Design Award Rubric

Team Name: _____ Team Number: _____ ☐ Elementary ☐ Middle Judges: _____

For Design Award details, review the Awards Appendix on www.roboticseducation.org/vex-iq-challeng/viq-current-game/

Directions: Mark the descriptor that best describes the team's performance for each criterion.

The Engineering Notebook…

	Criteria	Expert *(3 points)*	Proficient *(3 points)*	Emerging *(2 points)*	Points
Clear Document of Robotic Design Process	Identify the challenge(s)	Describes the challenge at the start of each design process iteration with words and pictures, and states the teams' goals for accomplishing that challenge	Identifies the challenge at the start of each design cycle	Does not identify the challenge at the start each design cycle	
	Brainstorm solutions	Lists 3 or more possible approaches to the challenge with labeled diagrams	Lists 1-2 possible approaches to the challenge.	Does not list the results of the brainstorming sessions.	
	Select the best approach and plan	Explains why the selected approach was chosen and why the other alternatives were not chosen. Fully describes the plan	Explains why the selected approach was chosen. Mentions the plan	Does not explain why the selected approach was chosen	
	Build, Program and Test	Records the building, programming and test processes and the test results in such detail that someone outside the team could recreate the robot by following the steps in the notebook	Documents the key steps to build, program and test the robot and the key test results	Leaves out important information about building, programming & testing the robot	
Repeat process steps, if needed		Contains a complete history of the design process iterations for the season that resulted in the current robot design, repeating the steps above for each iteration	Describes most of the design process iterations, including most of the steps for each iteration	Leaves out most of the design process iterations	
Complete and organized document of Robot Design Process		Contains Project and Team Assignments, Entries from team meetings, with goals, decisions and accomplishments, and recorders' names or initials and dates. Indexed so that anyone can easily locate any needed information	Contains most of the information listed at left. Organized so that team members can locate most needed information	Leaves out important information and/or is poorly organized	

Describe the best features of this **Engineering Notebook**:

Total Points

Total the number of points earned from Notebook
(Add 3 pts for a bound notebook & enter the number on page 2 of this rubric):

Rubrics are confidential judging documents and are not to be returned to the team, coach, or Event Partner, Rubrics should be destroyed immediately after the Judge Advisor has recorded the winning team.

Design Award Rubric

Robot Design Interview

Criteria	Expert *(3 points)*	Proficient *(3 points)*	Emerging *(2 points)*	Points
Engineering Notebook is a clear, complete, and organized document of the robot design process	Students can explain clearly the robot design process and how they documented their use of the process in their Engineering Notebook	Students can explain most aspects of the design process and how they documented their use of the process	Students can explain only limited aspects of the design process and/or how they documented their use of the process	
Team demonstrates effective management of skills, time, and material resources	Students can explain how team progress was tracked against an overall project timeline and how students were assigned to tasks based on their skills and availability	Students can explain how team progress was monitored and how students were assigned to tasks	Students cannot explain how team progress was monitored and/or how students were assigned to tasks	
Students understand and explain how they developed an effective game strategy and robot design	Students can describe multiple game strategies and robot designs that were considered, and they can fully explain how and why the current game strategy and robot design were selected	Students can describe at least two strategies and designs that were considered, and can explain how or why the current strategy or design were selected	Students can only describe the current strategy and design, or they cannot explain how and why the current strategy or design were selected	
Students demonstrate teamwork and effective communication skills	Students demonstrate high level of teamwork, fluency, and courtesy	Students demonstrate some teamwork, fluency, and courtesy	Students demonstrate limited teamwork, fluency, and courtesy	
Describe the best features of this **Robot Design Interview**:		**Total the number of points earned from Student Interview and Discussion:** **Total the number of points earned from Notebook:** *(including bonus for bound notebook)* **Total the number of points combined:**		

Rubrics are confidential judging documents and are not to be returned to the team, coach, or Event Partner, Rubrics should be destroyed immediately after the Judge Advisor has recorded the winning team.

VEX IQ Challenge Awards Scoring and Ranking

Score each criteria cell 1 to 5, (5 is best) Adjust Ranks after each interview Use tick marks. (1 tick mark is best)	Demonstrate knowledge & teamwork skills	Robot design consistently high scoring	Robust robot constructed to fulfill design task	Robot programming consistent, effective, successful	Amaze Award Ranking	High quality construction; robust, clean, effective	Efficiently use mechanical and electrical components	Detailed attention to rigors of competition	Build Award Ranking	Well-crafted, unique design, creative thinking	Highly creative design process & methodology	Ambitious & creative approaches to solving challenge	Create Award Ranking	Programming cleanly written, understandable	Clear Programming Strategy	Programming management process, version history	Think Award Ranking	**Division** **Judge** Checklist suggestion for each interview: 1. Write team number below. 2. First picture of team is the pit sign 3. Interview team 4. Robot picture include team number 5. Have team pick and place Judge dot on pit sign 6. Wish team success and say goodbye 7. Score each award 8. Adjust all award ranks using tick marks 9. Consider team for Judge Award (e.g. Special effort, perseverance, season accomplishments)
Team #	**All**	**Amaze**				**Build**				**Create**				**Think**				Notes and Comments: *(continue on the other side)*

STEM Research Project and Video Presentation

Teams will share the results of their STEM Research Project with VEX IQ Challenge event Judges in a creative and effective four (4) minute video presentation. Following the video there must be a 15 second credits section which includes the name of the entrant or entrants, the team number, the name of the video.

Team Name: _____ **Team Number:** _____

☐ Elementary ☐ Middle **Judges:** _____

For details, review the STEM Research Project and Awards Appendix:

- www.roboticseducation.org/vex-iq-challeng/viq-current-game/

Directions: Mark the descriptor that best describes the team's performance for each criterion.

Criteria	Expert (3 points)	Proficient (2 points)	Emerging (1 point)	Points
Identifies a challenge topic of interest that relates to the STEM theme for the season	Challenge topic clearly identified, with a strong connection to the STEM theme for the season	Challenge topic identified, with some connection to the STEM theme for the season	Topic not identified and/or limited connection to the STEM theme for the season	
Completes research and collect evidence using reliable sources	Provides evidence of thorough research using 3-5 reliable and credible sources	Provides evidence of research using 1-3 reliable sources	Provides evidence from no reliable sources	
Demonstrates a well-organized and documented process to study/explain research findings	Demonstrates highly organized and well documented process to study and explain the research data	Demonstrates some organization and documentation of the project	Demonstrates little to no documentation of the project	
Describes how the research findings were applied to develop and test the solution	Demonstrates an in-depth understanding of the application of the research to develop and test the solution	Demonstrates some under-standing of the application of the research to develop and test the solution	Demonstrates little to no application of research to develop and test the solution	
Shares the solution in an effective and creative high quality video	Video provides clear, effective, and creative explanation of how solution was developed and how it works	Video provides adequate explanation of how the solution was developed and how it works	Video lacks detail needed to understand the team's solution	
Students demonstrate an understanding of the research process	All students demonstrate mastery of the research process	Most students demonstrate some understanding of the research process	Students demonstrate little or no understanding of the research process	
Students demonstrate teamwork and effective communication skills in a student produced video	All students demonstrate high levels of cooperation, courtesy, enthusiasm, confidence, accuracy, and clarity	Students demonstrate some cooperation, courtesy, enthusiasm, confidence, accuracy, and clarity	Students demonstrate limited cooperation, courtesy, enthusiasm, confidence, accuracy, and clarity	

Describe the best features of this video presentation.
(Continue on back of sheet)

Add a 3-point bonus for staying within the 4-minute allotted time and including up to 15 seconds of appropriate credits.

Total Points

_____

_____

_____

NOTE: This is a confidential judging document. It should not leave the Judge's room after a competition. Return to the Judge Advisor for disposal.