Standard rules apply in most cases. All rules from previous sections apply to the *Robot Skills Matches*, unless otherwise specified in this section.

Violations of <GG>, <SG>, and <RSC> rules that occur during a *Robot Skills Match* should only affect the outcome of that *Match* and should not be considered when determining whether a *Violation* has been repeated during the event.

<RSC2> Scoring Robot Skills Matches. For each *Robot Skills Match*, *Teams* are awarded a score based on the standard scoring rules.

<RSC3> Robot and Field setup for Robot Skills Matches. The *Robot* and *Field* are set up the same as for *Teamwork Matches*, with the following modifications:

a. The layout of *Scoring Objects* for a Level Up *Robot Skills Match* differs from the layout for *Teamwork Matches*, as shown in Figure RSC3-1.
    i. Eight (8) *Bean Bags* (four red and four blue) begin the *Match* in the red *Driver Station* for Loading.
b. The blue *Driver Station* and *Load Zone* are not used in *Robot Skills Matches*.

c. The *Robot* must be placed in the starting position that shares a wall with the red Pyramid Goal at the beginning of the *Match* and after the *Robot* is reset under rule GG10 or RSC5.

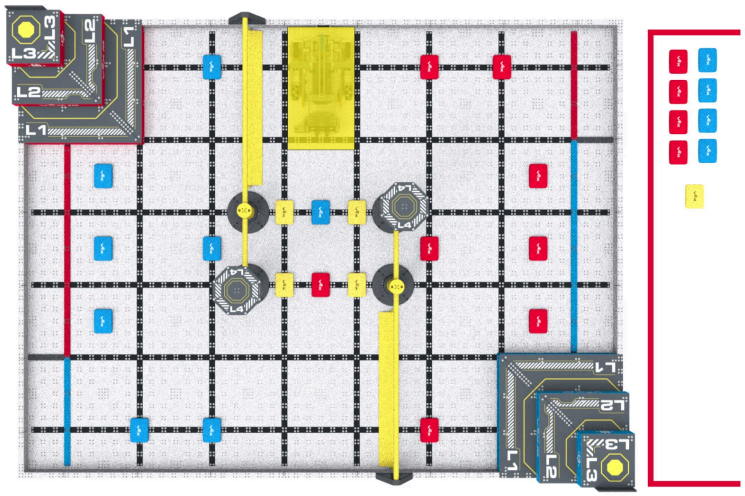


Figure RSC3-1: The field layout for a VEX IQ Robotics Competition Level Up *Robot Skills Match*.

<RSC4> Loader and Driver differences. All criteria listed in SG7 apply as written (e.g., a Loader cannot put a *Scoring Object* into a *Load Zone* if there's already a *Scoring Object* there). Loading is modified as follows:

a. In Driving Skills Matches and *Autonomous Coding Skills Matches*, any *Driver* who is not currently driving the *Robot* may also serve as a Loader (i.e., a *Team* may have one, two, or three *Loaders* at any given time).

b. The blue *Load Zone* is not used in *Robot Skills Matches*. All *Match Loads* are *Loaded* through the red *Load Zone* in *Robot Skills Matches*.

c. *Drive Team Members* must remain in the red *Driver Station* during Driving Skills Matches, except when legally interacting with their *Robot* per rule GG10.

d. During an *Autonomous Coding Skills Match*, *Drivers* may move freely around the *Field*, and are not restricted to the *Driver Station* when not handling their *Robot* under rule RSC5. This exception permits *Drivers* who wish to "stage" *Robot* handling during an *Autonomous Coding Skills Match* to do so without excessive running back and forth to the *Driver Station*.

<RSC5> Handling Robots during an Autonomous Coding Skills Match. A *Team* may handle their *Robot* as many times as desired during an *Autonomous Coding Skills Match*.

a. Upon handling the *Robot*, it must be immediately brought back to a legal starting position. The *Robot* does not get a new *Preload Scoring Object* during this reset.
    i. *Drive Team Members* may reset or adjust the *Robot* as desired from this position, including pressing buttons on the *Robot* brain or activating sensors.
    ii. Any *Scoring Objects* that are Possessed by the *Robot* while being handled must be removed from the *Field*, will not be returned to the *Field*, and cannot be reintroduced by the *Loaders*. No other *Scoring Objects* should be moved or adjusted.
    iii. As described in rule S1, *Students* cannot step into the *Field* at any time during a *Match*. If the *Drive Team Members* cannot reach the *Robot* due to the *Robot* being in the center of the *Field*, they may ask the *Head Referee* to pick up the *Robot* and hand it to the *Drive Team Members* for placement according to the conditions above.

> ⚠ **Caution**
>
> This rule is an explicit exception to rule GG4 and the *Violation* Note for GG10, and may be used as part of a *Team's* strategy for *Autonomous Coding Skills Matches*. Driving Skills Matches are still governed by GG4 & the *Violation* Note for GG10, especially for strategic *Violations*.

<RSC6> Starting an Autonomous Coding Skills Match.*Drivers* must start a *Robot's Autonomous Coding 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 *Driver* is required for an *Autonomous Coding Skills Match* (though *Teams* may still have two if desired).

a. Pre-*Match* sensor calibration is considered part of the standard pre-*Match* setup time (i.e., the time when the *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. To avoid any confusion, *Teams* are advised not to bring controllers to *Autonomous Coding Skills Matches*.

> ⚠ **Caution**
>
> In accordance with GG3, *Teams* should be mindful of event schedules and set their *Robot* up as promptly as possible. The definition of "prompt" is at the discretion of the *Event Partner* and *Head Referee*, and could depend on things like how much time is left for the Skills Challenge *Field(s)* to be open, how many *Teams* are waiting in line, etc. As a general guideline, three seconds to calibrate a Gyro Sensor would be acceptable, but three minutes to debug a program would not.

<RSC7> Autonomous means “no humans.” During an *Autonomous Coding Skills Match*, *Drive Team Members* are not permitted to activate any controls on their VEX IQ Controller, and cannot manually trigger sensors (including the Vision Sensor) in any way, even without touching them.

a. *Teams* cannot use VEX IQ Controllers for any purpose in *Autonomous Coding Skills Matches*, and are advised not to bring controllers to the *Field*. If there is a controller at the *Field* during an *Autonomous Coding Skills Match*, it should be placed on the *Floor* outside the *Field* and remain untouched until after the *Match*.

<RSC8> Skills Stop Time. If a *Team* wishes to end their *Robot Skills Match* early, they may elect to record a *Skills Stop Time*. This is used as a tiebreaker for *Robot* Skills rankings. A *Skills Stop Time* does not affect a *Team’s* score for a given *Robot Skills Match*. *Drivers* and field staff must agree prior to the *Match* on the signal that will be used to end the *Match* early.

a. *Teams* who intend to attempt a *Skills Stop Time* must “opt-in” by verbally confirming with the *Scorekeeper Referee* prior to the *Robot Skills Match*. If no notification is given prior to the start of the *Match*, then the *Team* forfeits their option to record a *Skills Stop Time* for that *Match* and they will receive a default *Skills Stop Time* of 0.
    i. This conversation should include informing the *Scorekeeper Referee* which *Driver* will signal the stop. The *Match* may only be ended early by a *Driver* for that *Match*.
    ii. The agreed-upon signal to stop the *Match* must be both verbal and visual, such as *Drivers* crossing their arms in an “X” while saying “Stop!” or placing their VEX IQ Controller on the ground while saying “Done!”
    iii. It is recommended that the *Driver* provides the *Scorekeeper Referee* with a verbal notice that the *Team* is approaching their intended *Skills Stop Time*, such as counting out “3-2-1-stop.”
b. The moment when the *Match* ends early is defined as the moment when the *Robot* and *Scoring Objects* have come to a rest and the *Driver* provides the agreed upon visual and audio signal to the *Scorekeeper Referee*.
    i. If a *Tournament* Manager display is being used for field timing, then the *Skills Stop Time* is the time shown on the display when the *Match* is ended early (i.e., in 1-second increments).
    ii. If a manual timer is being used that counts down to 0 with greater accuracy than 1-second increments, then the time shown on the timer should be rounded up to the nearest second. For example, if the *Robot* is *Disabled* and the timer shows 25.2 seconds, then the *Skills Stop Time* should be recorded as 26.
c. If a *Team* runs multiple *Robot Skills Matches* in a row, they must reconfirm their *Skills Stop Time* choice with the *Scorekeeper Referee* prior to each *Match*.

d. Any questions regarding a *Skills Stop Time* should be reviewed and settled immediately following the *Match*. T1 and T3 apply to *Robot Skills Matches*.

Section 4 - The Robot

Overview

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

Most of these rules are “hard limits,” such as the maximum number of motors permitted. However, some are “at inspector discretion,” such as determining a mechanism’s potential safety risk. At many events, the lead inspector and the *Head Referee* are the same person; if they are not, then the volunteer inspector should work with the *Head Referee* to make any judgment calls. The *Head Referee* has final authority regarding all *Robot* rules, since it is ultimately their decision whether a *Robot* takes the *Field* for a *Match* after inspection has concluded (per R2D and R2E).

Comprehensive lists of legal and illegal VEX IQ Robotics Competition parts can be found in the VEX IQ Robotics Competition Legal Parts and VEX IQ Robotics Competition Illegal Parts Lists. These documents are updated as needed if/when new VEX IQ parts are released, and may not coincide with scheduled Game Manual updates.

Robot Summary

This summary checklist is not a replacement for the full *Robot* rules. *Teams* must still understand the rules in this section.

General requirements:

- Each *Team* can only bring one *Robot* to a competition R1
- The *Robot* must be designed, built, and coded by that *Team’s Student* members G2
- *Robots* can’t compete until they’ve passed inspection at the event R2
- The *Robot* has to fit within an 11”x20”x15” volume at the start of the *Match* R3

Required parts:

- One VEX IQ *Robot* Brain with current VEX IQ firmware R8
- Up to six (6) VEX IQ *Robot* Motors R9

- One VEX IQ *Robot* Battery R10
- One VEX IQ *Robot* Controller R11
- VEX IQ *Robot* components R12
- Two *License Plates* R4

Optional parts:

- Non-VEX rubber bands no larger than 7.5″ long and 0.25″ wide R14A
- HEXBUG mechanical and structural parts R14D
- VEX GO mechanical and structural parts R14E
- Food-safe lubricants used in moderation R14I
- Non-functional decorations that aren't 3D printed R15
- VEX IQ pneumatics R16

Illegal parts:

- Modified parts (with 4 specific exceptions) R17
- Anything that could damage a person, *Robot*, *Field*, or game part R13
- Tape, stickers, etc. that aren't a non-functional decoration
- Any part that isn't specifically made legal by another rule
- Electronics from other VEX product lines
- 3D printed parts or decorations
- Everything listed in the illegal parts appendix

Robot Rules

<R1> One Robot per Team. Each *Team* can only bring one *Robot* to 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 *Robot*, and a given *Robot* may only be used by one *Team*. The VEX IQ system is intended to be a mobile robotics design platform. As such, a VEX IQ Robotics Competition *Robot*, for the purposes of the VEX IQ Robotics Competition, 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. Also includes the VEX IQ pneumatic air pump and solenoids if used on the *Robot*.
- Subsystem 3: Additional mechanisms (and associated Smart Motors) that allow manipulation of *Scoring Objects* or navigation/manipulation of *Field Elements*.

Given the above definitions, a minimum *Robot* for use in any VEX IQ Robotics Competition event (including *Robot Skills Matches*) must consist of subsystems 1 and 2 above. Thus, if you swap out an entire subsystem 1 or 2, you have now created a second *Robot* and are no longer legal.

a. *Teams* may not compete with one *Robot* while a second is being modified or assembled at a competition.
b. *Teams* may not have an assembled second *Robot* on hand at a competition that is used to repair or swap parts with the first *Robot*.
c. *Teams* may not switch back and forth between multiple *Robots* during a competition. This includes using different *Robots* for *Robot Skills Matches*, *Qualification Matches*, and/or *Finals Matches*.
d. Multiple *Teams* may not use the same *Robot*. Once a *Robot* has competed under a given *Team* number at an event, it is "their" *Robot*; no other *Teams* may EVER compete with it.

> ⚠ **Caution**
>
> The intent of <R1a>, <R1b>, and <R1c> is to ensure an unambiguous level playing field for all *Teams*. *Teams* are welcome (and encouraged) to improve or modify their *Robots* between events, or to collaborate with other *Teams* to develop the best possible game solution.
>
> However, a *Team* who brings and/or competes with two separate *Robots* at the same *Tournament* has diminished the efforts of a *Team* who spent extra design time making sure that their one *Robot* can accomplish all of the game's tasks. A multi-*Team* organization that shares a single *Robot* has diminished the efforts of a multi-*Team* organization that puts in the time, effort, and resources to undergo separate individual design processes and develop their own *Robots*.
>
> To help determine whether a *Robot* is a "separate *Robot*" or not, use the subsystem definitions found in R1. Above that, use common sense as referenced in G3. If you can place two complete and legal *Robots* on a table next to each other, then they are two separate *Robots*. Trying to decide if changing a pin, a wheel, or a motor constitutes a separate *Robot* is missing the intent and spirit of this rule. Rules G4 and R2 still apply to both *Robots*.

<R2> Robots must pass inspection. The *Team's Robot* must pass inspection before being allowed to participate in any *Matches*. Noncompliance with any *Robot* design or construction rule will result in removal from *Matches* or *Disqualification* of the *Robot* at an event until the *Robot* is brought back into compliance, as described in the following subclauses.

a. Significant changes to a *Robot*, such as a partial or full swap of Subsystem 3, must be re-inspected before the *Robot* may compete again.
b. All possible functional *Robot* configurations must be inspected before being used in competition. This especially pertains to modular or swappable mechanisms (per R1) and *Match* starting configurations/sizes (per R3).
c. *Teams* may be asked to submit to spot inspections by *Head Referees*. Refusal to submit will result in *Disqualification*.
d. If a *Robot* is determined to not be legal before a *Match* begins and cannot be brought into compliance before the scheduled *Match* start time, the *Robot* will be removed from the *Field*. The *Robot* may remain at the *Field* so that the *Team* does not get assessed a "no-show" (per GG2).
e. *Robots* which have not passed inspection (i.e., that are in *Violation* of one or more *Robot* rules) will not be permitted to play in any *Matches* until they have done so. GG2 will apply to any *Matches* that occur until the *Robot* has passed inspection.
f. If a *Robot* has passed inspection, but is later found to be in *Violation* of a *Robot* rule during or immediately following a *Match*, then they will be *Disqualified* from that *Match* and R2D/GG3 will apply until the *Violation* is remedied and the *Team* is re-inspected. This is the only *Match* that will be affected; any prior *Matches* that have already been completed will not be revisited. R2D will apply until the *Violation* is remedied and the *Team* is re-inspected.
g. All *Robot* Rules are to be enforced at the discretion of the *Head Referee* within a given event. *Robot* legality at one event does not automatically imply legality at future events. *Robots* which rely on "edge-case" interpretations of subjective rules, such as whether a decoration is "non-functional" or not, should expect additional scrutiny during inspection.
h. Event staff and volunteers are allowed to contact and/or photograph *Robots* during inspection and/or at other times as needed.

<R3> Robots must fit within an 11" x 20" x 15" (279.4mm x 508mm x 381.0mm) volume during inspection and at the start of each *Match*.

a. *Teams* using more than one possible *Robot* configuration must tell the inspector(s) and have the *Robot* inspected in all configurations. Rule R2C will apply if a *Robot* is placed in an uninspected

configuration (i.e., will not be permitted to play until re-inspected, but will not be considered a “no-show”).

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*.

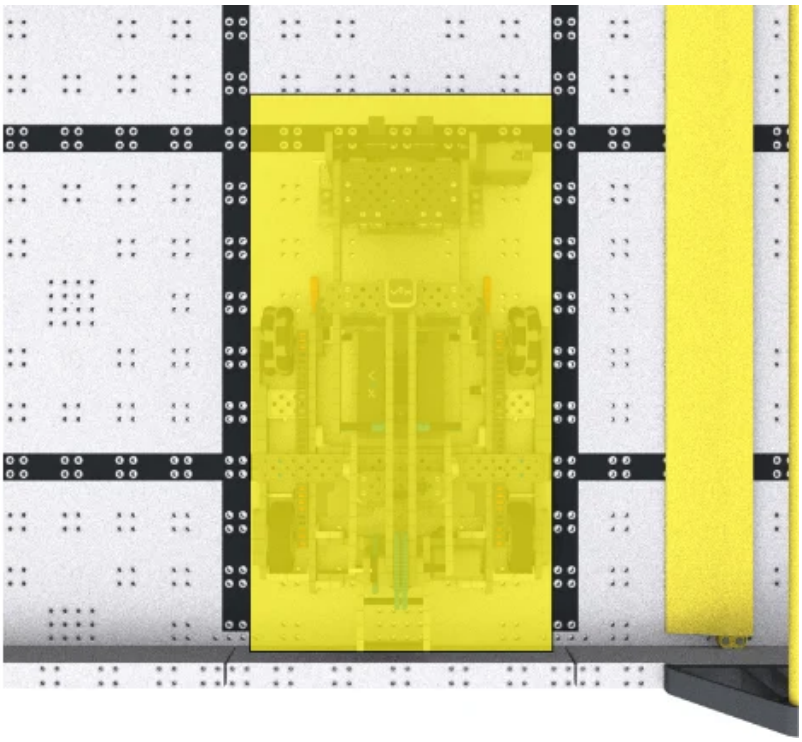


Figure R3-1: The approximate size limit for a *Robot* at the start of a *Match* (highlighted in yellow).

<R4> License Plates. Officially registered *Team* numbers must be legibly displayed on exactly two *Robot License Plates* that are mounted on opposing sides of the *Robot*. *Teams* may use the official VEX IQ Robotics Competition *License Plate* (VEX Part Number 228-7401) or a plain paper version of matching size (3.5″ x 1.5″ / 88.9mm x 38.1mm).

a. *License Plates* are considered functional components, and must meet the requirements of all other *Robot* rules.
b. *License Plates* must be clearly visible at all times. For example, *License Plates* must not be in a position that would be easily obstructed by a *Robot* mechanism during standard *Match* play.
c. Additional *License Plates* cannot be used on the *Robot* for any purpose.

› **Violation Notes:**

1. A *Team* that circumvents a *Robot* rule for a competitive advantage should receive an immediate *Disqualification* for the current *Match*.

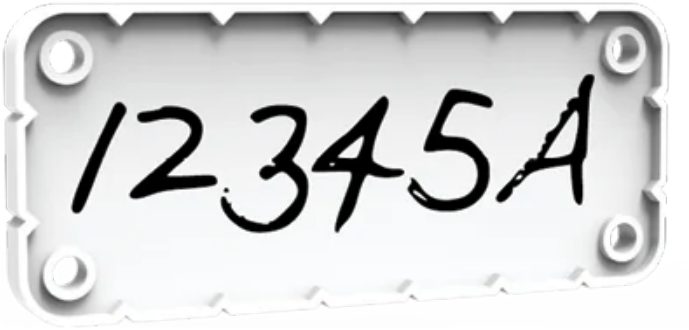


Figure R4-1: A VEX IQ Robotics Competition *License Plate* with a VEX IQ Robotics Competition *Team* number written upon it.

<R5> Let it go after the Match is over. *Robots* must be designed to permit easy removal of *Scoring Objects* from their *Robot* without requiring that the *Robot* have power or remote control after the *Match* is over.

<R6> Robots have one Brain. *Robots* are limited to one VEX IQ *Robot* Brain. Any other microcontrollers or processing devices are not allowed, even as non-functional decorations.

This includes microcontrollers that are part of other VEX product lines, such as VEX Cortex, VEX EXP, VEXpro, VEX CTE, VEX RCR, VEX V5, VEX GO, or VEX Robotics by HEXBUG∗. This also includes devices that are unrelated to VEX, such as Raspberry Pi or Arduino devices.

a. If using a first generation VEX IQ Brain, *Robots* must use one VEX IQ 900 MHz radio, VEX IQ 2.4 GHz radio, or VEX IQ Smart Radio in conjunction with their VEX IQ *Robot* Brain. The VEX IQ Brain and VEX IQ Controller may not be physically connected during a *Match*, and may only communicate through the radio.
b. Additional *Robot* Brains cannot be used on the *Robot* (even *Robot* Brains that are not connected).

<R7> Design for easy troubleshooting. *Teams* are encouraged to design their *Robots* such that the *Robot* Brain's screen and status light are visible, and that the power button and *Robot* Battery are accessible, without disassembling any part of the *Robot*.

Keeping these key components visible and accessible makes it easier to diagnose and troubleshoot issues quickly, minimizing downtime and ensuring a smooth competition experience.

This rule is intentionally a recommendation, not a requirement. There is no inspection criterion or *Match* penalty associated with this rule.

<R8> Firmware. *Teams* must use VEXos version 2.2.1 or newer on Gen1 Brains, or VEXos version 1.0.8 or newer on Gen2 Brains. The latest firmware can be found at https://link.vex.com/firmware. Custom firmware modifications are not permitted.

a. The minimum version requirement is subject to change over the course of the season.
b. When the minimum version is updated, *Teams* have a two week (14 calendar day) grace period from the time the minimum version is changed to update their firmware to the latest minimum version.
c. VEX Robotics reserves the right to deem any firmware update critical, and remove the allowable grace period.

<R9> Motors. *Robots* may use up to six VEX IQ Smart Motors.

a. Additional motors cannot be used on the *Robot* (even motors that aren't connected).

<R10> Batteries. The only allowable sources of electrical power for a VEX IQ Robotics Competition *Robot* are one VEX IQ *Robot* Battery (first or second generation) or six AA batteries via the *Robot* AA Battery Holder (228-3493).

a. Additional batteries cannot be used on the *Robot* (even batteries 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 as GG1)

> ⚠ **Caution**
>
> Note: Although it is legal, the *Robot* AA Battery Holder (228-3493) is not recommended for use in the VEX IQ Robotics Competition.

<R11> One Controller per Robot. No more than one VEX IQ Controller may control a single *Robot*.

a. No physical or electrical modification of the Controller is allowed under any circumstances.
    i. Attachments which assist the *Drivers* in holding or manipulating buttons/joysticks on the IQ Controller (including 3D-printed controller attachments) are permitted, provided that they do

not involve direct physical or electrical modification of the Controller itself.

b. No other methods of controlling the *Robot* (light, sound, etc.) are permissible.
   i. Using sensor feedback to augment *Driver* control (such as motor encoders or the Vision Sensor) is permitted.
   ii. See RSC5, RSC6, and RSC7 for more information about operating the *Robot* during *Autonomous Coding Skills Matches*.

<R12> Robots are built from the 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. To determine whether or not a product is "official" and legal for competition use, consult the following sources:
   i. VEX IQ Robotics Competition Legal / Illegal Parts List
   ii. www.vexiq.com
b. If an inspector or *Head Referee* questions whether something is an official VEX IQ component, the *Team* will be required to provide documentation that proves the component's source. Such documentation may include receipts, part numbers, or other printed documentation.
c. Only 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 Robotics Competition *Robot*).
d. 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 R12B.
e. Additional VEX IQ products that are released during the season are legal for use, unless otherwise noted on their product pages.
f. VEX IQ Smart Cables may only be used for connecting legal electronic devices to the VEX IQ *Robot* Brain.

> ⚠ **Caution**
>
> Note: A comprehensive list of legal VEX IQ parts can be found in the VEX IQ Robotics Competition Legal Parts List, at https://link.vex.com/docs/viqrc/legal-parts. This Appendix is updated as needed if/when new VEX IQ parts are released, and may not coincide with scheduled Game Manual updates.

<R13> Prohibited items. The following types of mechanisms and components are NOT allowed:

a. Those that could potentially damage *Field Elements* or *Scoring Objects*.

b. Those that could potentially damage or entangle other *Robots*.

c. Tape and/or any other material that adheres to or changes a legal part, other than for labeling hardware as permitted by R14H or non-functional decorations as permitted by R15.

d. Products from the VEX 123, VEX V5, VEX CTE, VEX EXP, Cortex, or VEXpro product lines, unless specifically allowed by a clause of R14.

e. Electrical components from the VEX Robotics by HEXBUG* product line.

f. Electrical components from the VEX GO product line.

g. 3D printed parts for any purpose, including *License Plates*, *License Plate* holders, and non-functional decorations.

h. Additional illegal parts are listed in the VEX IQ Robotics Competition Legal / Illegal Parts List, at https://link.vex.com/docs/viqrc/illegal-parts. This Appendix is updated as needed, and may not coincide with scheduled Game Manual updates.

<R14> Legal Non-VEX IQ components. *Robots* are allowed to use the following additional components from sources other than VEX Robotics:

a. Rubber bands no larger than 7.5″ long and 0.25″ wide.

b. ⅛″ metal shafts from the VEX V5 product line.

c. Other products from the VEX V5 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.

d. Mechanical/structural components from the VEX Robotics by HEXBUG* product line are legal for *Robot* construction.

e. Mechanical/structural components from the VEX GO product line are legal for *Robot* construction.

f. Aerosol-based cooling/freeze spray may be used to assist in cooling motors. *Teams* using freeze spray or similar products in ways that may reasonably be deemed unsafe could be subject to S1 *Violations*.

g. Cleaners, disinfectants, and/or sanitizers may be used to assist in cleaning *Robots*, parts, components, etc. VEX Robotics recommends these procedures for cleaning/disinfecting/sanitizing *Robot* parts.

h. A limited amount of tape is allowed for the sole purpose of labeling motors, *Robot* Brains, and/or controllers.

i. Food-safe lubricants (grease, oils, or other lubricants) may be used on *Robots*, provided they are used in moderation and cannot contaminate the *Field*, other *Robots*, *Field Elements*, and/or *Scoring Objects*.

<R15> Decorations are allowed. *Teams* may add non-functional decorations, provided that they do not affect *Robot* performance in any significant way or affect the outcome of the *Match*. These decorations must be in the spirit of the competition. Inspectors and *Head Referees* will have final say in what is considered "non-functional." Unless otherwise specified below, non-functional decorations are governed by all standard *Robot* rules.

a. Decorations must be in the spirit of an educational competition.
b. To be considered "non-functional," any decorations must be backed by legal materials that provide the same functionality. For example, a giant decal cannot be used to prevent *Scoring Objects* from falling out of the *Robot* unless it is backed by VEX IQ material. A simple way to check this is to determine if removing the decoration would impact the performance of the *Robot* in any way.
c. The use of non-toxic paint is considered a legal non-functional decoration. However, any paint used as an adhesive or to impact how tightly parts fit together would be classified as functional. *Teams* should be mindful of any non-functional decorations which could risk "distracting" an *Alliance* partner *Robot's* Vision Sensor or other sensors.

<R16> Pneumatics. *Robots* using parts from the VEX IQ Pneumatics Kit (228-8795) must satisfy all of the following criteria:

a. No more than two Air Tanks, including any that aren't connected.
b. No more than one Air Pump, including any that aren't connected.
c. No additional parts that are not included in the VEX IQ Pneumatics Kit (e.g., unofficial tubing or fittings).
d. *Teams* may not use other elements for the purposes of storing or generating air pressure, and cannot use Pneumatic Cylinders or additional tubing solely for additional air storage. *Robots* are limited to the air pressure stored in two Air Tanks, as well as the normal working air pressure contained in any Pneumatic Cylinders and tubing on the *Robot*.
e. *Teams* can only use Pneumatic Cylinders and/or tubing as part of an actual pneumatic system (e.g., Air Tanks and/or an Air Pump).

There is no limit on the number of Pneumatic Cylinders or Pneumatic Solenoids that may be used, provided that no other rules are violated. There are no restrictions on running the Air Pump prior to (or during) *Matches*.

<R17> Modifications of parts. Parts may NOT be modified unless specifically listed as an exception in this rule. Examples of illegal modifications include, but are not limited to, bending, cutting, sanding, gluing, taping, and melting. The following exceptions are the only legal modifications of parts:

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.

c. Cutting VEX IQ pneumatic tubing to custom lengths.

d. Tying knots to shorten or connect string or rubber bands.

Section 5 - The Event

Overview

The VEX IQ Robotics Competition consists of *Teamwork Matches*, *Robot Skills Matches*, and optional judging. This section describes how *Teamwork Matches* and *Robot Skills Matches* are to be played at a given event.

Awards may be given to top *Teams* in each format, as applicable. Awards may also be given for overall performance in the judged criteria.

Tournament Rules

<T1> Head Referees have ultimate and final authority on all gameplay and Robot ruling decisions during the competition. *Head Referees* are the only individuals permitted to explain a rule, *Disqualification*, or *Violation* to the *Teams* in a *Teamwork Match*.

a. *Scorekeeper Referees* score the *Match*, and may serve as observers or advisers for the *Head Referees*, but may not determine any *Violations* directly.
b. When issuing a *Disqualification* or *Violation* to a *Team*, the *Head Referee* should attempt to notify the *Team* as the *Violation* occurs, and after the *Match* must provide the rule number of the specific rule that has been Violated and record the *Violation* in the *Match* Anomaly Log.
c. *Event Partners* may not overrule a *Head Referee's* gameplay or *Robot* decisions.
d. Every *Qualification Match* and *Finals Match* must be watched by a certified *Head Referee*. A *Head Referee* may only watch one *Match* at a time; if multiple *Matches* are happening simultaneously on separate *Fields*, each *Field* must have its own *Head Referee*.
e. At a minimum, every *Robot Skills Match* must be watched by a trained *Scorekeeper Referee*, who may only watch one *Match* at a time. If multiple *Robot Skills Matches* are happening simultaneously on separate *Fields*, each *Field* must have its own *Scorekeeper Referee*. A certified *Head Referee* must be available at the event to explain a rule, *Disqualification*, *Violation*, or other penalty to *Teams* in *Robot Skills Matches* as needed in support of the *Scorekeeper Referees* at skills *Fields*.
f. *Head Referees* must follow the rules in this game manual and the Q&A, and must make rulings consistent with the intent of the game manual and Q&A.

g. Referees are not permitted to review any photo or video *Match* recordings when determining a score or ruling.

> ⚠ **Caution**
>
> Note from the VEX *Game Design Committee*: The rules contained in this Game Manual are written to be enforced by human *Head Referees*. Many rules have clear "black-and-white" criteria that can be easily checked. However, some rulings will rely on a judgment call from this human *Head Referee*. In these cases, *Head Referees* will make their calls based on what they and the *Scorekeeper Referees* saw, what guidance is provided by their official support materials (this Game Manual and the Q&A), and most crucially, the context of the *Match* in question.
>
> The VEX IQ Robotics Competition does not have video replay, our *Fields* do not have absolute sensors to count scores, and events do not have time for extensive review conferences between each *Match*.
>
> When an ambiguous rule results in a controversial call, there is a natural instinct to wonder what the "right" ruling "should have been," or what the *Game Design Committee* "would have ruled." This is ultimately an irrelevant question; our answer is that when a rule specifies "*Head Referee's* discretion" (or similar) the correct call is the one that was made by the *Head Referee* in the moment. The VEX *Game Design Committee* designs games, and writes rules, with this expectation (constraint) in mind.

<T2> Head Referees must be qualified. VEX IQ *Head Referees* must have all of the following qualifications:

a. Be at least 16 years of age.
b. Be approved by the *Event Partner*.
c. Be a certified VEX IQ Robotics Competition*Head Referee* for the current season.
d. Cannot be the *Event Partner* or a Judge Advisor for the event.

> ⚠ **Caution**
>
> Note: *Scorekeeper Referees* must be at least 15 years of age, and must be approved by the *Event Partner*.

<T3> The Drive Team Members are permitted to immediately appeal the Head Referee's ruling. If *Drive Team Members* wish to dispute a score or ruling, they must stay in the *Driver Station* until the *Head*

Referee talks with them. The *Head Referee* may then choose to meet with the *Drive Team Members* at another location and/or at a later time so that the *Head Referee* has time to reference materials or resources to help with the decision.

Once the *Head Referee* announces that their decision has been made final, the issue is over and no more appeals may be made (see rule T1); failure to accept this final decision may be considered a G1 *Violation*. There is no system or opportunity for an appeal of the *Head Referee's* final decision, either at or after the event.

a. Referees are not permitted to review any photo or video *Match* recordings when determining a score or ruling. Some events may also prohibit *Drive Team Members* from reviewing photo or video *Match* recordings while in the *Driver Station*; this should be announced to all *Teams* before *Matches* start.
b. *Head Referees* are the only individuals permitted to explain a rule, *Disqualification*, or *Violation* to the *Teams* in a *Teamwork Match*. *Teams* should never consult other field personnel, including *Scorekeeper Referees*, regarding a ruling clarification.

Communication and conflict resolution skills are an important life skill for *Students* to practice and learn. In the VEX IQ Robotics Competition, we expect *Students* to practice proper conflict resolution using the proper chain of command. *Violations* of this rule may be considered a *Violation* of G1

> **⚠ Caution**
>
> Some events may choose to utilize a "question box" or other designated location for discussions with *Head Referees*. Offering a "question box" is within the discretion of the *Event Partner* and/or *Head Referee*, and may act as an alternate option for asking *Drive Team Members* to remain in the *Driver Station* (although all other aspects of this rule apply).
>
> However, by using this alternate location, *Drive Team Members* acknowledge that they are forfeiting the opportunity to use any contextual information involving the specific state of the *Field* at the end of the *Match*. For example, it is impossible to appeal whether a game element was scored or not if the *Field* has already been reset. If this information is pertinent to the appeal, *Drive Team Members* should still remain in the *Driver Station*, and only relocate to the "question box" once the *Head Referee* has been made aware of the concern and/or any relevant context.

<T4> The Event Partner has ultimate authority regarding all non-gameplay decisions during an event. The Game Manual is intended to provide a set of rules for successfully playing VEX IQ Robotics Competition Level Up; it is not intended to be an exhaustive compilation of guidelines for running a VEX

IQ Robotics Competition event. Rules such as, but not limited to, the following examples are at the discretion of the *Event Partner* and should be treated with the same respect as this Game Manual:

- Venue access
- Pit spaces and access
- Health and safety
- *Team* registration and/or competition eligibility
- *Team* conduct away from competition *Fields*

> ⚠ **Caution**
>
> This rule exists alongside G1, S1, and G3. Even though there isn't a rule that says "do not steal from the concession stand," it would still be within an *Event Partner's* authority to remove a thief from the competition.

<T5> Be prepared for minor field variance. *Field Element* tolerances and *Scoring Object* positions may vary from nominal by up to ±0.5" [12.7mm], unless otherwise specified. *Teams* are encouraged to design their *Robots* accordingly. Please make sure to check Appendix A for more specific nominal dimensions and tolerances.

> ⚠ **Caution**
>
> The *Field* and *Field Elements* are designed to be assembled and disassembled multiple times each year. *Event Partners* store and transport *Fields* between events, and the individuals setting up the *Field* at one event may differ from those at the next. While every effort will be made to ensure minimal variance, *Teams* should expect that any *Field* may be slightly different than another, and prepare accordingly. Just because something works on one *Field* does not fully guarantee it will work on the next, and is not enough evidence alone to determine if a *Field* is out of tolerance.

<T6> Fields and Field Elements may be repaired at the Event Partner's discretion. All competition *Fields* and other *Field Elements* at an event must be set up in accordance with the specifications in Appendix A and/or other applicable support materials. Minor aesthetic customizations or repairs are permitted, provided that they do not impact gameplay (see T4).

Examples of permissible modifications include, but are not limited to:

- Replacing a damaged or missing VEX IQ component with an identical part of any color

- Elevating the playing *Field* off of the floor (common heights are 10″ to 24″ [254mm to 609.6mm])
- Using off-the-shelf PVC to replace a damaged or missing pipe
- Small markings on *Field Elements* and *Scoring Objects* to identify ownership
- Placing *Field* display monitors outside of the *Field* walls
- Adding decorations to the outside of the *Field* walls or risers (e.g., LED lights, sponsor banners)
- Using 0x2 or 0x3 Pins fully inserted into tiles to mark *Bean Bag* starting locations for field reset. Using colored pins that match the corresponding *Bean Bags* is recommended but not required
- Repairing a *Bean Bag* that has been ripped open by sewing it back together
- Using clear packing tape to repair damaged Pyramid Goal or L4 Goal plastic sheets

Modifications that may impact *Robot* functionality and/or how the game is played are generally not allowed. Examples of prohibited modifications include, but are not limited to:

- Unofficial *Field Floor* and/or walls, additional structural elements inside of the *Field*, or unofficial/replica *Field Elements*
- Significant/large markings on *Scoring Objects* that could positively or negatively affect *Robot* sensors

Any specific repairs and/or modifications which pertain to the current season's game will be documented in this rule and Appendix A, as needed.

<T7> Fields at an event must be consistent with each other. There are many types of permissible aesthetic and/or logistical modifications that may be made to competition *Fields* at the *Event Partner's* discretion (see T6). If an event has multiple *Teamwork Match Fields*, they must all incorporate the same permissible modifications. If an event has multiple *Robot Skills Match Fields*, they must all incorporate the same permissible/applicable modifications. For example, if one *Teamwork Match Field* is elevated, then all *Teamwork Match Fields* must be elevated to the same height.

> ⚠ **Caution**
>
> Note: If an event has dedicated *Fields* for *Robot Skills Matches*, there is no requirement for them to have the same consistent modifications as the *Teamwork Match Fields*. See T16 for more details.

<T8> Qualification Matches will occur according to the official Match schedule. This schedule will indicate *Alliance* partners, *Qualification Match* times, and, if the event has multiple *Fields*, which *Field* each *Qualification Match* will be played on.

a. Practice Matches may be included in the *Match Schedule* at some events, but are not required. If Practice Matches are run, every effort must be made to equalize practice time for all *Teams*.
b. A *Qualification Match* can only start before its scheduled time if all *Teams*, *Robots*, and assigned volunteers are at the *Field* and ready to play.
c. Any multi-division event must be approved by VEX Robotics prior to the event, and divisions must be assigned in sequential order by *Team* number.
d. The official *Match Schedule* is subject to changes at the *Event Partner's* discretion. Events should generally wait to generate the *Match Schedule* until all *Teams* have checked in and passed *Robot* inspection, or when it has been confirmed that *Teams* will not be participating.
e. If a *Team* must be removed from the *Finals Match* schedule after Finals *Alliances* have been formed (see T12B), the *Event Partner* can use the full-event *Disqualification* feature in TM to remove that *Team* from their scheduled *Finals Match*. Their spot in the Finals *Alliance* will be filled manually by the *Event Partner* by the next-highest-ranked *Team* that is not already in a Finals *Alliance*. If that *Team* is unavailable or unwilling to participate, the *Event Partner* can manually select the next-highest-ranked and available *Team*. If no replacement *Team* is available, the remaining half of that *Alliance* will play alone.

<T9> Each Team will be scheduled Qualification Matches as follows.

a. A *Tournament* must include a minimum of six *Qualification Matches* per *Team* at local qualifying events or eight *Qualification Matches* per *Team* at a Championship event.
b. A league must include at least three league ranking sessions, with at least one week between sessions. Each session must include a minimum of two *Qualification Matches* per *Team* at that session. The suggested number of *Qualification Matches* per *Team* for a standard league ranking session is four. *Event Partners* may also choose to have *Qualification Matches* as part of their league finals session.

<T10> Teams are ranked by their average Qualification Match scores.

a. When in a *Tournament*, every *Team* will be ranked based on the same number of *Qualification Matches*.
b. For *Tournaments* that have more than one division, *Teams* will be ranked among all *Teams* in their specific division.
c. When in a league, every *Team* will be ranked based on the number of *Matches* played. *Teams* that participate in less than 60% of the total *Matches* available will be ranked below *Teams* that participate in at least 60% of the total *Matches* available (e.g., if the league offers 3 ranking

sessions with 4 *Qualification Matches* per *Team*, *Teams* that participate in 8 or more *Matches* will be ranked higher than *Teams* who participate in 7 or fewer *Matches*). Being a no-show to a *Match* that a *Team* is scheduled in still constitutes participation for these calculations.

d. A certain number of a *Team's* lowest *Qualification Match* scores will be excluded from the rankings based on the quantity of *Qualification Matches* each *Team* plays. Excluded scores do not affect participation for leagues. "No show" *Matches*, as described in GG2, are not considered lowest scores for the purposes of calculating a *Team's Qualification Match* ranking and will never be excluded from the calculation.
e. In some cases, a *Team* will be asked to play an additional *Qualification Match*. The extra *Match* will be identified on the *Match Schedule* with an asterisk and will not impact the *Team's* ranking (or participation for leagues). *Teams* are reminded that G1 is always in effect and *Teams* are expected to behave as if the additional *Qualification Match* counted.

Number of *Qualification Matches* per *Team*	Number of excluded *Match* scores
4-7	1
8-11	2
12-15	3
16+	4

<T11> Qualification Match tiebreakers. In the case of tied scores, *Team* rankings are determined throughout *Qualification Matches* by:

a. Removing the *Team's* lowest score and comparing the new average score.
b. Removing the *Team's* next lowest score and comparing the new average score (on through all scores).
c. If the *Teams* are still tied, the *Teams* will be sorted by random electronic draw.

<T12> How Alliances are formed for Teamwork Matches. During each *Teamwork Match*, two (2) *Teams* form an *Alliance* that will play on the *Field*.

a. *Qualification Match Alliances* are randomly assigned by the tournament software.
b. *Finals Match Alliances* are assigned as follows based on *Teams'* rankings after all *Qualification Matches* have concluded (see T10):
    i. The first- and second-ranked *Teams* form an *Alliance*.

ii. The third- and fourth-ranked *Teams* form an *Alliance*.

iii. And so on, until all *Teams* participating in *Finals Matches* (see T13) have formed an *Alliance*.

c. If a *Team* must be removed from the *Finals Match* schedule after Finals *Alliances* have been formed (see T12B), the *Event Partner* can use the full-event *Disqualification* feature in TM to remove that *Team* from their scheduled *Finals Match*. Their spot in the Finals *Alliance* will be filled manually by the *Event Partner* by the next-highest-ranked *Team* that is not already in a Finals *Alliance*. If that *Team* is unavailable or unwilling to participate, the *Event Partner* can manually select the next-highest-ranked and available *Team*. If no replacement *Team* is available, the remaining half of that *Alliance* will play alone.

<T13> Teams playing in Finals Matches. The number of *Finals Matches*, and therefore the number of *Teams* who will participate in *Finals Matches*, is determined by the *Event Partner*. Events that qualify *Teams* directly to the VEX Robotics World Championship must have a minimum of five *Finals Matches* per division if there are ten or more *Teams* in attendance.

<T14> Finals Match Schedule. *Finals Matches* are played sequentially, starting with the lowest-ranked *Alliance*. Each *Alliance* will participate in one *Finals Match*. The *Alliance* with the highest *Finals Match* score is the *Teamwork Champions*.

a. *Alliances* are ranked by their *Finals Match* score. The highest-scoring *Alliance* is in first place, the second-highest-scoring *Alliance* is in second place, etc.

b. Ties for first place will result in a series of tiebreaker *Finals Matches*, starting with the lower-seeded *Alliance*. The *Alliance* with the highest tiebreaker *Finals Match* score will be declared the *Teamwork Champions*.

i. If the tiebreaker *Finals Match* scores are tied, the *Alliance* with the higher *Match Stop Time* will be declared the winner.

ii. If the *Match Stop Time* is also tied, a second series of tiebreaker *Finals Matches* will be played. If this second series of tiebreaker *Finals Match* is also tied, then the higher-seeded *Alliance* will be declared the winner.

c. If there is a tie for a place other than first, the higher-seeded *Alliance* will receive the higher rank.

d. For *Tournaments* that have more than one division, each division will have its own set of *Finals Matches*. The winners of each division will then have an overall event Finals.

> **⚠ Caution**
>
> Example 1: *Alliance* 6 and *Alliance* 3 are tied for first place. During the tiebreaker *Finals Match*, *Alliance* 6 scores 13 points and has a *Match Stop Time* of 12 seconds. *Alliance* 3 scores 13 points and has a *Match Stop Time* of 10 seconds. *Alliance* 6 is the Teamwork Challenge winner.
>
> Example 2: *Alliance* 4 and *Alliance* 5 are tied for third place. *Alliance* 4 is the third place winner and *Alliance* 5 is the fourth place winner. In this way, the lower ranked *Alliance* must "overcome" the higher ranked *Alliance* in order to become the Teamwork Challenge champion.

<T15> Skills Match Schedule. *Teams* play *Robot Skills Matches* on a first-come, first-served basis. Each *Team* will get the opportunity to play exactly three Driving Skills Matches and three *Autonomous Coding Skills Matches* at each *Tournament* and/or League Session.

Teams should review the event agenda and their *Match Schedule* to determine when the best possible time is to complete their *Robot Skills Matches*. If the *Robot Skills Match* area closes before a *Team* has completed all six *Robot Skills Matches*, but it is determined that there was adequate time given, then the *Team* will automatically forfeit those unused *Matches*.

a. *Robot Skills Matches* are only available to *Teams* who participate in *Qualification Matches*, unless the event is an approved Skills-Only Event. *Teams* who participate in *Qualification Matches* during a specific League Ranking Session are the only *Teams* who can participate in *Robot Skills Matches* at that session.
b. Skills scores recorded by ineligible *Teams* will be deleted from *Tournament* Manager before the event is finalized on events.vex.com.

<T16> There is no requirement that Robot Skills Match fields have the same consistent modifications as the Teamwork fields. For example, there is no requirement that *Robot Skills Match Fields* are elevated to the same height as *Teamwork Match Fields*.

In order to use non-conforming *Teamwork Match Fields* for *Robot Skills Matches* (e.g. during lunch), the following steps should be taken:

- *Teams* must be informed that the *Teamwork Match Fields* may have some differences from the *Robot Skills Match Fields* (e.g., they might be elevated).
- *Teams* must be given an opportunity to select which type of *Field* they want to use, i.e. they cannot be required to use a Teamwork *Field* for any *Robot Skills Match*.

<T17> Skills Rankings at events. *Teams* will be ranked at an event based on the following scores and tiebreakers:

a. Sum of highest *Autonomous Coding Skills Match* score and highest Driving Skills Match Score.
b. Highest *Autonomous Coding Skills Match* score.
c. Second-highest *Autonomous Coding Skills Match* score.
d. Second-highest Driving Skills Match score.
e. Highest sum of *Skills Stop Times* from a *Team's* highest *Autonomous Coding Skills Match* and highest Driving Skills Match (i.e., the *Matches* in point 1).
f. Highest *Skills Stop Time* from a *Team's* highest *Autonomous Coding Skills Match* (i.e., the *Match* in point 2).
g. Third-highest *Autonomous Coding Skills Match* score.
h. Third-highest Driving Skills Match score.
i. If the tie cannot be broken after all above criteria (i.e., both *Teams* have the exact same scores and *Skills Stop Times* for each *Autonomous Coding Skills Match* and Driving Skills Match), then the following ordered criteria will be used to determine which *Team* had the "best" *Autonomous Coding Skills Match*:
    i. Points for *Bean Bags* on the L4 Goal.
    ii. Points for *Bean Bags* in the L3 Goal.
    iii. Points for *Bean Bags* in the L2 Goal.
j. If the tie still cannot be broken, the same process in the step above will be applied to the *Teams*' highest Driving Skills Matches.
k. 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.

<T18> Skills Rankings globally. *Teams* are ranked based on their *Robot* Skills scores from *Tournaments* and Leagues that upload results to events.vex.com, according to the following tiebreakers.

a. Highest *Robot* Skills score (combined *Autonomous Coding Skills Match* and Driving Skills Match Score from a single event).
b. Highest *Autonomous Coding Skills Match* score (from any event).
c. Highest sum of *Skills Stop Times* from the *Robot Skills Matches* used for point 1.
d. Highest *Skills Stop Time* from the *Autonomous Coding Skills Match* used for point 2.
e. Highest Driving Skills Match score (from any event).
f. Highest *Skills Stop Time* from the Driving Skills Match score used in point 5.

g. Earliest posting of the highest *Autonomous Coding Skills Match* score. The first *Team* to post a score ranks ahead of other *Teams* that post the same score at a later time, all else being equal.

h. Earliest posting of the highest Driving Skills Match score. The first *Team* to post a score ranks ahead of other *Teams* that post the same score at a later time, all else being equal.

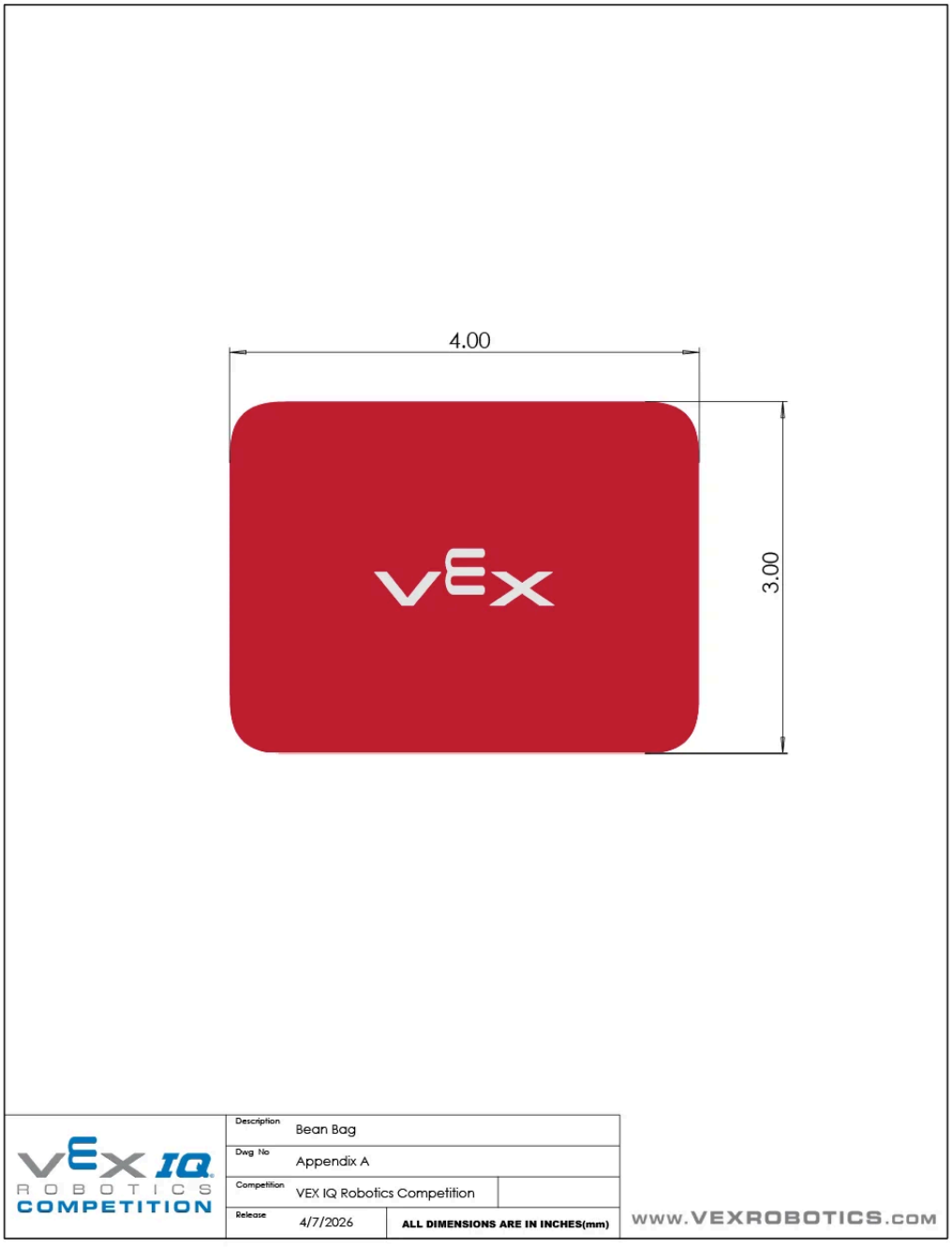
<T19> Robot Skills at League Events. At league events in which *Teams* may submit *Robot* Skills Challenge scores across multiple sessions, the *Robot* Skills scores (combined highest *Autonomous Coding Skills Match* and Driving Skills Match scores) used for rankings will be calculated from *Matches* within the same session.

For example, consider the following scores for a hypothetical *Team* across two league event sessions:

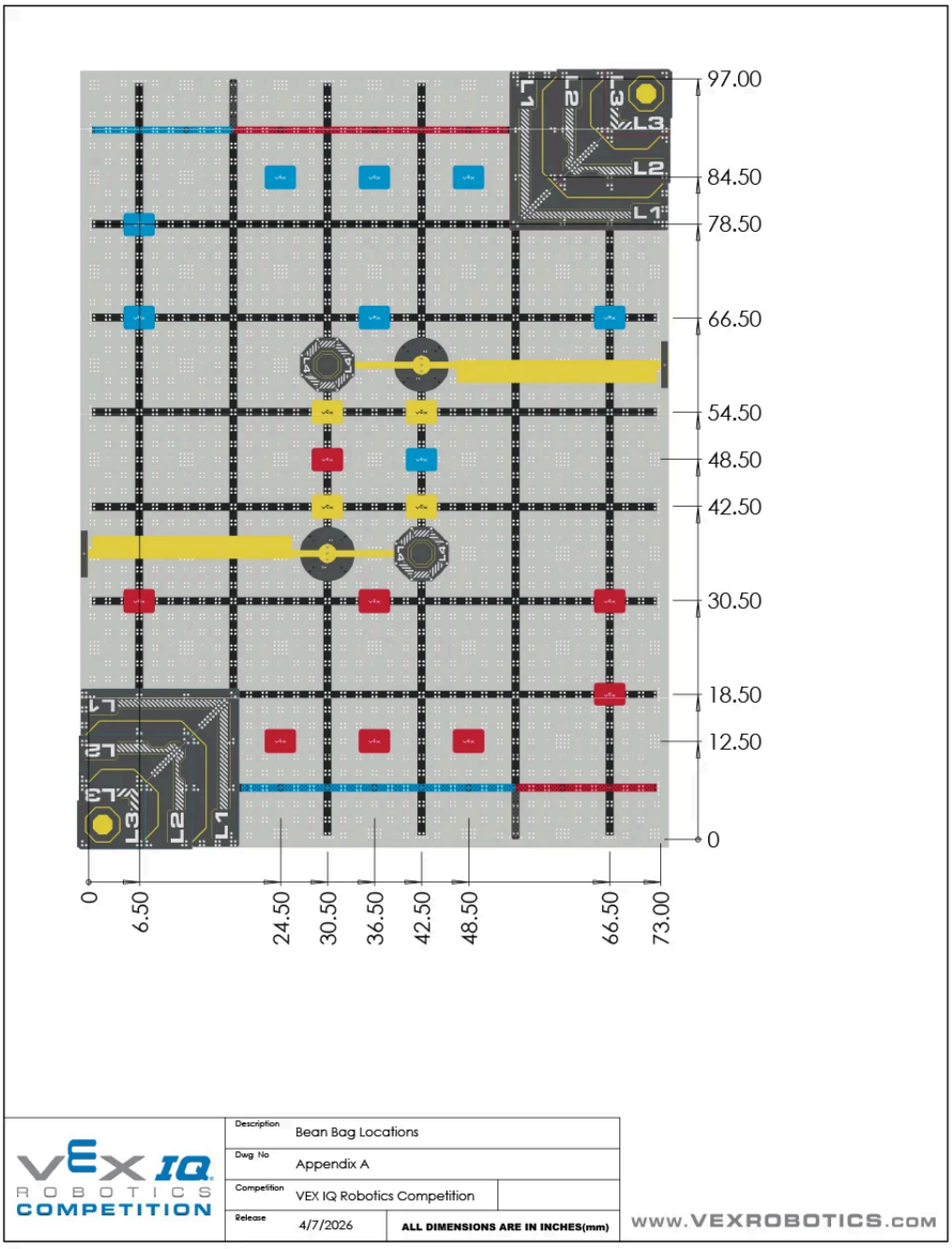
	Autonomous Coding Skills Match	**Driving Skills Match**	***Robot* Skills Score**
Session 1	25	45	70
Session 2	30	42	72

This *Team* would have a *Robot* Skills score of 72 for this event's rankings, and their scores from Session 2 would be used for the event and global tiebreakers listed in T17 and T18.

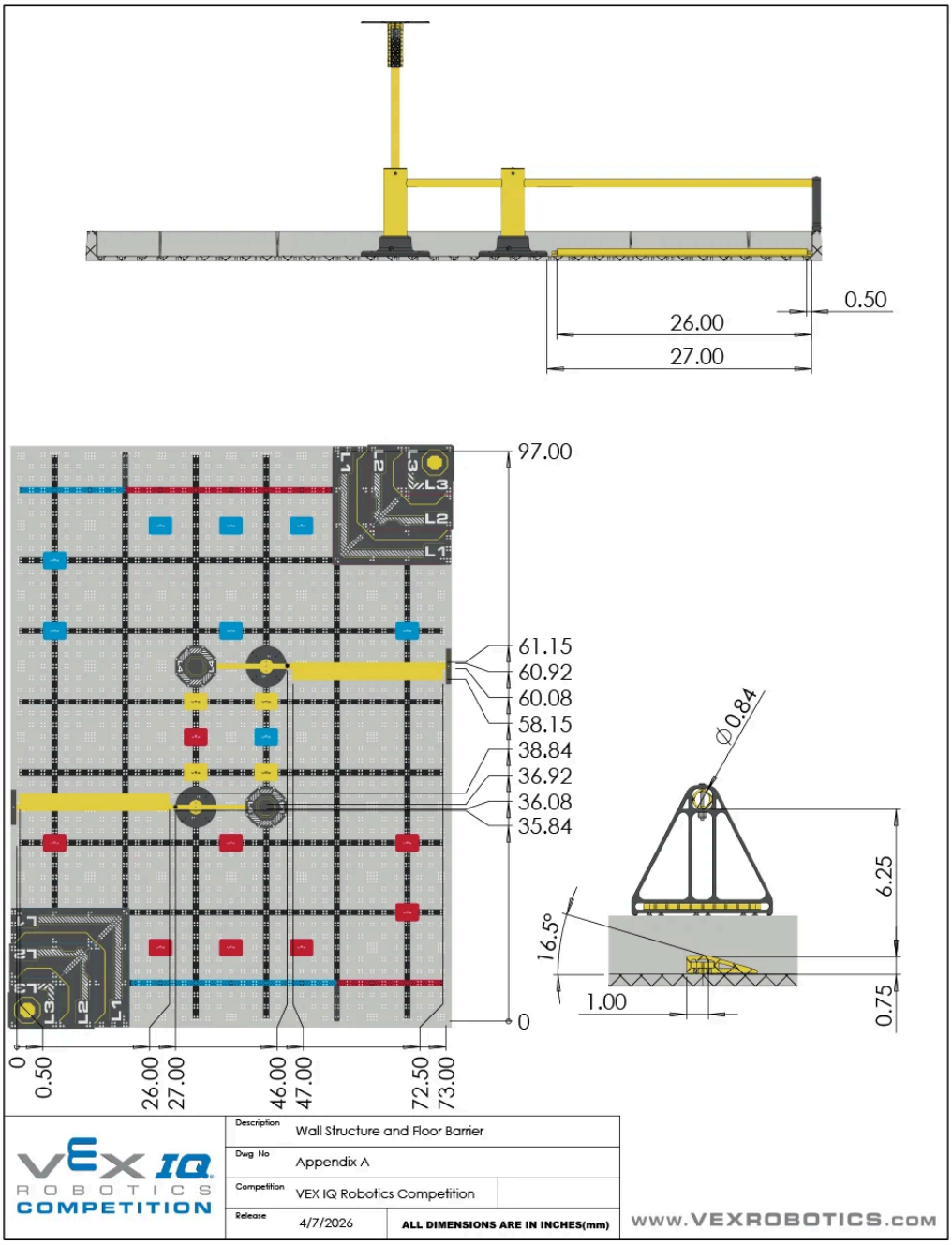
Appendix A - Field Overview



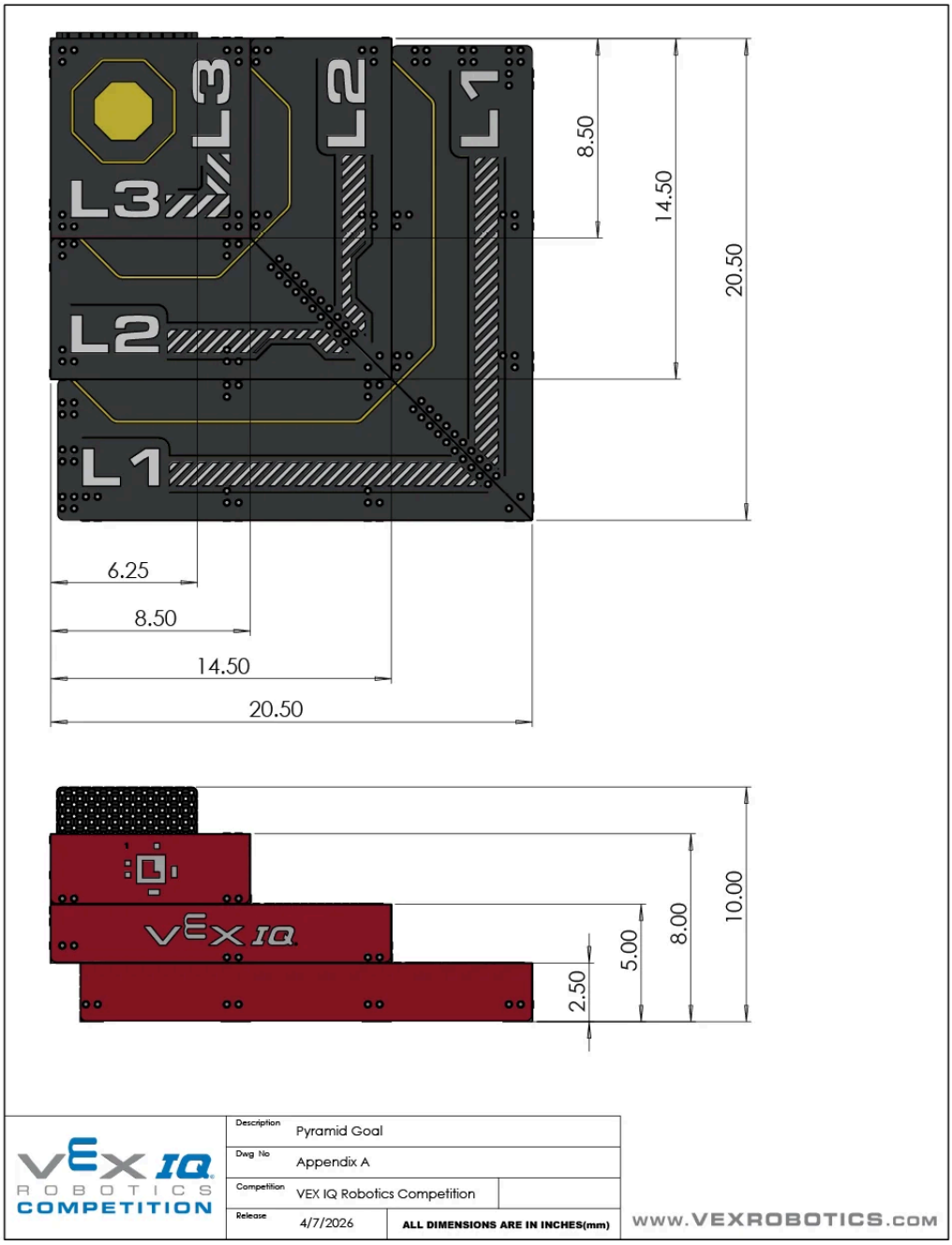
Bean Bag scoring object.



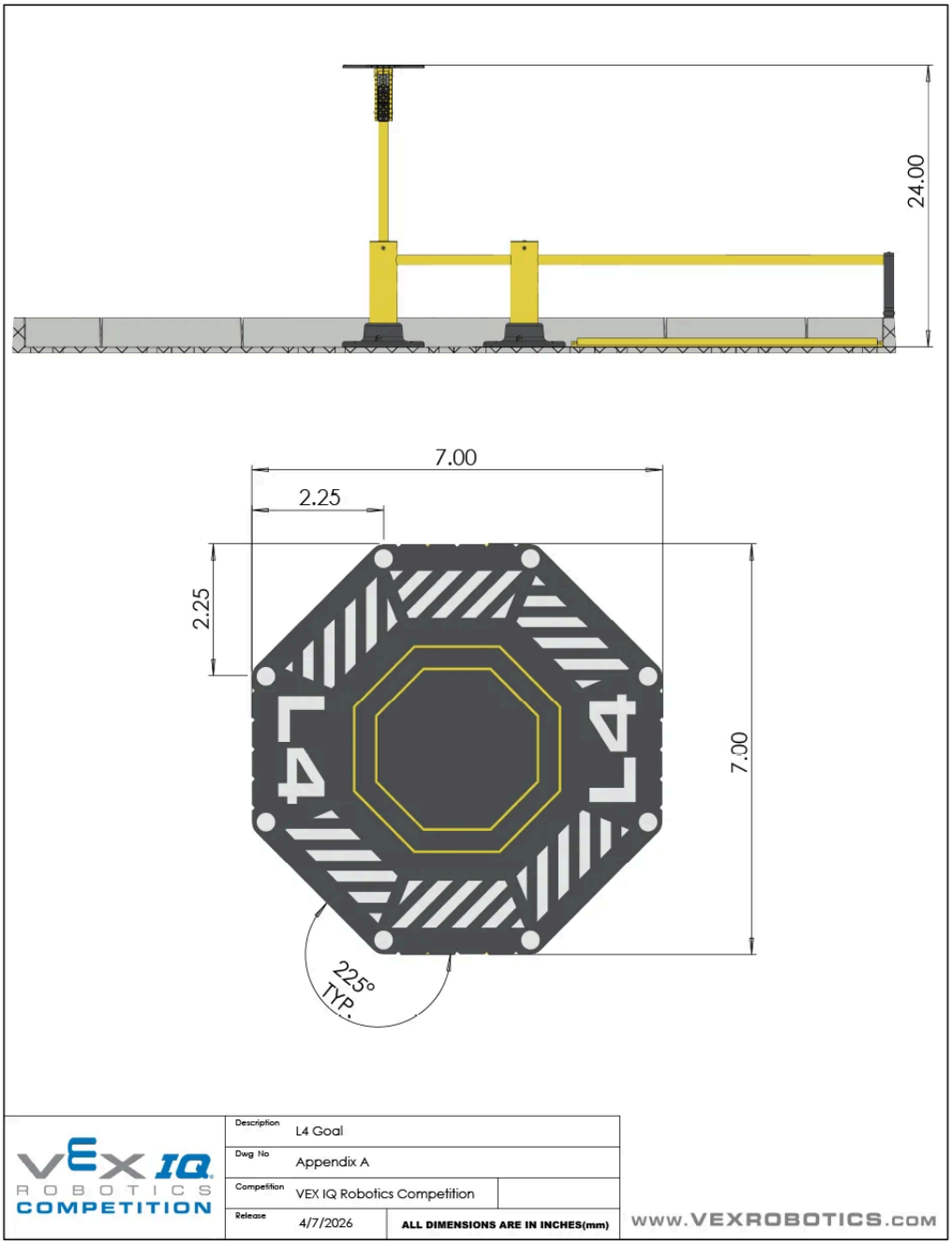
Starting Bean Bag locations.



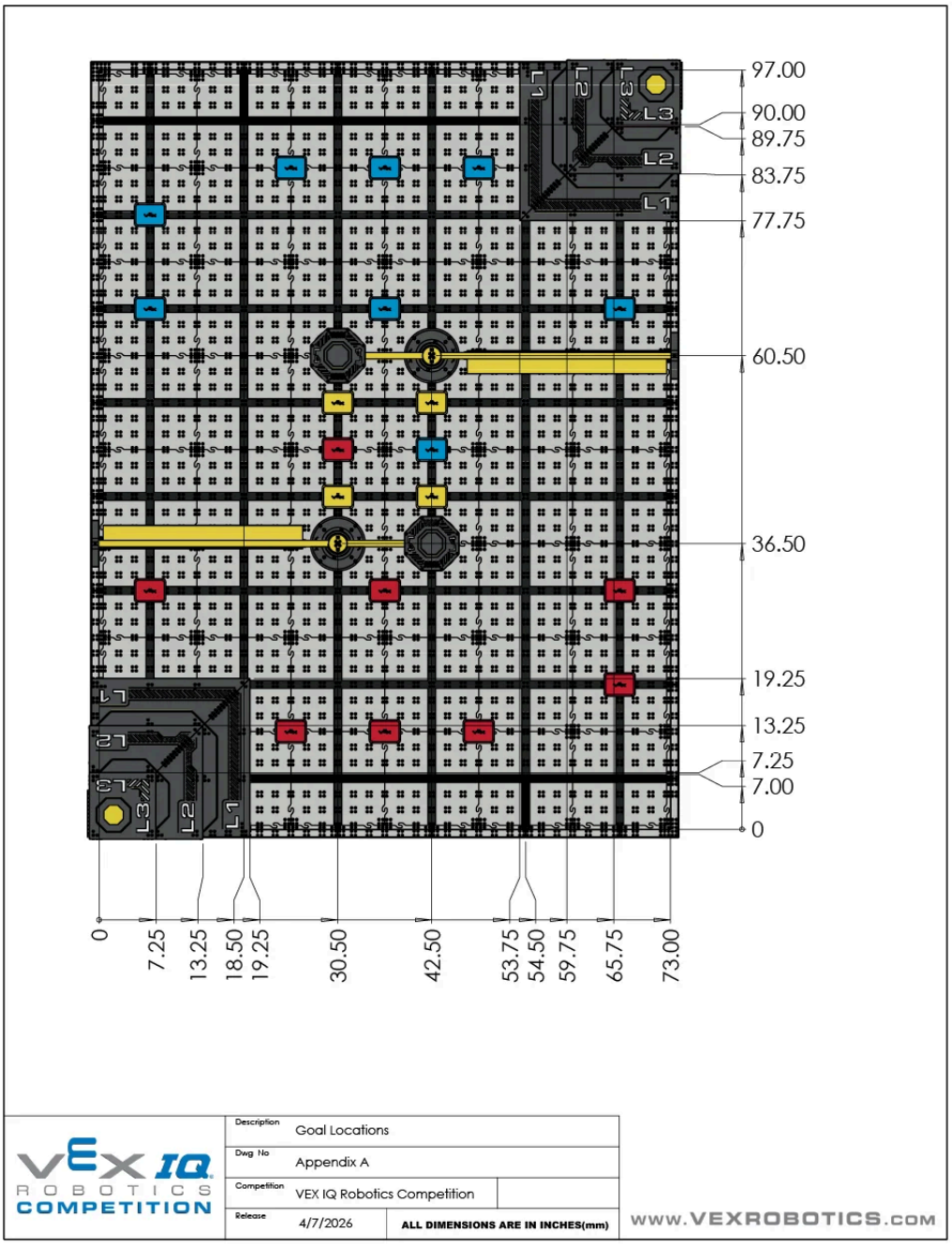
Wall and barrier field elements.



Pyramid Goal.


24.00
7.00
2.25
2.25
7.00
L4
L4
225°
TYP.
Description
L4 Goal
Dwg No
Appendix A
Competition
VEX IQ Robotics Competition
Release
4/7/2026
ALL DIMENSIONS ARE IN INCHES(mm)
www.VEXROBOTICS.com

L4 Goal.



Goal locations.

Appendix B - Simplified Edition

Using this Appendix

Hey, *Students*!

Welcome to the VEX IQ Robotics Competition. We're excited to see you play Level Up! We know that learning new things can be hard, and that the game manual can feel like a lot. That's why we're here to help.

You and your teammates can start here and work together to learn about the *Field*, how to earn points, the basic rules, and different ways to play the game.

This section does not include all of the rules. You will still need to learn them all! After you understand everything here, and before your first event, go to the official game manual to make sure you know all the rules.

We hope you have fun, make new friends, and work together to build your best *Robot*. Have an awesome season!

Hi, *Adults*!

This unofficial version of the VEX IQ Robotics Competition manual is a print-friendly resource for you and your *Teams* to help introduce *Students* to this season's game, Level Up.

It's very important to note that this is NOT a replacement for reading the official manual in its entirety. We encourage you to use this Appendix to support *Team* members who may be overwhelmed by the full game manual, and use it to aid in building a basic understanding of the game. Once *Students* are comfortable with this appendix and the rules outlined here, you should transition them to reading and using the full game manual, where they will gain a full-depth comprehension of the VEX IQ Robotics Competition.

We hope that you'll find this guide helpful and that more *Students* feel welcomed, supported, and empowered to join your *Teams*.

Your Robotics friends,

The VEX Robotics Competition *Game Design Committee*

Important Rules

It is important to follow all of the rules in Level Up. This applies to both *Students* and *Adults*. The choices that *Students* and *Adults* make work together, so everyone should follow the rules.

All event attendees must abide by the guidelines set forth in the Code of Conduct. G1

- Be kind and do your best. This is one of the most important parts of VEX IQ.
- Be respectful. It's okay for *Students* and *Adults* to disagree, but it's never okay to be disrespectful.
- Be a good sport. Think about how your actions affect others.
- Include everyone. *Alliances* should always work together to make a plan. You cannot tell another *Team* how they must play.

Participants must follow the Student Centered Policy. G2

- The *Student*-Centered Policy is very important because VEX IQ is a competition for *Students*.
- This means that the *Students* come up with the ideas, build the *Robots*, write the code, fix problems, and compete.
- *Adults* can teach, but cannot do the work on the *Robots*, code, engineering notebook, or strategies. They can give tips, but not answers.
- *Students* should speak up in a respectful way if an *Adult* is doing too much. Give a reminder that *Student* Centered is a rule all the time and everywhere with VEX IQ Robotics Competitions.

How do you play Level Up

Level Up is a game where two *Robots* work together to place *Bean Bags* on *Goals* to score points. During a *Match*, both *Robots* earn points. These points are added together to get a Teamwork Challenge score. *Teams* are ranked based on their scores in *Teamwork Matches*. The top *Teams* compete in *Finals Matches* to find a *Teamwork Champion*.

Teams can also play in *Robot Skills Matches* to see how well their *Robot* works on its own. There are two types: Driving Skills Matches (you control the *Robot*) and *Autonomous Coding Skills Matches* (the *Robot* runs using code written by *Students*).

Game Pieces and Goals

Bean Bags

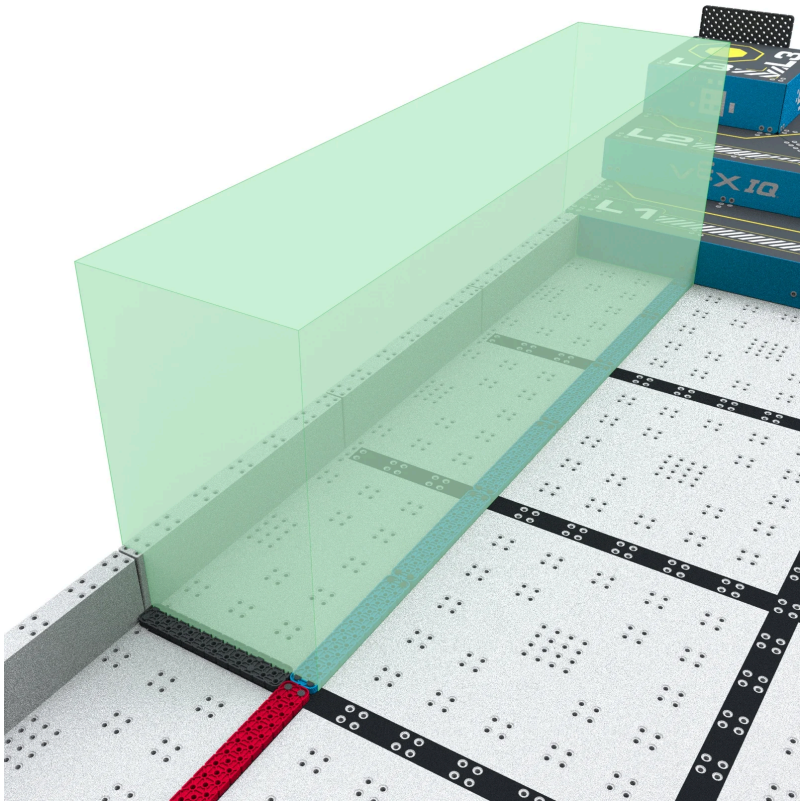
- There are 38 *Bean Bags* in each *Match*. *Bean Bags* can be red, blue, or yellow.
- Some *Bean Bags* start on the *Field*, some are put into the *Field* by *Loaders*, and each *Robot* can start with a *Preload* SG5.



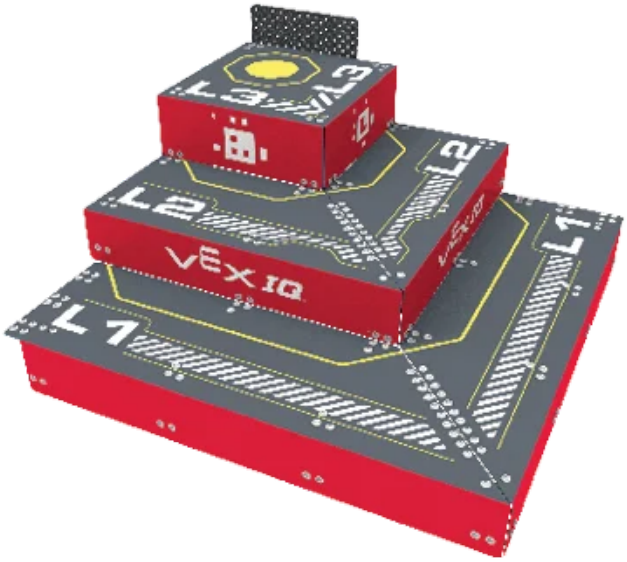
The three types of *Bean Bags*.

Goals

- There are three (3) types of *Goals*: Floor Goal, Pyramid Goal and L4 Goal.



A Floor Goal



A Pyramid Goal



An L4 Goal

How to Earn Points

Robots score *Bean Bags* in the *Floor Goal* SC3

- *Bean Bags* must be fully inside the Floor Goal.

- *Bean Bags* must match the color of the Floor Goal, or be yellow to score points

Robots score *Bean Bags* on the Pyramid *Goal* SC4

- *Bean Bags* must be resting on the Pyramid Goal or another *Bean Bag*. They cannot touch *Robots*, or anything outside of the *Field*.
- *Bean Bags* must match the color of the Pyramid Goal, or be yellow to score points

Robots score *Bean Bags* on the L4 *Goal* SC5

- *Bean Bags* must be resting on the L4 Goal or another *Bean Bag*, and not touching any *Robots*
- *Bean Bags* must be yellow to score points

Robot Rules

Before the *Match* starts, *Robots* cannot be bigger than 11″ by 20″ and cannot be taller than 15″. After the *Match* starts, *Robots* may grow bigger and taller by following rules SG2 and SG3.

Your *Robot* has to be designed, built, and coded by the *Students* on your *Team*, not by *Adults* R2, using only VEX IQ parts R12.

Drive Team

The Drive *Team* for each *Match* is composed of up to three *Students*:

- *Driver* 1 - Drives the *Robot* for the first 30 seconds GG11
- *Driver* 2 - Drives the *Robot* for the last 30 seconds
- Loader - Places *Bean Bags* into the *Field* during the *Match* SG7

Your *Team* can use different people in these roles each *Match*, but all must be members of your *Team*. G5 and GG11

Matches and Referees

- *Drive Team Members* should know who the *Head Referee* is each *Match*. T1
- *Robots* must stop moving at the end of the *Match* GG12 and can end the *Match* early. GG13
- Scores are added at the end of the *Match*. The *Head Referee* or *Scorekeeper Referee* will share them with the *Drive Team Members*. SC1

- Only *Drive Team Members* can talk to the *Head Referee* about a *Match*. They must do this right after the *Match* without *Team Adults*. SC2
- The *Head Referee* makes the final decision. *Students* may respectfully ask questions, but may not argue after the decision is made. T3

Appendix C - Glossary of Terms

Adult - Anyone who is not a *Student* or another defined term (e.g., *Head Referee*).

Alliance - A pre-assigned grouping of two *Teams* that are paired together during a given *Teamwork Match*.

Alliance Score - Points scored in a *Teamwork Match* that are awarded to both *Teams*.

Autonomous Coding Skills Match - see *Match*.

Autonomous Period - A time period during which *Robots* operate and react only to sensor inputs and/or commands pre-programmed by the *Students* into the *Robot* control system.

Bean Bag - see *Scoring Object*.

Builder - Any *Student Team* member who helps build the *Robot*. *Adults* are permitted to teach Builders associated concepts, but should never work on the *Robot*.

Coder - Any *Student Team* member who contributes to the code that is downloaded onto the *Robot*. *Adults* are permitted to teach Coders associated concepts, but should never work on the code that goes on the *Robot*.

Designer - Any *Student Team* member who helps design the *Robot* to be built for competition. *Adults* are permitted to teach Designers associated concepts, but should never work on the design of the *Robot*.

Disablement - A penalty applied to a *Team* for a safety *Violation*. During a *Disablement*, a *Team* is no longer allowed to operate their *Robot*, and the *Drivers* will be asked to place their controller down. A *Disablement* is not the same as a *Disqualification*.

Disqualification - A penalty applied to a *Team* for a Major *Violation* (see GG6 for more details). If a *Team* receives a *Disqualification* 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/or *Disqualifications* for a single *Team* may lead to its *Disqualification* for the entire event.

Driver - A *Student Team* member who stands in the *Driver Station* and is responsible for operating and controlling that *Team's Robot* during defined segments of a *Match*. Up to two *Team* members may fulfill this role in a given *Match* (see GG1), and there is no requirement that the same *Students* serve as *Drivers* in multiple *Matches*.

Driver Controlled Period - A time period during which *Drivers* operate their *Robot* using a VEX IQ controller.

Driver Station - A region beside the *Field* where the *Drivers* must remain during their *Match* unless legally interacting with their *Robot*. The *Driver Stations* are represented by the red and blue lines in Figure FO-3.

Drive Team Members - The *Students* who serve as *Drivers* and/or Loaders for their *Team* in a given *Match*.

- *Driver* 1 - Drives the *Robot* until the mid-*Match Driver* switch. (See GG11.)
- *Driver* 2 - Drives the *Robot* after the mid-*Match Driver* switch. (See GG11.)
- Loader - Introduces *Scoring Objects* into the *Field*.

Driving Skills Match - see *Match*.

Event Partner - The volunteer VEX IQ Robotics Competition *Tournament* coordinator who serves as an overall manager for the volunteers, venue, event materials, and all other event considerations.

Field - The entire playing Field, being six (6) Field tiles wide by eight (8) Field tiles long (totaling forty-eight (48) Field tiles), including the *Field Perimeter*.

Field Element - The *Field Perimeter*, *Floor*, PVC pipes, and VEX IQ pieces which comprise and/or are attached to the *Field*.

Field Perimeter - The outer part of the *Field*, made up of four (4) outside corners and twenty-four (24) straight sections.

Finals Match - see *Match*.

Floor - The interior flat part of the playing *Field*, made up of the forty-eight (48) *Field* tiles that are within the *Field Perimeter*.

Game Design Committee (GDC) - The creators of VEX IQ Robotics Competition Level Up, and authors of this Game Manual. The *Game Design Committee* is the only official source for rules clarifications and Q&A responses; see Section 1.

Goal - A location inside the *Field* where *Scoring Objects* can be placed to earn points. There are multiple types of *Goal* in VEX IQ Robotics Competition Level Up:

- **Floor Goal** - An infinitely tall three-dimensional volume that is bounded by the outside edge of the red/blue IQ beams connected to the *Floor*, the outside edge of the *Field Perimeter*, the inside edge

of the gray IQ beam connected to the *Floor*, and the vertical face of the adjacent L1 Goal. (See Figure G-1.) Each Floor Goal has a color, red or blue, determined by the color of the VEX IQ parts within its boundaries.

- **Pyramid Goal** - A three-level structure in a corner of the *Field*. Each Pyramid Goal consists of three *Goals* of graduating size, designated by horizontal gray surfaces marked as L1, L2, or L3. Each Pyramid Goal has a color, red or blue, determined by the color of its vertical surfaces.
  - **L1 Goal** - The lowest *Goal* in a Pyramid Goal; labeled as L1 on its surface.
  - **L2 Goal** - The middle *Goal* in a Pyramid Goal, labeled as L2 on its surface.
  - **L3 Goal** - The highest *Goal* in a Pyramid Goal, labeled as L3 on its surface; includes a backstop aligned with the long side of the *Field*.
- **L4 Goal** - The horizontal gray surface labeled as L4, located at the top of a vertical structure built from PVC pipe and VEX IQ pieces. L4 Goals do not have a defined color.

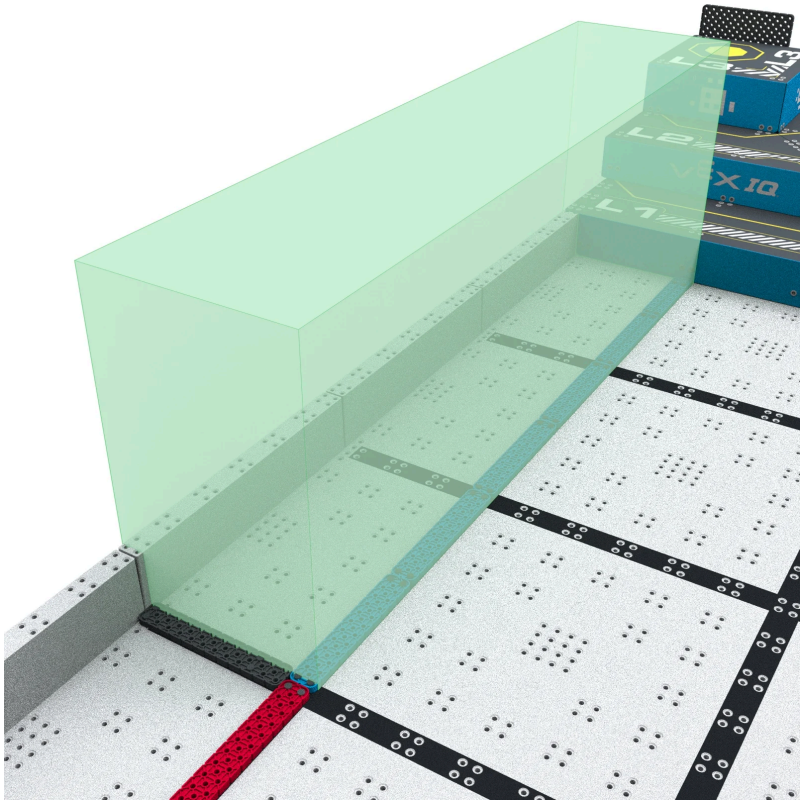


Figure G-1: The blue Floor Goal (highlighted in green).



Figure G-2: The red Pyramid Goal, including a red L1 Goal, red L2 Goal, and red L3 Goal.



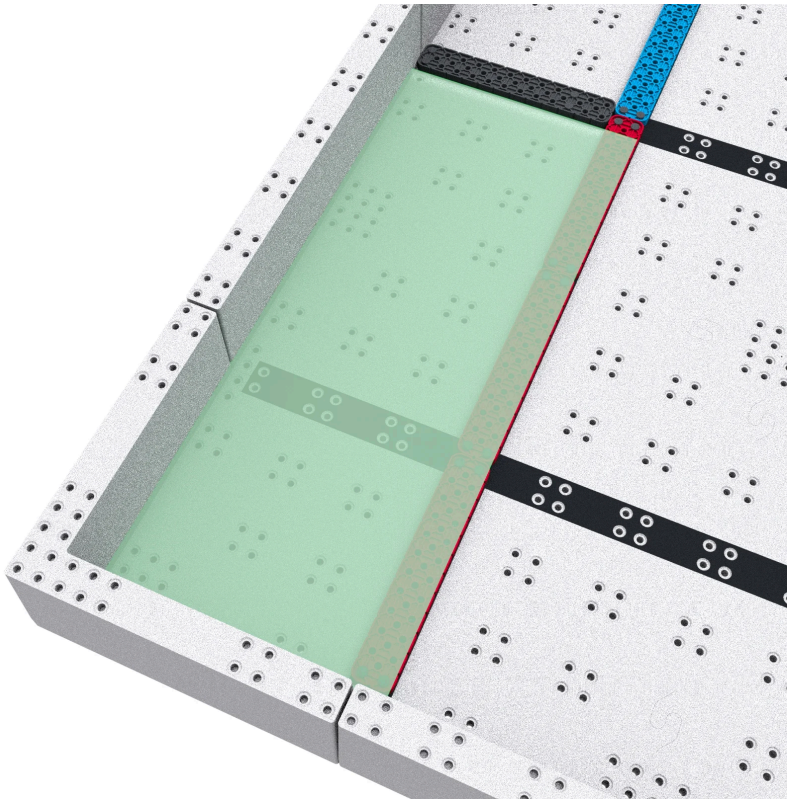
Figure G-3: An L4 Goal.

Head Referee - A certified impartial volunteer responsible for enforcing the rules in this manual as written. *Head Referees* are the only people who may discuss ruling interpretations or scoring questions with *Teams* at an event. Large events (e.g., Signature Events, World Championships, etc.) might include multiple *Head Referees* at the *Event Partner's* discretion.

License Plate - A physical component on the *Robot* that displays the *Team's* VEX IQ Robotics Competition number. Each *License Plate* must have a length and height of 3.5″ x 1.5″ (88.9mm x 38.1mm) and must not exceed a width of 0.25″ (6.35mm) per R4.

Load - The act of legally introducing a *Scoring Object* into the *Field*. See SG7.

Load Zone - An area bounded by the outside edge of the red/blue IQ beams connected to the *Floor*, the inside edge of the gray IQ beam connected to the *Floor*, and the inside edges of the *Field Perimeter*. Each *Load Zone* has a color, red or blue, determined by the color of the VEX IQ parts within its boundaries. The *Load Zone* is intended to receive *Scoring Objects* from a human *Loader*.



Match - A set time period, consisting of *Autonomous Periods* and/or *Driver Controlled Periods*, during which *Teams* play a defined version of Level Up to earn points. See Sections 2 & 3.

Match types:

- *Autonomous Coding Skills Match* - A *Robot Skills Match* in which a single *Robot* operates during a one minute *Autonomous Period*. There is no *Driver Controlled Period*. *Teams* can elect to end an *Autonomous Coding Skills Match* early if they wish to record a *Skills Stop Time*.
- Driving Skills *Match* - A *Robot Skills Match* in which one *Team* operates their *Robot* during a one minute *Driver Controlled Period*. There is no *Autonomous Period*. *Teams* can elect to end a Driving Skills Match early as described in rule RSC8 if they wish to record a *Skills Stop Time*.
- *Finals Match* - A *Teamwork Match* used to determine the *Teamwork Champions*. See rule T14.

- Practice *Match* - A non-scored *Match* used to provide time for *Teams* to get acquainted with the official playing *Field* and procedures. *Head Referees* should not record or track standard gameplay *Violations* that occur during Practice Matches. Egregious *Violations* may be recorded and tracked at the discretion of the *Head Referee*.
- *Qualification Match* - A *Teamwork Match* that is used to determine *Teams'* rankings for *Finals Matches*.
- *Robot Skills Match* - A Driving Skills Match or *Autonomous Coding Skills Match*.
- *Teamwork Match* - A *Match* that consists of a two-*Team Alliance* that works together to score points in a one-minute *Match*. *Qualification Matches*, *Finals Matches*, and optional Practice Matches are *Teamwork Matches*.

***Match* Type**	**Participants**	***Autonomous Period* (m:ss)**	***Driver Controlled Period* (m:ss)**
Teamwork Match	One *Alliance*, on one *Field*, made up of two *Teams*, each with one *Robot*	None	1:00
Driving Skills Match	One *Team*, with one *Robot*	None	1:00
Autonomous Coding Skills Match	One *Team*, with one *Robot*	1:00	None

Match Load - A *Scoring Object* that begins the *Match* in a *Driver Station* and which may be introduced by a Loader during the *Match*. See SG7 for more information.

Match Schedule - A list of *Matches* that is generated at the start of an event. The *Match Schedule* includes the predetermined, randomly-paired *Alliances* that will be competing in each *Qualification Match*, and the expected start times for these *Matches*. The *Match Schedule* may be subject to change at the *Event Partner's* discretion.

Qualification Match List

2026 Texas Region 5 VIQRC Elementary State Championship

Match	Field	Time	Team 1	Team 2
Q1	Main Field	Sat 10:00 AM	1216C	74866B
Q2	Main Field	Sat 10:06 AM	74866C	46389A
Q3	Main Field	Sat 10:12 AM	74866A	1040A
Q4	Main Field	Sat 10:18 AM	97401B	75007B
Q5	Main Field	Sat 10:24 AM	68898A	75007C
Q6	Main Field	Sat 10:30 AM	3173B	1059B
Q7	Main Field	Sat 10:36 AM	10723B	97401D
Q8	Main Field	Sat 10:42 AM	1216E	1059A
Q9	Main Field	Sat 10:48 AM	1216B	75035A

Match Stop Time - The time remaining (i.e., displayed on the timer or audience display) in a tiebreaker *Finals Match* (which only occurs for 1st place) when an *Alliance* ends the *Match* early by placing their controllers on the ground. The *Match Stop Time* is rounded down to the nearest even number. For example, if controllers are set down when the displayed time is 13 seconds, the *Match Stop Time* is recorded as 12 seconds. If an *Alliance* does not finish the *Match* early, they receive a default *Match Stop Time* of 0 seconds.

Notebooker - Any *Student Team* member who contributes to the *Team's* engineering notebook or associated documentation. *Adults* are permitted to teach Notebookers associated concepts, but should never work on the engineering notebook or other documentation.

Plowing- A *Robot* / *Scoring Object* status. A *Robot* is considered to be *Plowing* a *Scoring Object* if the *Robot* is intentionally moving it in a preferred direction across the *Floor* without *Possessing* the *Scoring Object*.

Possession - A *Robot* / *Scoring Object* status. A *Scoring Object* is considered *Possessed* by a *Robot* if the *Scoring Object* is fully supported by the *Robot*, or if the *Robot's* movement in all directions would result in maintained control of the *Scoring Object* (i.e., the *Scoring Object* moves along with the *Robot* as the *Robot* turns and moves forward, backward, left, and right).

The difference between *Possession* and *Plowing* is analogous to the difference between the terms "controlling" and "moving".

Practice Match - see *Match*.

Preload - A *Scoring Object* that begins the *Match* in contact with a *Robot*. See SG5.

Qualification Match - see *Match*.

Robot - A machine that has passed inspection, designed by *Student Team* members to execute one or more tasks autonomously and/or by remote control from *Drivers*.

Robot Skills Match - see *Match*.

Scorekeeper Referee - An impartial volunteer responsible for tallying scores at the end of a *Match*. *Scorekeeper Referees* do not make ruling interpretations, and should redirect any *Team* questions regarding rules or scores to the *Head Referee*.

Scoring Object - An object that can be placed in a *Goal* during a *Match*. There is one type of *Scoring Object* in VEX IQ Robotics Competition Level Up:

- *Bean Bag* - A blue, red, or yellow rectangular, pellet filled fabric pouch, measuring approximately 3 inches by 4 inches, and weighing approximately 40 grams.
  - Blue *Bean Bags* can be scored in the blue Floor Goal or the blue Pyramid Goal.
  - Red *Bean Bags* can be scored in the red Floor Goal or the red Pyramid Goal.
  - Yellow *Bean Bags* can be scored in any *Goal*.



Skills Stop Time - The time remaining in a *Robot Skills Match* when a *Team* ends the *Match* early. See RSC8 for more details.

Strategist - Any *Student Team* member who contributes to the *Match* strategies used to score points during a *Teamwork Match* or *Robot Skills Match*, including assessing the impact of other *Teams'* performance and strategies on the *Team's* strategy (e.g., scouting). *Adults* are permitted to teach *Strategists* associated concepts, but should never create or dictate a *Team's Match* strategy.

Student - A person that meets the Student Eligibility Policy requirements for their respective competition program and level.

Team - Three or more *Students* make up a *Team*. In the context of this game manual, *Student Team* members fill multiple roles related to *Robot* design, build, coding, strategy, and documentation. See G2, G4, G5 for more information. *Adults* may not fulfill any of these roles. See Appendix E for more information about *Team* classifications and *Student* roles.

Teamwork Champions - The two *Teams* in the *Alliance* with the highest *Finals Match* score. See rule T14.

Teamwork Match - see *Match*.

Tournament - A competition event that includes scored *Matches*, and which is run by an *Event Partner*.

Violation - The act of breaking a rule in the game manual. See Appendix D for additional information on *Violations* and penalties.

- Minor Violation - A *Violation* which does not result in a *Disqualification*.
- Major Violation - A *Violation* which results in a *Disqualification*.
- Score Affecting - A *Violation* which improves an *Alliance's* score at the end of a *Match*.

Appendix D - Rule Violations

This appendix is intended to provide additional guidance regarding rule *Violations* within the VEX IQ Robotics Competition, and offer further explanation on how *Violations* may be interpreted and enforced during *Matches*. It is designed to promote consistency in officiating and to help *Teams* better understand how actions on the *Field* may impact scoring, *Match* outcomes, and referee decisions.

All *Violation* notes to denote special circumstances or provide additional clarifications have been consolidated into this section such that they may be easily referenced. If no *Violation* notes are found in a given rule, then it should be assumed that the below "default" definitions apply.

This appendix does not supersede any existing rule, but instead serves as a secondary resource to aid in their application.

Violation - The act of breaking a rule in the Game Manual.

- **Minor Violation** - A *Violation* which does not result in a *Disqualification*.
  - Accidental, momentary, or otherwise non-Score Affecting *Violations* are usually Minor Violations.
  - Minor Violations usually result in a verbal notification from the *Head Referee* during the *Match*, which should serve to inform the *Team* that a rule is being Violated before it escalates to a Major Violation.
- **Major Violation** - A *Violation* which results in a *Disqualification*.
  - Unless otherwise noted in a rule, all Score Affecting *Violations* are Major Violations.
  - If noted in the rule, egregious or strategic *Violations* or intentional actions that result in *Violations* may also be Major Violations.
  - Multiple Minor Violations within a *Match* or *Tournament* may escalate to a Major Violation at the *Head Referee's* discretion or as specified in a rule. Minor Violations carry over into *Finals Matches* unless otherwise specified within a rule.
- **Score Affecting** - A *Violation* which improves an *Alliance's* score at the end of a *Match*.
  - Multiple *Violations* within a *Match* can cumulatively become Score Affecting.
  - When evaluating whether a *Violation* was Score Affecting, *Head Referees* will focus primarily on any *Robot* actions that were directly related to the *Violation*.
  - Determining whether a *Violation* was Score Affecting can only be done once the *Match* is complete and the scores have been calculated.

- To determine whether a *Violation* may have been Score Affecting, check whether the *Violation* directly contributed to increasing the score of the *Match*. If it did not increase the *Alliance's* score, then the *Violation* was not Score Affecting, and it was very likely a Minor Violation.

Violations of <GG>, <SG>, and <RSC> rules that occur during a *Robot Skills Match* should only affect the outcome of that *Match* and should not be considered when determining whether a *Violation* has been repeated during the event.

Appendix E - Team Classifications and Student Roles

To participate in an official VEX IQ Robotics Competition event, a *Team* must first register on events.vex.com and receive a VEX IQ Robotics Competition *Team* number. A *Team's* unique number identifies their organization and their *Team* within that organization. Each *Team* must design and build their own *Robot*, create their own code, develop their own strategies to play the game, and maintain their own engineering notebook if they choose to use one.

All rules concerning the eligibility of both individual *Students* and their *Teams* are set forth in the Student Eligibility Policy, such as *Student* age restrictions, *Team* size requirements, and more.

In the context of this Game Manual, *Student Team* members fill multiple roles related to *Robot* design, build, coding, strategy, and documentation. *Adults* may not fulfill any of these roles. See G2 and G4 for more information.

- **Designer** - Any *Student Team* member who helps design the *Robot* to be built for competition. *Adults* are permitted to teach Designers associated concepts, but should never work on the design of the *Robot*.
- **Builder** - Any *Student Team* member who helps build the *Robot*. *Adults* are permitted to teach Builders associated concepts, but should never work on the *Robot*.
- **Coder** - Any *Student Team* member who contributes to the computer code that is downloaded onto the *Robot*. *Adults* are permitted to teach Coders associated concepts, but should never work on the code that goes on the *Robot*.
- **Strategist** - Any *Student Team* member who contributes to the *Match* strategies used to score points during a *Teamwork Match* or *Robot Skills Match*, including assessing the impact of other *Teams'* performance and strategies on the *Team's* strategy (e.g., scouting). *Adults* are permitted to teach *Strategists* associated concepts, but should never create or dictate a *Team's Match* strategy.
- **Notebooker** - Any *Student Team* member who contributes to the *Team's* engineering notebook or associated documentation. *Adults* are permitted to teach Notebookers associated concepts, but should never work on the engineering notebook or other documentation.