Table of contents:

1. General Contest Information

1.1: Purpose of Contest

Competitors will design, build, and code a Vex EXP robot to compete in the Push Back game as described below. Teams will compete in head to head matches, Alliance head to head matches, and Robot skills challenges.

1.2: Objective/Description of event

TEAMS MUST HAVE FOUR TEAM MEMBERS

*****This game will be played using Vex EXP robots. All references below and in the Vex Push Back game details should be replaced with EXP*****

The Challenge – VEX PUSH BACK

The GAME:

VEX V5 Robotics Competition Push Back 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 Blocks in Goals, Controlling zones within Goals, and Parking in defined zones at the end of the Match.

There are two (2) components to the contest:

1. Alliance vs. Alliance VEX Robotics Competition Matches are played in a Head-to-Head tournament format. Head-to-Head Tournament consist of Qualification Matches and Elimination Matches. Qualification Matches are used to rank Teams based on Win Points (WP), Autonomous Points (AP), and Strength of Schedule Points (SP).

2. Individual team performance in Skills Matches. Teams will compete in sixty-second (60 sec) long Matches to score as many points as possible. These Matches consist of Driving Skills Matches (60 sec), which are entirely driver controlled, and Autonomous Coding Skills Matches (60 sec), which are autonomous with limited human interaction. Teams will be ranked based on their combined score in the two types of Matches.

The DETAILS for Head-to-Head matches:

There are eighty-eight (88) Blocks on a V5RC Push Back Field.

There are four (4) Goals located around the field. Two (2) Long Goals, and two (2) Center Goals. There are also two (2) Park Zones, one (1) per Alliance.

Each Block scored in a Goal is worth three (3) points. Alliances receive points for Controlling zones in Goals.

Alliances can receive additional points for Parking robots at the end of a Match.

The Alliance that scores more points in the Autonomous period in the head-to-head match is awarded with ten (10) bonus points, added to the final score at the end of the match. Each Alliance can also earn an Autonomous Win Point by completing assigned tasks. This additional Win Point can be earned by both Alliances, regardless of who wins the Autonomous Bonus.

The competition is based upon the following rules:

Online: https://www.vexrobotics.com/push-back-manual

Also available as PDF: https://content.vexrobotics.com/docs/25-26/v5rc-pushback/docs/PushBack2.1.pdf

Game Overview Video: https://youtu.be/ocmONiVun9M (PLEASE WATCH THIS VIDEO)

THE TOURNAMENT CONTINUES…

Once head-to-head matches are completed, teams will then be placed into an Alliance based on tournament rankings, for example 1st place team alliance partner will be 2nd place team and so on (1+2, 3+4, 5+6, 7+8). Alliances will then participate in Elimination Matches to determine the tournament champions. Individual teams' standings will then be decided by Robot Skills Scores. This is detailed next.

ROBOT SKILLS CHALLENGE

Robot Skills Challenge will be the deciding factor for teams to advance to Skills Ontario

In this challenge, Teams will compete in sixty-second (60 Sec) long Matches to score as many points as possible. These Matches consist of Driving Skills Matches, which are entirely driver controlled, and Autonomous Coding Skills Matches, which are autonomous with limited human interaction. Teams will be ranked based on their combined score in the two types of Matches.

The Robot Skills Challenge playing field is set up almost the same as a Head-to-Head VEX Robotics Competition Push Back Match, with the following modifications (reference game manual for field layout):

- In Autonomous Coding Skills Matches, the VEX GPS code strip must be installed on the field
- The Robot must start the Robot Skills Match in a legal starting position for the red Alliance.
- All Drive Team Members must remain in the red Alliance Station for the duration of the Match
- One red Block must be used as a Preload in accordance with
- Revised Block layout. 36 Blocks begin the Match in unscored positions on the Field and 24 Blocks begin in the Loaders, as shown in Figure RSC3-1 (search Figure RSC3-2 in game manual)
- Robots may move freely about the Field after the start of the Match.
- Robot Skills Matches do not include Match Load Blocks.
- Reference Section 4 - Robot Skills of the game manual for details.

The Robot Skills Challenge is a MUST for all Teams. Teams who do not compete will not be able to advance to Skills Ontario.

Teams will play Robot Skills Matches by a pre-scheduled method determined by the Tournament Manager.

Teams will be given the opportunity to play two (2) Autonomous Coding Skills Matches and two (2) Driving Skills Matches. Teams should be aware of when it’s their turn to play on the Robot Skills fields. If a Team misses their turn or is late to the field, then they have not used the opportunity given to them and will not be able to compete in all four matches.

Skills Matches Explained:

Driving Skills Match – A Driving Skills Match consists of a sixty-second (60 sec) Driver Controlled Period. There is no Autonomous Period. Teams can elect to end their run early if they wish to record a Skills Stop Time (reference game manual for information).

Autonomous Coding Skills Match – An Autonomous Coding Skills Match consists of a sixty-second (60 sec) Autonomous Period. There is no Driver Controlled Period. Teams can elect to end their run early if they wish to record a Skills Stop Time (reference game manual for information). For each Robot Skills Match, Teams are awarded a score as described in the Robot Skills Challenge Scoring section, and an optional Skills Stop Time as described in the Skills Stop Time section.

1.3: Technical Committee

Chair(s): Matt McLeod, mcledomatthew@limestone.on.ca

1.4: Contest Schedule

Date and Location: Thursday, February 26, 2026 – St. Lawrence College

9:00 - 9:30	Competitor Registration and Welcome (Cafeteria)
9:30 – 12:30	Competition
12:30 – 1:00	Lunch
1:00 – 3:30	Competition
3:30 – 4:00	Clean-Up
4:00 – 5:00	Dinner (pizza provided)
5:00 – 6:30	Awards Ceremony (Gymnasium)
6:30 – 7:30	Open house and collection of projects/tools

*Competitors must be on time for their contest or may be disqualified at the discretion of the Technical Committee.

Closing ceremony: Thursday, February 26th hosted at St. Lawrence College at 5:30pm

1.5: Additional Information

- Information regarding rules, regulations, and conflict disputes:
- Visitor information such as parking, busses, etc.
- Information on seats for provincials?
- Information on the sponsors of this contest

2. Skills and Knowledge to be Tested

2.1: Specific Requirements

The contest will have a rubric scoring system. The overall score will be the sum of the points awarded for each of the components. Points are awarded as the competitor(s)/project successfully meets/completes certain performance criteria. Performance criteria are structured, when possible, to provide a range of tasks from easy to complex for each category.

3. Judging Criteria

3.1: Rubric

JUDGING CRITERIA for Head to Head Matches:	
Autonomous Bonus	10 points
Each Block Scored	3 points
Each Controlled Zone in a Long Goal	10 points
Controlled Center Goal	8 points
Controlled Center Goal - Lower	6 points
1 Parked Alliance Robot	8 points
2 Parked Alliance Robots	30 points

Judging Criteria for Individual Skills Matches:	
Each Block Scored in a Goal	1 point
Each filled Control Zone in a Long Goal	5 points
Each filled Control Zone in a Center Goal	10 points
Each Cleared Park Zone	5 points
Each Cleared Loader	5 points
Parked Robot	15 points

Teams will be ranked based on the following tiebreakers:

1. Sum of highest Programming Skills Match score and highest Driving Skills Match score.
2. Highest Programming Skills Match score.
3. Second-highest Programming Skills Match score.
4. Second-highest Driving Skills Match score.
5. Highest sum of Skills Stop Times from a Team's highest Programming Skills Match and highest Driving Skills Match (i.e., the Matches in point 1).
6. Highest Skills Stop Time from a Team's highest Programming Skills Match (i.e., the Match in point 2).
7. Third-highest Programming Skills Match score.
8. Third-highest Driving Skills Match score.

4. Equipment and Materials

4.1: Supplied by Competitor

- Computer or laptop (Windows or Mac) with VEXcode EXP Block software installed
    - Bring a back-up device if you wish. 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 EXP robot / Battery Charger/ Controller/ tools /etc
- Refillable water bottle
- All general health and safety guidelines and protective equipment as noted in the Safety section.

4.2: Supplied by Competition

- The field and field elements

5. Safety

5.1: PPE

- Safety Glasses