

# VEX IQ Challenge Squared Away - Awards Appendix



## VEX IQ Challenge Awards



### New This Year

The major changes to the VEX IQ Awards appendix this year include:

- Clarified requirement for adult supervision of teams.
- Introduction of limited in-person interviews for STEM Research Project Award at Worlds-qualifying Championship events and VEX Worlds.

### Student-Centered Teams

The Robotics Education & Competition Foundation seeks to increase student interest and involvement in science, technology, engineering, and mathematics (STEM) by engaging students in hands-on sustainable and affordable curriculum-based robotics engineering programs across the U.S. and internationally. Judges play an important role ensuring that the program remains student-centered.

Teams must be student-centered. Students must do the majority of the work designing, programming, and repairing their robot. Coaches, mentors, and parents may provide minimal assistance but may not do any of this work without students present and involved. For example, it is acceptable for a coach, mentor, or parent to guide a brainstorming session on a design. It is not acceptable for a coach, mentor or parent to offer design suggestions during a brainstorming session. Likewise, it is acceptable for an adult to hold a small part for a younger student while the student assembles or repairs a robot. It is not acceptable for an adult to assemble or repair a robot whether or not students are present.

Through observation and interviews with teams, Judges identify teams that are student-centered. These teams understand that the purpose of the program is to enhance the learning process, not to win at any cost. Judges shall give higher consideration to teams that favor the enhancement of student learning over teams that favor winning at any cost.

Judges, with input from event staff, should identify teams that are not student-centered. Teams that are not student-centered should not receive judged awards.

Examples of teams that are not student-centered:

- Teams with robots that are built or programmed or repaired by adults.
- Teams with robots that are built or programmed or repaired by older students (for example, high school students/teams building robots for middle school students/teams).
- Teams with two or more identical robots at one school or club, or so-called “clone bots”.
- Teams with adults that criticize students from alliance teams for poor performance, or adults who blame other teams for low scores.

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## Team Ethics and Conduct

Ethics is an important part of every engineer's professional training and practice. The REC Foundation considers the positive, respectful, and ethical conduct of teams to be an essential component of the VEX competition. A team includes the students, teachers, coaches, mentors, and parents associated with a team. Judges will consider all team conduct when determining judged awards.

## Team Supervision

Teams are to be student-centered, but teams must be supervised by at least one adult. An adult must be present at the event at all times. Anyone age 18 or older and who is not a high school student is considered an adult.

## Awards Overview

This section details the full list of awards presented in the VEX IQ Challenge Program. Most local and regional events will offer a small subset of these awards, based on the number of teams at the event. The only event likely to present most or all of these awards will be VEX Worlds, as warranted by the hundreds of teams participating. The awards presented at each event are chosen by the event planning committee with the help of their Regional Support Manager. Details on the judging process are available in the Judge Guide located at [roboticseducation.org/event-partners/event-partner-resourcesdocuments/](http://roboticseducation.org/event-partners/event-partner-resourcesdocuments/).

Official events may not change award criteria from those listed below. Events not following the award criteria in this document will not qualify teams to higher level events. Judges at local and State/Multi-State/Provincial/National events must follow the judging process outlined in the official Judge Guide. Event Partners are to recruit Judge Advisors and Judges. Event Partners are not to determine winners of judged awards.

The standard set of awards will be offered at most events:

Standard Set of Awards	
Excellence Award	Top All Around Team (Robot Performance and Judged)
Teamwork Champion Award (2 teams)	1st Place Teamwork Challenge Alliance (Robot Performance)
Design Award	Team with most effective and efficient robot design process (Judged)
Robot Skills Champion Award	Team with highest combined top Programming and top Driving Skills Challenge score (Robot Performance)
Judges Award	Team deserving recognition from Judges for special accomplishments (Judged)
Volunteer of the Year	Recognized Adult Event Volunteer (Individual Award, not presented at VEX Worlds)

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VEX Worlds and other large events may also offer some or all of the following awards. For a listing of the awards offered at the event and of the awards that qualify for advancement to championship events, please visit the event page at [robotevents.com](http://robotevents.com):

## Robot Performance Awards

Teamwork Finalist Award (2 teams)	2nd Place Teamwork Challenge Alliance
Teamwork 3rd Place Award (2 teams)	3rd Place Teamwork Challenge Alliance
Robot Skills 2nd Place Award	2nd Place Robot Skills score
Robot Skills 3rd Place Award	3rd Place Robot Skills score

## Technical Judged Awards

*(Listed in priority according to the Qualifying Criteria document)*

Amaze Award	Team with an amazing, well rounded, and top performing robot
Think Award	Team with impressive and effective robot programming
Innovate Award	Team with an effective and efficient design process
Build Award	Team with a well-crafted robot
Create Award	Team with a creative engineering solution
STEM Research Project Award	Team with the most effective STEM Presentation video

## Other Judged Awards

Energy Award	Team that demonstrates extraordinary enthusiasm
Inspire Award	Team that inspires Judges
Sportsmanship Award	Team that demonstrates respect and great enthusiasm

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## Individual Awards

Volunteer of the Year	Recognizes contribution of an adult event volunteer (not presented at VEX Worlds)
Mentor of the Year Award	Recognizes outstanding adult mentor (not presented at VEX Worlds)
Teacher of the Year Award	Recognizes outstanding teacher (not presented at VEX Worlds)
Partner of the Year Award	Recognizes contribution of an event or program partner/sponsor/supporter (not presented at VEX Worlds)
STEM Hall of Fame - Inspiration All-Star	Recognizes Adult STEM All-Star (presented only at VEX Worlds)

## Robot Performance Awards

These awards are based on team performance on the field and not determined by Judges.

The **Teamwork Champion Award** is presented to each of the two teams on the winning alliance in the Teamwork Challenge Finals Matches.

The **Teamwork Challenge Finalist Award** is presented to each of the two teams on the second-place alliance in the Teamwork Challenge Finals Matches. (Formerly called Teamwork Finalist.)

The **Teamwork Challenge 3rd Place Award** is presented to each of the two teams on the third-place alliance in the Teamwork Challenge Finals Matches at VEX Worlds.

The **Robot Skills Champion Award** is presented to the team with the highest combined Programming Skills Challenge and Driving Skills Challenge score. A team's combined score will be determined by adding their highest Programming Skills score and their highest Driving Skills score at a single event. Teams participating in only one of the two skills challenges will receive a zero score in the challenge in which they did not participate.

The **Robot Skills 2nd Place Award** is presented to the team with the second highest combined Programming and Driving Skills Challenge score.

The **Robot Skills 3rd Place Award** is presented to the team with the third highest combined Programming and Driving Skills Challenge score.

## Judged Awards

These awards are determined by Judges and are based on interviews and criteria found in the Judge Guide.

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## Excellence Award

The Excellence Award is the highest award presented in the VEX Robotics competition. This award is presented to a team that exemplifies overall excellence in building a high-quality robotics program. This team is a strong contender in numerous award categories.

### Key criteria

- Engineering Notebook must be submitted (usually at team check-in)
- Ranking for Design Award
- Ranking for Qualification Matches
- Ranking for Robot Skills
- Ranking for other judged awards
- Quality of the team's interview with the Judges
- High-quality robotics program
- Team conduct

## Blended Events

Events having at least ten (10) teams at each the Elementary School and Middle School levels registered two weeks prior to the event must offer two (2) Excellence Awards, one for Elementary School and one for Middle School.

## Excellence Award at VEX Worlds

**Key Criteria and Judging Process:** The key criteria and judging process for the Excellence Award at VEX Worlds are the same as for local and State/Multi-State/Provincial/National events. Online Challenges are not required to be eligible for the Excellence Award at VEX Worlds. However, Judges will consider Online Challenges as part of the overall team evaluation if they are submitted.

**Prequalification:** To be eligible for the Excellence Award at VEX Worlds, a team must have been awarded the Excellence Award at a State/Multi-State/Provincial/National Championship event or REC Foundation designated Signature Event during the current competition season. Eligible teams must submit their Engineering Notebook at VEX Worlds during the first day of check-in. Teams that have won the Excellence Award at VEX Worlds in the previous three years are not eligible for the Excellence Award at VEX Worlds.

Eligible teams will be notified by email after the second weekend in March.

## Design Award

The Design Award is presented to a team that demonstrates an organized and professional approach to the design process, project and time management, and team organization. The team's Engineering Notebook and Judges interview will demonstrate the team's ability to produce a quality robot with minimal adult assistance.

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## Key criteria:

- Engineering Notebook must be submitted (usually at team check-in).
- Engineering Notebook demonstrates a clear, complete, and organized record of the robot design process.
- Team demonstrates effective management of time, talent, and resources.
- Team interview demonstrates their ability to explain their robot design and game strategy.
- Team interview demonstrates effective communication skills, teamwork, and professionalism.

## The Engineering Notebook

One of the primary missions of the REC Foundation is to help students acquire real world life skills that will benefit them in their academic and professional future. Following the engineering design process and creating an Engineering Notebook helps students practice and develop a variety of real-world life skills including project management, time management, brainstorming, communication, and teamwork. The engineering design process and the Engineering Notebook are used by engineering and design professionals in many different fields.

When teams register with the REC Foundation, they receive a bound Engineering Notebook in the Welcome Kit. It has instructions and examples in the front. Teams may use the notebook provided or purchase their own from VEX Robotics or most office supply stores. A bound quad-ruled notebook is the preferred format, and bound notebooks are given bonus points on the Design Award Rubric. The notebook must have been bound before any entries were made in it.

Judges will not accept or evaluate any electronic notebooks including those on laptops, thumb drives, or cloud-based servers.

The engineering design process is iterative. Students identify and define a problem, brainstorm design ideas to solve the problem, test their design ideas, and continue to improve their design ideas until a solution is reached. During the engineering design process, students will encounter obstacles, successes and failures, and learn many lessons. Everything a team does throughout the engineering design process should be documented by the students in their Engineering Notebook.

All Engineering Notebooks should contain these elements:

- Team number on the cover
- Written in ink with errors crossed out using a single line (so errors can be seen)
- Notebook has not been edited
- All pages intact; no pages or parts of pages removed even if they contained errors
- Each page numbered and dated in chronological order
- Each page signed by student author
- Team meeting notes as they relate to the design process
- Pictures, CAD drawings, documents, examples of code, or other material relevant to the design process are glued into the notebook (tape is acceptable, but glue is preferred)

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Outstanding Engineering Notebooks should contain these additional elements:

- Table of contents
- Each page signed by a student witness as well as student author
- First entry is the first team meeting, and each team meeting has an entry
- Descriptions of brainstorming sessions
- Descriptions, sketches, and pictures of design concepts and the design process
- Observations and thoughts of team members about their design and the design process
- Records of tests, test results, and evaluations of specific designs or design concepts
- Team organization practices as they relate to the design process
- Project management practices including their use of personnel, financial, and time resources
- Notes and observations from competitions to consider in the next design iteration
- Descriptions of programming concepts, programming improvements, or significant programming modifications
- A person unfamiliar with the team's work would be able to recreate the robot design based only on information in the Engineering Notebook

## Design Award Rubric

Judges will use the Design Award Rubric to evaluate the teams' performance on the award criteria. The first part of the Design Award Rubric is used to evaluate the quality of a teams' Engineering Notebook. The second part of the rubric is used to evaluate the students' understanding and application of an effective robot design process, as demonstrated in their team pit interview with Judges. The Design Award Rubric is available in the [Judge Guide](#).

## Design Award at VEX Worlds

**Key Criteria and Judging Process:** The key criteria and judging process for the Design Award at VEX Worlds are the same as for local and State/Multi-State/Provincial/National events.

**Prequalification:** To be eligible for the Design Award at VEX Worlds, a team must have been awarded the Excellence Award or Design Award at a State/Multi-State/Provincial/National Championship event or REC Foundation designated Signature Event during the current competition season. Eligible teams must submit their Engineering Notebook at VEX Worlds during the first day of check-in.

Eligible teams will be notified by email after the second weekend in March:

- A reminder will be provided to submit the team's Engineering Notebook during the first day of check-in. A VEX Worlds sticker will be placed on the Engineering Notebook.
- Engineering Notebooks will be reviewed, and teams with the highest-ranking Engineering Notebooks will be selected for Design Award interviews in the team pit area. No scheduled interviews for the Design Award at VEX Worlds.
- The notification will be sent to the team's Primary Contact email, so please ensure that email is correct in the team's [robotevents.com](http://robotevents.com) account.

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## Judges Award

The Judges Award is presented to a team that the Judges determine is deserving of special recognition. Judges consider a number of possible criteria for this award, such as team displays of special attributes, exemplary effort and perseverance at the event, or team accomplishments or endeavors throughout the season that may not fit under existing awards but are nonetheless deserving of special recognition.

## Technical Judged Awards

These awards are Judged using the VEX IQ Challenge Awards Scoring Sheet, which is in the Judges Guide under Event Partner Resources at <http://www.roboticseducation.org>.

The **Amaze Award** is presented to a team that has built an amazing, high-scoring robot that clearly demonstrates overall quality.

Key criteria:

- Robot design is consistently high scoring
- Robot demonstrates a solid mechanical design and is robustly constructed to fulfill its designed task
- Robot programming is consistently effective and successful
- Students understand and explain how they worked together to develop their robot

The Think Award is presented to a team that has developed and implemented quality robot programming as part of their strategy to solve the game challenge. Teams must participate in the Programming Skills Challenge to be eligible for the Think Award.

Key criteria:

- All programming is cleanly written, well documented, and easy to understand
- Team has explained a clear programming strategy to solve the game challenge
- Team demonstrates their programming management process, including version history
- Students understand and are able to explain how they worked together to develop their robot programming

The **Innovate Award** is presented to a team that has demonstrated the ability to implement an effective and efficient robot design process. Their Engineering Notebook and discussion with the Judges will demonstrate the team's ability to produce a quality robot with minimal adult assistance. Only teams that submit Engineering Notebooks are eligible for the Innovate Award. This award will be presented by Judges to a top contender for the Design Award.



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Key criteria:

- Engineering Notebook is a clear, complete, and organized document of the robot design process
- Team demonstrates effective management of skills, time, and material resources
- Students understand and explain how they developed an effective game strategy and robot design
- Students demonstrate teamwork and effective communication skills
- The Build Award is presented to a team that has built a well-crafted and constructed robot.

Key criteria:

- Robot construction is of high quality; robust, clean, and effective use of materials
- Robot efficiently uses mechanical and electrical components
- Robot is designed with a clear dedication to safety and attention to detail
- Robot demonstrates reliability on the field and holds up under competition conditions
- Students understand and explain how they worked together to develop their robot

The **Create Award** is presented to a team whose robot design incorporates a creative engineering solution to the design challenges of this season's game. Key criteria:

- Robot has a well-crafted, unique design solution, which demonstrates creative thinking
- Team has demonstrated a highly creative design process and methodology
- Team has committed to ambitious and creative approaches to solving the game challenge
- Students understand and explain how they worked together to develop their robot

The **STEM Research Project Award** is presented to the team that shares the most effective STEM Research Project video presentation. The 4-minute video presentation demonstrates the students' depth of understanding of the season's STEM research topic and the student's research findings. Only the submitted video entries will be considered. In-person presentations at local events are not allowed. The STEM research topic can be found here: [roboticseducation.org/competition-teams/vex-iq-challenge/](https://roboticseducation.org/competition-teams/vex-iq-challenge/).

Judges will use the STEM Research Project Rubric included in this guide as a tool to evaluate the video presentations. 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.

State/Multi-State/Provincial/National Championship events must offer the STEM Research Project and must require pre-submission of videos the same as local events. State/Multi-State/Provincial/National Championship events may have in-person interviews of the top five (5) teams in each grade level, elementary and middle, that submitted STEM Research Project videos.

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## STEM Research Project Award for VEX Worlds

**Key Criteria and Judging Process:** The key criteria and judging process for the STEM Research Project Award at VEX Worlds are the same as for local and State/Multi-State/Provincial/National events.

**Prequalification:** To be eligible for the STEM Research Project Award at VEX Worlds, a team must have been awarded the Excellence Award or STEM Research Project Award at a State/Multi-State/Provincial/National Championship event or REC Foundation designated Signature Event during the current competition season. Eligible teams will be notified by email after the second weekend in March with instructions for submitting their video for consideration at VEX Worlds.

At VEX Worlds, there will be in-person interviews of the top five (5) teams in each grade level, elementary and middle, that submitted STEM Research Project videos. These top five (5) teams will be notified upon arrival VEX Worlds of their scheduled in-person interview times and location.

## Other Judged Awards

The **Energy Award** is presented to a team that displays a high level of enthusiasm and passion at the event. The team demonstrates boundless passion and energy throughout the competition – in the pit area, on the field, and in the audience, even when their robot is not playing.

### Key criteria:

Team maintains a high level of excitement and energy throughout the event

- Team's passion for competition and robotics enriches the event experience for others
- Students demonstrate teamwork and effective communication skills

The **Inspire Award** is presented to a team that has inspired Judges with their approach to the VEX Robotics program. This team will effectively communicate their passion for the VEX IQ program and maintain a positive attitude throughout the event. The team will have a clear vision for their future and will participate with both a high level of integrity and good sportsmanship. This team demonstrates that they believe they can achieve what they set out to achieve through their diligence.

The **Sportsmanship Award** is presented to a team that has earned the respect and admiration of the volunteers and other teams at the event.

### Key criteria:

- Team is courteous, helpful, and respectful to everyone at the event, on and off the field
- Team interacts with others on the game field in the spirit of friendly collaboration
- Team demonstrates respect and willingness to help event staff, other teams, and spectators
- Team demonstrates excitement and enthusiasm throughout the event

## Individual Awards

Individual awards recognize the contribution of an adult volunteer or sponsor and are determined by the Event Partner or event planning committee before the event. Judges do not determine individual awards. Individual awards do not affect a team's eligibility for other judged awards.

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The **Mentor of the Year** award is presented to a mentor or engineer who is not a teacher and who has helped students achieve goals that were seemingly out of reach. This individual is a role model, a leader and an extraordinary mentor who helps show students new ways to expand their knowledge and solve problems in the worlds of STEM. At VEX Worlds, this award has been replaced with the STEM Hall of Fame - Inspiration all Stars which is found below.

The **Partner of the Year** award is presented to an individual, company, or organization that demonstrates a commitment and devotion to a VEX Robotics club or program, delivering time and resources in support of student learning and achievements through REC Foundation programs.

The **Teacher of the Year** award is presented to a teacher who shows true leadership and dedication to his or her group of students. The winner of this award continually exceeds expectations to ensure a safe, enjoyable and educational experience for all students. At VEX Worlds, this award has been replaced with the STEM Hall of Fame - Inspiration all Stars which is found below.

The **Volunteer of the Year** award is presented to an event volunteer who demonstrates a commitment and devotion to their community, putting in many hours of hard work with persistence and passion to help make events happen. At VEX Worlds, this award has been replaced with the STEM Hall of Fame - Inspiration all Stars which is found below.

## STEM Hall of Fame – Inspiration All-Stars

Students participating in VEX Competitions encounter Inspiration All-Stars each and every day. Some are teachers and mentors who work with individual teams to make a robotics program work. Others are volunteers who help make events happen. They all are devoted individuals who put in many hours of hard work with persistence and passion. Whether these individuals help students achieve goals that may have seemed out of reach or provided opportunities for students to expand their knowledge and solve problems in the worlds of STEM, these all-stars show true leadership and dedication to the VEX Competition experience.

Students, parents, and volunteers will nominate Inspiration All-Stars through a written submission. To be considered for this award at the VEX Worlds, teams must pre-submit a 500-word essay through the Inspiration All-Stars awards web page, which will be available from **September 1, 2019, until December 31, 2019**. Late submittals will not be accepted for this award.

## REC Foundation Online Challenges

The REC Foundation Online Challenges provide teams additional opportunities to earn awards and prizes by showcasing their knowledge and skills in a variety of technical and communication specialties. Rules, judging criteria, and information on the prizes and awards are found at: <http://challenges.robotevents.com/>.

Online Challenge submissions are typically due in mid-January so be sure to check the website for more information.