VEXIQ Robotics Competition – MS

OVERVIEW

Students will design and build a robot to compete in the current year Vex IQ Robotics Competition. The VEXIQ game manual applies for all rules except those outlined in this Washington State event procedure.

ELIGIBILITY

Open to Washington TSA middle school chapters. Three (3) teams per chapter – Team of Two (2) minimum to Six (6) maximum.

TIME LIMITS

A. Entries must be started and completed during the current school year.
B. Each team will be allowed 3 Driving Skills Matches and 3 Programming Skills Matches, each one minute long.
C. 16 Finalists will seeded as alliance partners in 1 minute teamwork matches to determine tournament rankings.

ATTIRE

TSA competition attire is required.

PROCEDURE

PRECONFERENCE

A. Participants access the annual VEXIQ game manual on the VEX robotics website.
B. Participants prepare their documentation and design, build, and test their VIQRC robot.

PRELIMINARY ROUND

A. Participants will arrive at the designated time and place and set up their robots.
B. Robots will be inspected per the VEXIQ game manual.
C. Participants will submit physical engineering design journals.
D. Participants will have 2 hours to complete skills match runs as defined in the VEXIQ game manual. Each team will be allowed 3 driving and 3 programming skills matches.
E. Teams will be ranked by the top combined skills score – programming and driving combined.
F. The top 16 ranked teams will advance to the semi-finals.

SEMI FINAL ROUND

A. Participants will have one hour between prelims and semi-finals.
B. Judges will evaluate the semi-finalist notebooks.
C. Judges will interview the semi-finalist teams.
D. After judging is complete, the final teamwork tournament will be played.
E. An alliance selection process will occur per the game manual with the top 16 teams.
F. Teams will play the VEXIQ game per the game manual.
G. Teams will earn a score from the tournament (see rubric).
H. Tournament results, portfolio, and interviews will determine the final standing.
I. The top five (5) finalists are announced during the awards ceremony.
J. The top three (3) teams advance to nationals.

EVALUATION

PRELIMINARY ROUND

A. Skills scores

SEMI FINAL ROUND

A. Tournament Ranking
B. Portfolio Score
C. Interview Score

Refer to the official rating form for more information.

WTSA ROBOTICS: OFFICIAL SCORING RUBRIC

VEXIQ ROBOTICS COMPETITION

2024 OFFICIAL RATING FORM **MIDDLE and HIGH SCHOOL**

Robotics Challenge Specifications Compliance Go or No-Go		
A robot that is marked No-Go for any of the requirements below will not advance to the performance stage of the event.		
The robot passes inspection per the VIQRC manual	**Go**	**No-Go**

TIER 1 – SKILLS CHALLENGES (100 points)				
Evaluation: Completion of predetermined challenge is used to determine ranking. Autonomous programing score is used to break ties.				
1st: 100 Points	2nd: 80 Points	3rd: 60 Points	4th: 50 Points	
5th: 40 Points	6th: 30 Points	7th: 20 Points	8th: 10 Points	
			TIER 1 – SKILLS CHALLENGES SUBTOTAL (100 points)	

TIER 2 – TEAMWORK ALLIANCE (200 points)				
Evaluation: Each alliance will score as many points as possible in one min. The alliance that scores the most points is 1st plance, 2nd highest is 2nd ect.				
1st: 200 Points	2nd: 160 Points	3rd: 120 Points	4th: 120 Points	
5th: 40 Points	6th: 40 Points	7th: 40 Points	8th: 40 Points	
			TIER 1 – ELIMINATION TOURNAMENT SUBTOTAL (200 points)	

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TIER 2 - Engineering Journal Portfolio (100 points)				Record scores in the column space below
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Identify the Problem (x1)	Does not identify the challenge at the start of each design cycle.	Identifies the challenge at the start of each design cycle. Lacking details in words, pictures, or goals.	Identifies the game and robot design challenges in detail at the start of each design process cycle with words and pictures. States the goals for accomplishing the challenge.	
Brainstorm, Diagram, or Prototype Solutions (x1)	Does not list any solutions to the challenge.	Lists one or two possible solutions to the challenge. Citations provided for ideas that came from outside sources	Lists three or more possible solutions to the challenge with labeled diagrams. Citations provided for ideas that came from outside sources such as online videos or other teams	
Select Best Solution and Plan (x1)	Does not explain any plan or why the solution or plan was selected.	Explains why the solution was selected. Mentions the plan.	Explains why the solution was selected through testing and/or a decision matrix. Fully describes the plan to implement the solution.	
Build and Program the Solution (x1)	Does not record the key steps to build and program the solution.	Records the key steps to build and program the solution. Lacks sufficient detail for the reader to follow the design process.	Records the steps to build and program the solution. Includes enough detail that the reader can follow the logic used by the team to develop their robot design, as well as recreate the robot design from the documentation.	
Test Solution	Does not record steps to test the solution.	Records the key steps to test the solution. Does not record steps to test the solution.	Records all the steps to test the solution, including test results.	
Repeat Design Process	Does not show that the design process is repeated.	Design process is not often repeated for design goals or robot/game performance.	Shows that the design process is repeated multiple times to improve performance on a design goal, or robot/game performance.	
Innovation / Originality	Team shows little to no evidence of independent inquiry in their design process	Team shows evidence of independent inquiry for some elements of their design process	Team shows evidence of independent inquiry from the beginning stages of their design process	
Useability and Completeness	Lacks sufficient detail to understand the design process.	Records the design and development process completely but lacks sufficient detail	Records the entire design and development process in such clarity and detail that the reader could recreate the project's history.	
Record of Team and Project Management	Does not record most of the information listed at the left. Not organized.	Records most of the information listed at the left. Level of detail is inconsistent, or some aspects are missing.	Provides a complete record of team and project assignments; team meeting notes including goals, decisions, and building/programming accomplishments; Design cycles are easily identified. Resource constraints including time and materials are noted throughout	
Notebook Format	ZERO POINTS (DOES NOT MEET CRITERIA) If awarding zero points, please include details in the notes below	Five (10) points if the notebook has evidence that documentation was done in sequence with the design process. This can take the form of dated entries with the names of contributing students included and an overall system of organization. For example, numbered pages and a table of contents with entries organized for future reference		
			ENGINEERING JOURNAL PORTFOLIO SUBTOTAL (100 Points)	

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TIER 2 – SEMI FINAL INTERVIEW (40 points)				Record scores in the column space below
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Knowledge (x2)	Participants seem to have little understanding of the concepts in their project; answers to questions may be vague.	Participants exhibit a general understanding of the concepts in their project.	Participants show clear evidence of a thorough understanding of the concepts in their project.	
Articulation (x1)	Communication of the project is unclear, unorganized, and or illogical; leadership and/or 21st century skills are not evident.	Communication of the project is somewhat clear; leadership and/or 21st century skills are somewhat evident.	Communication of the project is clear, concise, and logical; leadership and/or 21st century skills are clearly evident.	
Team Participation (x1)	The majority of the delivery was made by one (1) member of the team; the partners may be disengaged from the interview.	Team members are generally engaged in the process, though one member may take on more responsibility than others.	Team members are actively involved in the interview and responses to questions; there is shared responsibility on the part of the team members.	
			SEMI FINAL INTERVIEW SUBTOTAL (40 Points)	

TOTAL (440 points)	
SKILLS CHALLENGE SUBTOTAL (100 Points)	
ELIMINATION TOURNAMENT SUBTOTAL (200 Points)	
ENGINEERING JOURNAL PORTFOLIO SUBTOTAL (100 Points)	
SEMI FINAL INTERVIEW SUBTOTAL (40 Points)	

Rules violations (a deduction of 20% of the total possible points for the above sections) must be initialed by the judge, coordinator, and manager of the event. Record the deduction in the space to the right. Indicate rule violated _____	
TOTAL (440 points)	

I certify these results to be true and accurate to the best of my knowledge and ability.

Evaluator's Signature_____