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**DSBN REGIONAL ROBOTICS (VEX V5) SKILLS CHALLENGE 2024
SECONDARY LEVEL SCOPE**

CHAIR: Jeff Stephens
 A.N. Myer Secondary School
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PURPOSE OF THE CONTEST:

EVENT DETAILS:
Date: Thursday March 7, 2024
Time: 6 hour period
Location: A.N. Myer Secondary School - Room #7

ENTRY: Students must register online at [2024 Skills Challenge Registration Form](#) with all the required information completed to be eligible to participate.

8:30am – 9:00am	Sign-in at each contest site
9:00am – 9:30am	Orientation & Opening Remarks
9:30am – 11 :00pm	Driver Skills Contest – Ongoing
11:00am – 11 :30am	Lunch
11 :30am – 1pm	Autonomous Skills Contest - Ongoing
1:00pm –2:00pm	Qualifying 2 vs. 2 rounds
2 :00pm-2 :30pm	Eliminations – Semi finals (top 8) / finals
2 :30pm – 2 :35pm	Disassembly and Clean Up

*Time is approximate and will be dependent on judges completing their evaluation and tabulation of the scores.

SKILLS AND KNOWLEDGE TO BE TESTED:

The Challenge – VEX 23-24 Over Under

<https://www.vexrobotics.com/over-under-manual>

Design and build quality of a robot that is custom designed for the Vex VRC 2023-2024 game “Spin Up”. <https://www.vexrobotics.com/v5/competition/vrc-current-game>

Ref: Appendix B for Skills challenges. Pg. 106 of the “print version”

<https://www.vexrobotics.com/v5/competition/vrc-current-game>

Rules do change within the season. For the latest updates on rules refer to:

Android app “VRC Hub” with rules:

<https://play.google.com/store/apps/details?id=com.dwabtech.vexhub.vrc>

Apple app “VRC Hub” with rules:

<https://itunes.apple.com/us/app/vrc-hub/id1102054601?ls=1&mt=8>

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There may be a newer version available: <https://www.skillsontario.com/skills-ontario-competition#Scopes>. Please check our website to ensure you have the latest version as indicated in the last updated column.

1. GENERAL CONTEST INFORMATION

1.1 Technical Committee

Technical Chairs:

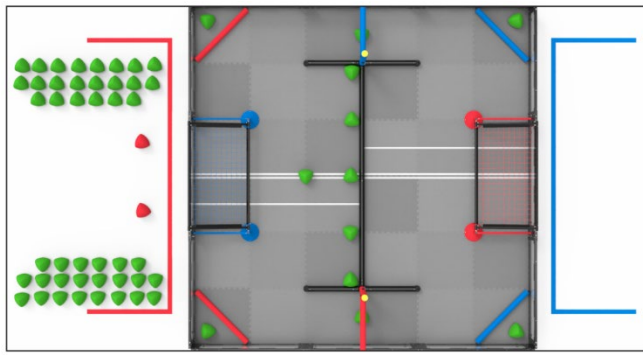
[Jeff Stephens, DSB of Niagara](#)

2. PURPOSE OF THE CONTEST

View the online Game Manual here: <https://www.vexrobotics.com/over-under-manual#>

Skills Ontario will be the

The Challenge – VEX Over Under –

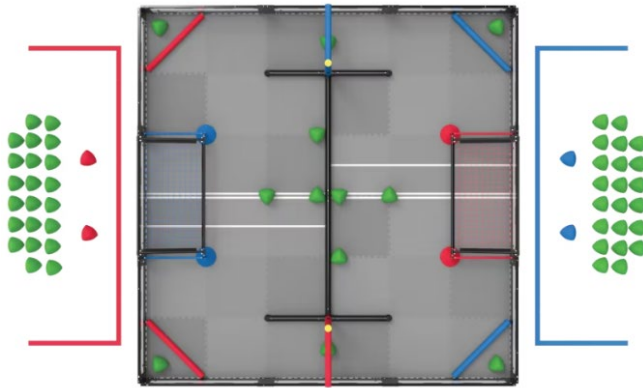


Autonomous skills (60Sec.),

Driver skills (60 Sec.):

- One bot in the field
- (2) red preload
- (12) preset in field
- (44) match load
- (1) Best Autonomous, and (1) Best Driver skills run scores are combined for skills ranking.
- Autonomous ranking will

determine 1st and 2nd placement from the winning alliance of the 2 vs. 2 competition.



Qualification and elimination 2 vs. 2

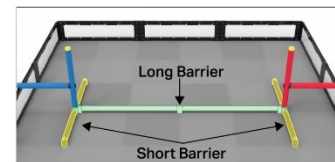
- (2) Alliances of (2) bots in a head to head competition = (4) bots in the field at the same time
- (2) red bot preload per alliance
- (12) preset in field
- (22) match load per alliance
- Qualification rankings will determine elimination alliance partners: 1-2, 3-4, 5-6, 7-8

VEX Robotics Competition Over Under is played on a 12' x 12' square field configured as seen above. Two (2) Alliances – one (1) “red” and one (1) “blue” – composed of two (2) Teams each, compete in matches consisting of a fifteen (15) second Autonomous Period, followed by a one minute and forty-five second (1:45) Driver Controlled Period.

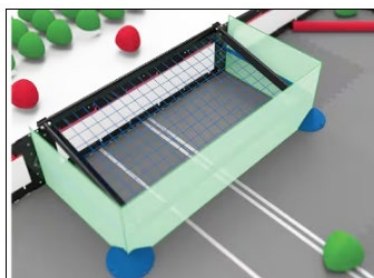
The object of the game is to attain a higher score than the opposing Alliance by Scoring Triballs in Goals, and by Elevating at the end of the Match.

There are sixty (60) Triballs on a VRC Over Under Field.

There are two netted Goals on opposite sides of the field. A 2” PVC Barrier divides the field into a Red Offensive Zone and a Blue Offensive Zone.



The VRC Over Under Field also includes two sets of Alliance-specific pipes on either side of the Barrier. These are called Elevation Bars, and are used at the end of the Match for Elevating Robots.

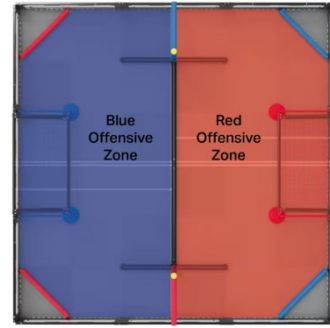


Goal – The Alliance-colored, netted structure on either side of the field, one red and one blue, into which Triballs can be scored for points.

As a Field Element, the term “Goal” refers to the net and all supporting structures / hardware (e.g. PVC pipes and plastic bases).

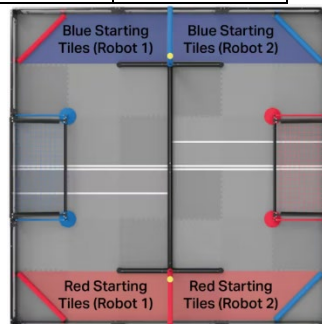
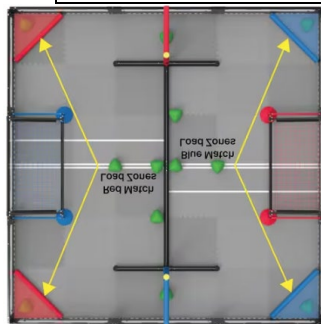
For the purposes of scoring, the “Goal” refers specifically to the three-dimensional volume bounded by a vertical projection of the outermost PVC pipes onto the field and below the surface of the net.

Each Triball scored in a Goal is worth five (5) points, and each Triball which makes it into an Offensive Zone is worth two (2) points.

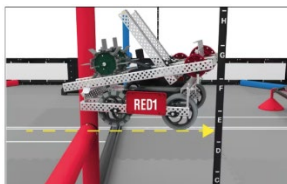


Scoring

<i>Autonomous Bonus</i>	8 Points
Each <i>Triball</i> Scored in a <i>Goal</i>	5 Points
Each <i>Triball</i> Scored in an <i>Offensive Zone</i>	2 Points
Elevation - Top Tier	20 Points
Elevation - 2nd Tier	15 Points
Elevation - 3rd Tier	10 Points
Elevation - 4th Tier	5 Points



The VRC Over Under Field also includes two sets of Alliance-specific pipes on either side of the Barrier. These are called Elevation Bars, and are used at the end of the Match for Elevating Robots.



At the end of the Match, each Robot’s height off the ground will be measured to determine their Elevation Tier. Elevation Points will then be awarded based on each Robot’s Tier relative to all other Robots. For example, getting to Tier E could be worth as many as twenty (20) points OR as few as five (5). Elevation Tiers begin at the floor, and they end above the Elevation Bar!

The Alliance that scores more points in the Autonomous period is awarded with eight (8) bonus points, added to the final score at the end of the match. Each Alliance also has the opportunity to earn an Autonomous Win Point by completing three assigned tasks. This Bonus can be earned by both Alliances, regardless of who wins the Autonomous Bonus.

FOR COMPLETE RULES AND GAME INFO SEE OFFICIAL GAME MANUALS:

<https://www.vexrobotics.com/v5/competition/vrc-current-game> current manual link on the bottom left of the page. <https://link.vex.com/docs/23-24/vrc-over-under/GameManual>

Game Overview Video: <https://www.youtube.com/watch?v=dvDqEI7qO34>

3. JUDGING CRITERIA

FOR COMPLETE RULES AND GAME INFO SEE OFFICIAL GAME MANUAL :

<https://link.vex.com/docs/23-24/vrc-over-under/GameManual>

TEAMS MUST HAVE NO MORE THAN 4 TEAM MEMBERS

Rule infractions will result in appropriate mark deductions at the discretion of the Technical Committee. Any disqualifications will be reviewed by the Director of Competitions.

4. EQUIPMENT AND MATERIALS

Supplied by Competitors:

- Computer or laptop (Windows or Mac) with VEXcode V5 Block software installed
 - Bring a back-up device if wished. No back-up device will be available/provided
 - Please ensure you bring your own network adapter if your computer does not have one built in.
- VEX EDR Competition field and game elements (may be shared between teams and schools)
- VEX V5 robot / Battery Charger/ Controller/ tools /etc
- Refillable water bottle
- Snacks
- All general health and safety guidelines and protective equipment as noted in the Safety section.

To prepare for this challenge Teams will need: VEX V5 Starter Kit (276-7010)

Optional but recommended:

VEX V5 competition kit (276-7030 or 276-7040) Instead of VEX V5 Starter Kit

VEX Game elements kit (276-7500)

Competition Field Perimeter Kit (278-1501) or VEX Portable Field Kit (276-8242)

VRC Anti-Static Full Field Tile Kit (276-7175)

VEXnet Competition Switch (276-2335)

Additional VEX parts as required based on Robot design.

Software download links: VEXcode V5 Blocks: <https://www.vexrobotics.com/vexcode-download> (Recommended)

Supplies can be purchased from iDESIGN Solutions:

www.idesignsol.com

1-877-730-4770

info@idesignsol.com

DO NOT BRING ANY ITEMS THAT ARE NOT LISTED ABOVE. THIS INCLUDES ELECTRONIC DEVICES SUCH AS PHONES, TABLETS ETC.

Prior to attending the Skills Competition, students should be familiar and competent in the use of the tools and equipment listed above as well as safety precautions that should be observed.

5. **SAFETY**

Safety is a priority at the Skills Competition. At the discretion of Technical Committee, any competitor can be removed from the competition site for not having the proper safety equipment and/or not acting in a safe manner.

Competitors must show competence in the use of tools and/or equipment outlined in this scope and can be removed at the discretion of the judges and technical chairs if he/she does not display tool and/or equipment competency.