VEX IQ STEM Research Project
Judging Process

Tarek Shraibati
tarek@roboticseducation.org
Documents

http://www.roboticseducation.org/event-partners/event-partner-resources-documents/

• Judge’s Guide
• Awards Appendix
  – Description of STEM Project award & judging criteria
• STEM Research Project Rubric
• STEM Project signup sheet
The STEM Research Project Award

Presented to the team that shares the most effective STEM Research Project presentation. This presentation, as well as the follow-up discussion with Judges, effectively demonstrates the students’ significant depth of understanding of their topic and research findings. The presentation will also highlight the students’ work in sharing what they learned in an effective format.
The STEM Research Project Award

Key criteria:

- Identifies a challenge topic of interest that relates to the STEM theme for the season
- Completes research and collects evidence using reliable sources
- Demonstrates a well-organized and documented process to study and explain the research findings
- Describes how the research findings were applied to develop and test the solution
- Shares the solution in an effective and creative presentation
- Students demonstrate an understanding of the entire research process
- Students demonstrate teamwork and effective communication skills
- Additional details on the STEM Research Project, including the STEM Research Project rubric, are available at: roboticseducation.org/competition-teams/vex-iq-challenge/.
VEX IQ Challenge

STEM Research Project Presentation

Adult Chaperone Policy

Only students are allowed in the judging room with the Judges unless:

- An adult is requested as a chaperone when only one Judge is present.
- An adult is needed to support student(s) with special needs.
- Adults who are admitted must follow these guidelines:
  - Remain seated in the designated chairs at all times.
  - No adult communications with students or Judges in the presentation rooms.
  - Photography, while seated in the designated chairs, is permitted with judge’s consent.

Thank you for your cooperation and support!
STEM Presentation Pre-event survey

- Event Partner may wish to survey teams ahead of the event to ask if teams will have a STEM Presentation and/or a Design Notebook.
- The Event Partner can plan for the number of judges needed.
- Event Partners may do this via email or use the survey function in Robotevents.com
STEM Presentation Sign up sheet

- STEM Presentation judging schedule
- Event partners may use the attached documents to have teams sign up for STEM Research Project presentations.
- Event partners may choose to add or eliminate tie slots to meet their needs. The schedule should be adjusted to meet the actual event schedule.
- Judges will need time after the last presentation to deliberate. This should be included in the schedule.
- The 15-minute time slot is only a recommendation. Some events use a 12-minute cycle to increase the number of teams given an opportunity to make a presentation.
- Teams have 4 minutes to give their presentation, including setup. Judges will then have up to 4 minutes to ask questions.
- Event partners should include breaks in the schedule for STEM judges as appropriate.
### STEM Presentation Sign up sheet

#### MIDDLE SCHOOL STEM Presentation

Teams should sign up for one presentation time slot below:

Teams have 4 minutes to give their presentation, including setup. Judges will then have up to 4 minutes to ask questions.

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#### ELEMENTARY SCHOOL STEM Presentation

Teams should sign up for one presentation time slot below:

Teams have 4 minutes to give their presentation, including setup. Judges will then have up to 4 minutes to ask questions.

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STEM Research Project Rubric

• Following each presentation judges should use the STEM Research Project Rubric to evaluate each presentation
• Judges place final 3-5 best teams based on the rubric onto the list as a finalist for the STEM Research Project Award
STEM Research Project Rubric

Teams will share the results of their STEM Research Project with VEX IQ Challenge event Judges in a creative and effective four (4) minute presentation, including setup. Judges will then have up to four (4) minutes to ask questions of the team to learn more about their project.

Team Name: ___________________  Team Number: _______  □ Elementary  □ Middle  Judges: ________________________

For details, review the STEM Research Project and Awards Appendix on www.roboticseducation.org/vex-iq-challenge/viq-current-game/

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

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

Describe the best features of this presentation and discussion with the Judges (continue on back of sheet):

_________________________________  _______________________________________

Total Points: ___________________
Final Deliberation

• Rubrics are quantitative in nature.
  – The rubrics are intended to be used by judges to narrow down the field of contenders for each award.

• Judges are expected to apply their qualitative judgement when making a final decision on all awards.
  – Multiple teams often score “perfect” 3’s on a rubric or fall within a couple of points of one another.

• Rubrics are confidential judging documents and should not be returned to the team, coach, or Event Partner. Rubrics should be destroyed immediately after the Judge Advisor has recorded the winning team.
  – Teams with a perfect rubric score often do not understand why they were not selected for an award.
  – Judges should also be aware that they must be very careful in discussing these awards with teams after an event. A judge’s best intentions are often misinterpreted by teams resulting in students with hurt feelings.

• The Judge Advisor and/or the Event Partner must properly dispose of these and all other judging materials at the conclusion of the event.
  – Teams will “dumpster dive”
STEM Research Project at VEX Worlds

• Teams must have been awarded the Design, STEM, or Excellence Award at a state/regional/provincial/national event to be eligible to present a STEM Research project at VEX Worlds.

• STEM Research Project presentation schedules will be emailed to eligible teams the week of VEX Worlds.

• Teams should be sure the email contact listed with their team registration can be accessed during VEX Worlds.