

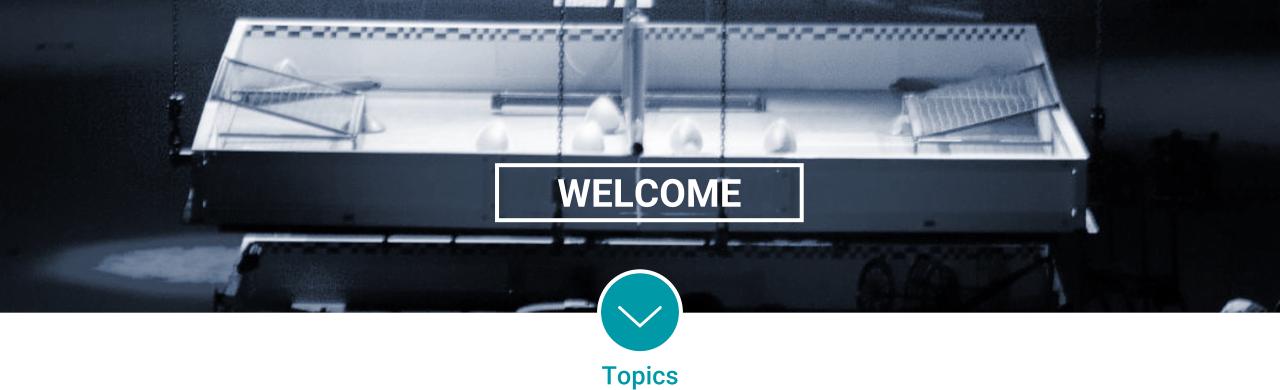
VEX Robotics Competition

"Over Under"

Game Discussion

Grant Cox
Game Design Committee



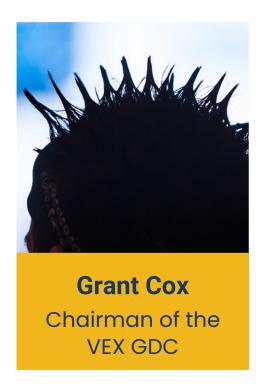


Game Overview / Field Tour videos

New rule highlights

Notable Early Season Q&A's

Meet the Facilitator



This session IS:	This session IS NOT:
Open for questions / conversation	A formal "Q&A" with the GDC
Intended to solicit feedback & suggestions	Going to provide (m)any guarantees
Limited in scope / time-constrained	Rigidly scripted





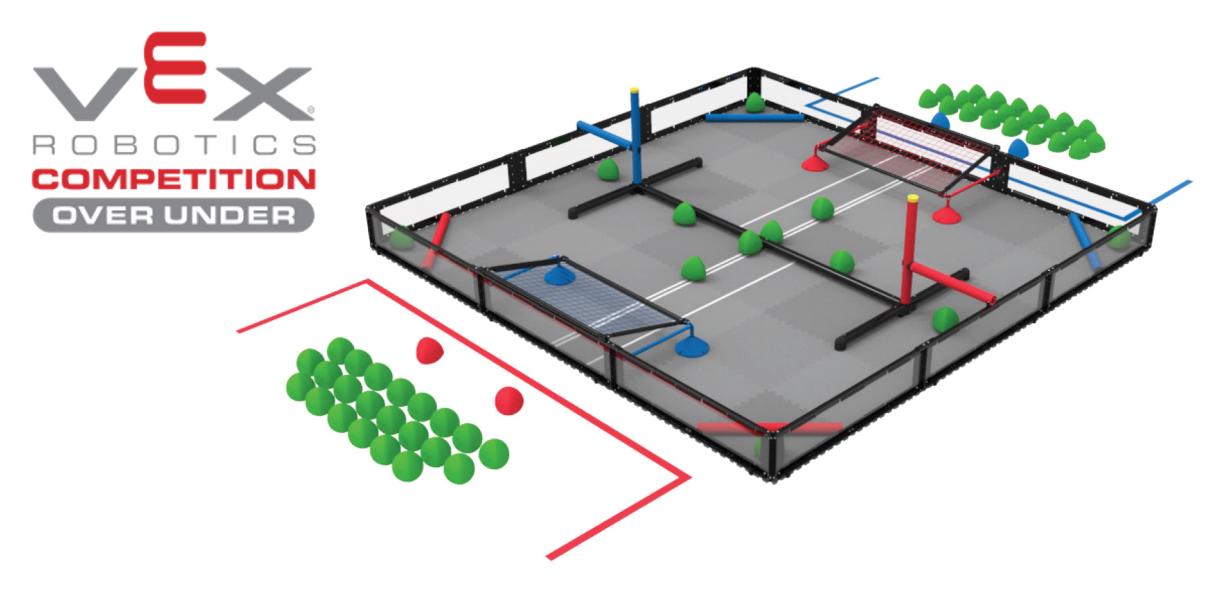
















Holding



Trapping

Holding

Holding - A *Robot* status. A *Robot* is considered to be *Holding* if it meets any of the following criteria during a *Match*:

- Trapping Limiting the movement of an opponent Robot to a small or confined area of the field, approximately the size of one foam field tile or less, without an avenue for escape. Note that if a Robot is not attempting to escape, it is not considered Trapped.
- Pinning Preventing the movement of an opponent Robot through contact with the Field Perimeter, a Field or Game Element, or another Robot.
- Lifting Controlling an opponent's movements by raising or tilting the opponent's Robot off of the foam tiles.



Holding

<G16> No Holding for more than a 5-count. A Robot may not Hold an opposing Robot for more than a 5-count during the Driver Controlled Period.

For the purposes of this rule, a "count" is defined as an interval of time that is approximately one second in duration, and "counted-out" by *Head Referees* verbally.

A Holding count is over when at least one of the following conditions is met:

- a. The two Robots are separated by at least two (2) feet (approximately one foam tile).
- b. Either *Robot* has moved at least two (2) feet away (approximately 1 tile) from the location where the *Trapping* or *Pinning* count began.
 - In the case of Lifting, this location is measured from where the Lifted Robot is released, not from where the Lifting began.
- c. The Holding Robot becomes Trapped or Pinned by a different Robot.
 - In this case, the original count would end, and a new count would begin for the newly Held Robot.
- d. In the case of *Trapping*, if an avenue of escape becomes available due to changing circumstances in the *Match*.

After a *Holding* count ends, a *Robot* may not resume *Holding* the same *Robot* again for another 5-count. If a *Team* resumes *Holding* the same *Robot* within that 5-count, the original count will resume from where it ended.

Return Triballs to Match Load Zones

SG3> Keep Triballs in the field. Triballs that leave the field during Match play, whether intentionally or unintentionally, will be returned to the field by being placed in a Match Load Zone nearest the point at which they exited.

- a. Referees will return Triballs to the field when it is deemed safe to do so, at their discretion.
- b. This action is not considered a "Match Load", i.e., the stipulations in rule <SG6> do not apply, For example, the Triball cannot be placed directly onto a Robot.
- c. Incidental contact with other *Triballs* that are already in the *Match Load Zone* may occur, although referees will make a concerted effort not to do so.
- d. The Triball may be placed on top of other Triballs that are already in the Match Load Zone if necessary, e.g., if Triballs are already covering the entire Match Load Zone foam tile region.
- e. At their discretion, referees may also direct a nearby *Drive Team Member* or other volunteer to return the *Triball* to a specific *Match Load Zone*. However, this should never be done by *Drive Team Members* proactively without referee acknowledgment.

Note: Triballs which come to rest on top of a Goal may be retrieved by a Drive Team Member from the Alliance Station adjacent to the Goal in question. The Triball is then considered a Match Load for the Alliance who retrieved the Triball. This momentary interaction is an exception to rule <G9>.

Goal Tolerance

<T10> Be prepared for minor field variance. Field Element tolerances and *Triballs* may vary from specified locations / dimensions; *Teams* are encouraged to design their *Robots* accordingly. Please make sure to check Appendix A for more specific nominal dimensions and tolerances.

- Field Element tolerances may vary from nominal by up to ±1.0"
- b. The opening of the Goal between the PVC pipe and the foam field tiles has a dimensional tolerance of +0.25" / -0.00".
- Triball weights may vary from nominal by up to +20 grams

Helpful Tips to Ensure Proper Goal Performance

Making sure the *Goals* for Over Under are appropriately built, assembled, and performing properly is crucial to gameplay. Here are some tips to make sure that *Goals* are built properly and interact with *Triballs* as intended.

- Make sure the field walls are sitting flush to the no gaps between the field walls and the field walls and the field walls and the field walls. Please refer to the figures later in this supposed to fit toge

 Appendix A page A5

 where field walls and field tiles are supposed to fit toge.

 Appendix A page A5

 where field walls and field tiles are supposed to fit toge.
- 2. Make sure that the slands are fully inserted into the bases that assemble to the field tiles. This can be mealered by making sure the length of the pipe coming out of the base matches the dimensions provided in this appendix. *Event Partners* should periodically check this joint to ensure the *Goal* is not rising up out of the base over the course of an event.
- 3. After assembly, manipulate a *Triball* by hand to ensure there is a slight interference between

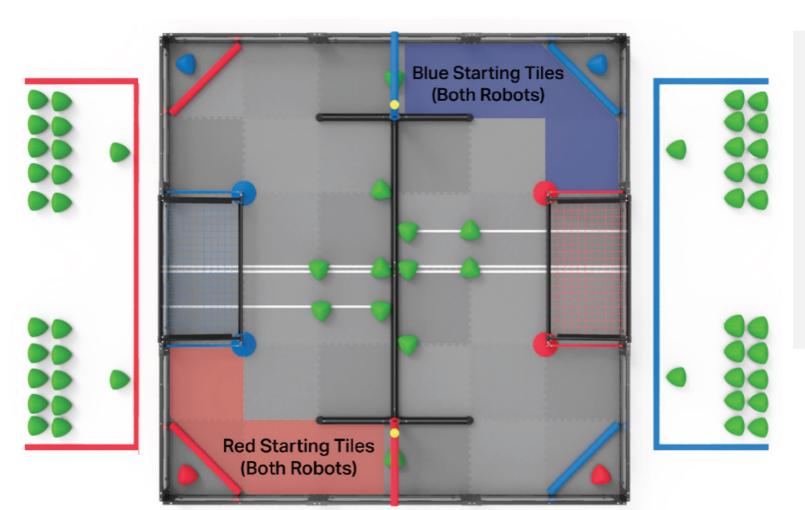
<T4>

<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 VRC Over Under; it is not intended to be an exhaustive compilation of guidelines for running a VEX 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 the Game Manual.

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

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

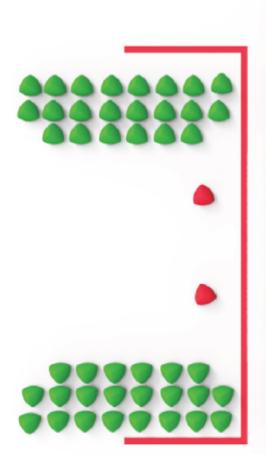
VEX U (Head-to-Head)

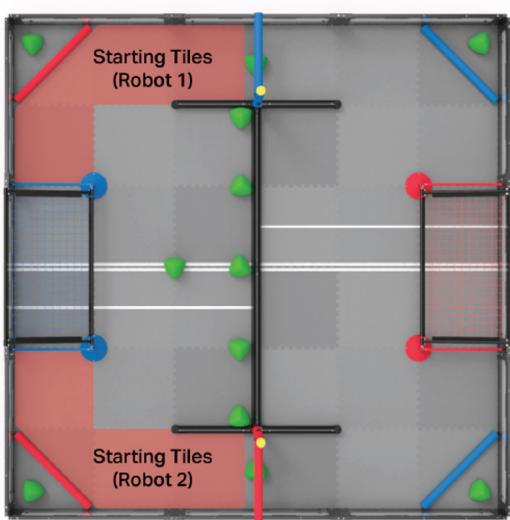


Same same, but different...

- Starting tiles
- Preloads
- Autonomous zones
- Match Load introductions
- Match Load availability
- Autonomous Win Point

VEX U (Robot Skills Challenge)





Same same, but different...

- Starting tiles
- Match Load introductions
- Elevation Tiers

VEX U (Robot Rules)

- b. One Robot must be smaller than 24" x 24" x 24" at the start of the Match.
- c. One Robot must be smaller than 15" x 15" x 15" at the start of the Match.

Note: The remaining VEX U Robot rules will be released in a future game manual update. For the purpose of early-season designs, prototyping, and scrimmages, the rules from the <u>22-23 VEX U Game Manual</u> may be used.



Notable Early Season Q&A's

Location of Driver Station Posts and Field Monitor

Pascal Chesnais (Event Partner)

I have not found a recommended location for field monitors and drive station posts either for portable field or metal competition perimeters. In past seasons, it was clear where to mount them.

This season - what are the recommended locations?









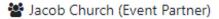
7-Jul-2023

Thank you for your question. Locations of field monitors and drive station posts are both considered modifications that may be made at the EP's discretion under rule <T22>. If used, these locations must be the same across all fields of that type (head-to-head or skills) at that event.

https://www.robotevents.com/VRC/2023-2024/QA/1578

Notable Early Season Q&A's

G8C and Match load assistance



11-Jun-2023

Is there any openness to utilizing anything to assist in holding and placing match loads?

Could the carrying case for the robot be utilized as a table for preloads during a match to ease the usage of match loads specifically on raised fields?



Answered by committee

23-Jun-2023

Thank you for your question. As you quoted from clause 'c' of rule <G8>, "Drive Team Members are prohibited from ... bringing / using additional materials to simplify the game challenge during a Match." This would include devices to aid with Match Loading.

The Event Partner may provide boxes, tables, or other devices to contain and/or elevate Match Loads at their discretion under rule <T22>, but any devices must be consistent across all fields, Alliance Stations, Matches, and Teams.

https://www.robotevents.com/VRC/2023-2024/QA/1538

Notable Early

Season Q&A's

Loading a moving catapult arm



15-Jun-2023

<SG6>

Rule SG6 allows a human player to place a Match Load gently onto a Robot from the Drive Team Member's Alliance. We have observed several instances where a human is reaching out to place a Triball in a robot's catapult. How does rule SG6 interact with rule S1. Specifically, does rule S! require that the catapult arm be stationary when the Triball is being loaded? We stopped several teams from loading Triballs in a catapult arm that was continuously snapping forward and back, as students had trouble timing the placement of the Triball to avoid having their hand hit by the moving catapult.

There are very many rules this year that are settled only by the judgement of a head referee at an event. Should rule SG2 require that the catapult arm be stationary when the Triball is being loaded to avoid having different referees rule differently on what is considered unsafe under S1?





https://www.robotevents.com/VRC/2023-2024/QA/1553



23-Jun-2023

We believe our response to Q&A 1529 addresses your question.

To expand further on this subject, it is important for both Teams and Head Referees to remember that Teams are responsible for the actions of their Robots at all times. <S1> typically refers to actions that pose an active danger to (or that have injured/damaged) other Students, volunteers, or field elements. The Game Manual does not typically legislate specific conditions for what is considered "unsafe", due to the inherent risks involved in designing and building Robots that have limitless possibilities for spinning wheels, pinch hazards, and sharp edges.

If a Team chooses to compete with a design or strategy that could risk being considered unsafe, they should be prepared to demonstrate any safety precautions or considerations that have been taken, such as during inspection or a practice match. We would encourage Head Referees and Event Partners to take these conversations seriously, and provide Teams with some degree of "benefit of the doubt" when it comes to their own Robots.

With that being said, there is a limit to that consideration, and Teams should also be prepared for the possibility that a Head Referee will not agree that their precautions are sufficient. In this context, we would direct Teams to the following notes from the Game Manual.

Rule <G3>:
Rule <SG6>:

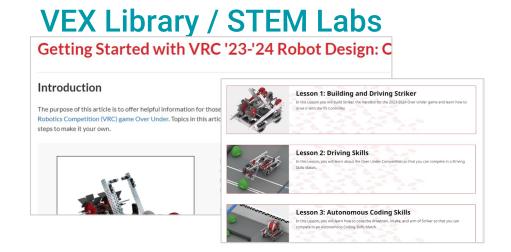
Rule <R3>:

* Some screenshots may be cropped for space





Additional Resources



RECF LibraryVRC Drive Team Training Course: 2023-24, Over Under



Updated on 5/19/2023 to reflect rules & rule numbers for Over Under, and on 6/1/2023 to add a link of legal discontinued V5 products

The following descriptions, examples, and images may help clarify the intent of the VRC robot inspection rules. Understanding these details and edge cases is recommended for inspectors at all events, particularly Signature and Championship Events.

Rule R4: Robot Sizing

Robots must fit in a sizing box. Robots must be able to satisfy <G5>, and begin each Match in a volume smaller than 18" (457.2 mm) long by 18" (457.2 mm) wide by 18" (457.2 mm) tall.

Red how for < R4>: The official sizing tool (the On-Field Robot Expansion Sizing Tool) is intentionally manufactured with a slightly oversized.

VEXcode VR / VR Skills



Head Referee Certification

REC Library / Volunteers / Referee / VRC Head Referee Training & Certification Course

VRC Head Referee Training & Certification Course

All official REC Foundation events that qualify teams to a Championship event are required to have a Certified Head Referee, and all Referees are encouraged to use this certification course for training. If there is anything in the certification course that is in disagreement with the Official Game Manual, the Official Game Manual should be followed.

Need to reach us about a course or certification? Email us at volunteercerts@recf.org.

Note from the VEX GDC: The rules contained in this Game Manual are written to be enforced by human *Head Referees*. Many rules have "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 (the Game Manual and the Q&A), and most crucially, the context of the *Match* in question.

The VEX Robotics Competition does not have video replay, our fields do not have absolute sensors to count scores, and most events do not have the resources for an extensive review conference 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 GDC "would have ruled." This is ultimately an irrelevant question; our answer is that when a rule specifies "Head Referee's discretion" (or similar), then the "right" call is the one made by a Head Referee in the moment. The VEX GDC designs games, and writes rules, with this expectation (constraint) in mind.





