Guide to Judging

2025-2026

For Robotics Education and Competition Foundation Programs

VEX IQ Robotics Competition (VIQRC)

VEX V5 Robotics Competition (V5RC)

VEX AI Robotics Competition (VAIRC)

VEX U Robotics Competition (VURC)

Table of Contents

Updates & Changelog 3
Introduction 4
The Judging Q&A System 4
Key Links and Documents 5
Key Terms and Definitions 6
Quick Reference Links 8
Section 1: Judging Principles 13
Section 2: Judging Roles 17
Section 3: Event Preparation and Execution 21
Section 4: Awards 24
Section 5: Judging Engineering Notebooks 26
Section 6: Team Interviews 36
Section 7: Award Deliberations 40
Section 8: Remote Judging 44
Judged Awards Appendix 48
Initial Award Candidate Ranking Sheet 55
Final Award Nominee Ranking Sheet 56
Engineering Notebook Rubric (Page 1 of 2) 57
Engineering Notebook Rubric (Page 2 of 2) 58
Team Interview Rubric 59
Team Interview Notes 60
Excellence Award Criteria Checklist 61
Script for Award Not Given Out 62
Innovate Award Submission Information Form 63
Judge Volunteer Check-in Sheet 64
Volunteer Field Note to Judge Advisor 65
Judging Single-Page Reference Sheet 66
Single-Page Outline of the Judging Process 67
Sportsmanship Award Nomination Form 68
Energy Award Nomination Form 69
Team Interview Tips and Sample Questions 70
Award Descriptions for Judges' Room 71

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Updates & Changelog

This document may be updated on the third Monday in the months of June, August, December, and April. In extenuating circumstances, unplanned updates may occur. Any significant changes will be listed below.

June 2025

- **Overall**
  - Various grammatical and typographical fixes
  - Various edits and additions for clarity
  - Past season Q&As integrated into document
  - Added reference tags such as <JP1> to add structure for verbiage references
  - Added “Quick Reference” list of reference tags
- **Section 2: Judging Roles**
  - Added verbiage to clarify best practices and requirements for Judge selection, roles, and certifications
  - Changed some age requirements for Judge volunteers
  - Expanded guidance and requirements for managing conflicts of interest
- **Section 3: Event Preparation and Execution**
  - Added verbiage to clarify best practices and requirements for Event Partners and Judges
- **Section 4: Awards**
  - Award descriptions and criteria moved to *Award Description Appendix* to improve document flow
- **Section 5: Judging Engineering Notebooks**
  - Revised section, “The Engineering Notebook: Purpose & Academic Honesty”
  - Refined list of what Engineering Notebooks should contain
  - Added guidance for adding informational appendices to Engineering Notebooks
  - Added guidance regarding time limits for evaluating Engineering Notebooks
  - Removed guidance for percentages of notebooks in consideration for awards
- **Section 6: Team Interviews**
  - Removed verbiage permitting Judge Advisors to schedule team interviews
- **Collateral / Supporting Documents**
  - Engineering Notebook Rubric has undergone significant changes

Note: For events occurring up to seven (7) days after the release of a new version of the Guide to Judging, both the current version and the previous version of the Guide to Judging as well as printable judging materials are valid for use in qualifying events. This is so as not to present an undue burden for those running events in this one-week period that may have prepared materials using the previous version. Events occurring after those dates must use the most up to date judging materials and verbiage found in the current version of the Guide to Judging.

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Introduction

Judging is an important part of Robotics Education and Competition Foundation (REC Foundation) events. At events, teams of students showcase their knowledge and skills in designing, building, and programming a robot. Students demonstrate their knowledge of the Engineering Design Process by documenting their design process in an Engineering Notebook.

Students exhibit their robot designs and game strategies during match play and individual skills challenges. All of these activities are to be completed by the students with minimal adult assistance. Students must make the decisions, complete the work, and demonstrate their learning and knowledge to Judges for their team to qualify for Judged Awards.

Through the judging process, students have opportunities to practice both written and verbal communication skills, as well as to demonstrate the values espoused in the Code of Conduct and Student-Centered policies. Some awards given at an event may also qualify teams to higher levels of competition.

Serving as a Judge can be an incredibly rewarding volunteer role—you will hear many impressive stories of what students have designed, created, and learned, and in some cases how they have grown as individuals and team members. It is also sometimes not an easy role—there are often many deserving teams worthy of recognition, and difficult choices must be deliberated upon.

However, the most important aspect of judging is giving students the opportunity to share what they have learned and tell the story of their team's progress. This helps to affirm that their efforts are meaningful and valuable, and their stories are worth listening to. It is vital, therefore, that Judges show every team they encounter respect, compassion, and integrity, which includes following all of the rules found in this Guide to Judging. Our competitions are not just about STEM content, but about students growing as teammates and as individuals.

In order to help ensure consistent practices across events and regions, this Guide to Judging should serve Judge volunteers in a similar way that the Game Manual serves referees and scorekeepers. This allows teams to know what to expect from the judging process, and that from event to event, awards are evaluated against consistent, publicly known criteria.

The purpose of this document is to provide the following:

- Descriptions of the roles of Judges, Judge Advisors, and Event Partners
- Policies and procedures for the judging process
- Criteria and descriptions for awards
- Additional tools and materials to conduct the judging process

This document applies to all events that include Judged Awards for VEX IQ Robotics Competition (VIQRC), VEX V5 Robotics Competition (V5RC), VEX AI Robotics Competition (VAIRC), and VEX U Robotics Competition (VURC) events. The contents of this document can also be found in the REC Foundation Library.

Note: Aspects of the VEX Robotics World Championship judging process may differ from this guide due to the scale and complexity of that event.

The Judging Q&A System

All responses in the Q&A system should be treated as official rulings from the REC Foundation Robotics Competition Judging Committee. The Q&A system is the only source besides this Guide to Judging document for official rulings and clarifications, and is functionally an extension of the Guide to Judging. Q&A rulings are effective immediately upon release.

The 2025-2026 Judging Question & Answer System can be found here.

Before posting on the Q&A system, be sure to review the Q&A Usage Guidelines.

1. Read and search the Guide to Judging before posting.
2. Read and search existing Q&As before posting.
3. Quote the applicable verbiage from the latest version of the Guide to Judging in your question.
4. Make a separate post for each question.
5. Use specific and appropriate question titles.
6. Questions will (mostly) be answered in the order they were received.
7. This system is the only source for official rules clarifications.

If there are any conflicts between the Guide to Judging and other supplemental materials (for example, Judge certification courses, REC Foundation Library articles, etc.), the most current version of the Guide to Judging takes precedence.

Similarly, it can never be assumed that definitions, rules, or other materials from previous seasons apply to the current season. Q&A responses from previous seasons are not considered official rulings for the current season. Any relevant clarifications that are needed should always be re-asked in the current season's Q&A.

Key Links and Documents

- REC Foundation Code of Conduct
- REC Foundation Student-Centered Policy
- REC Foundation Qualifying Criteria
- Commitment to Event Excellence
- VIQRC Game Manual and Resources
- V5RC / VURC / VAIRC Game Manual and Resources
- Judging Q&A
- Judge Advisor / Judge Training & Certification Course
- REC Foundation Library

Key Terms and Definitions

Autonomous Coding Skills Match – An Autonomous Coding Skills Match consists of a sixty-second (1:00) Autonomous Period during which robots are controlled only by pre-loaded programming code. Only one team is on the field for this kind of match.

Developing – An evaluation state for Engineering Notebooks. All notebooks that score fewer than two points in any of the first four criteria of the Engineering Notebook Rubric should be considered Developing, as they do not contain a full iteration of the Engineering Design Process.

Digital Engineering Notebook (DEN) – An Engineering Notebook that is submitted digitally via RobotEvents.com. A DEN can be natively digital, or it could be a physical notebook that has been scanned and uploaded digitally.

Driving Skills Match – A Driving Skills Match consists of a sixty-second (1:00) Driver Controlled Period during which students use controllers to drive their robot to score points. Only one robot is on the field for this match.

Engineering Design Process – Exploring a problem, generating and testing solutions, and documenting results in an iterative process.

Engineering Notebook – The document submitted by a team to record their Engineering Design Process. Notebooks are sorted by Judges, and some will be evaluated according to a rubric.

Event Partner (EP) – The tournament coordinator who serves as an overall manager for the volunteers, venue, event materials, and all other event considerations. Event Partners serve as the official liaison between the REC Foundation, the event volunteers, and event attendees.

Finals Match – A match used in the process of determining the champion alliance and which occurs after Qualification Matches. Also known as an **Elimination Match** for V5RC, VAIRC, and VURC.

Fully Developed – An evaluation state for Engineering Notebooks. All notebooks with a score of two points or higher in the first four criteria of the Engineering Notebook Rubric should be considered Fully Developed as this would outline a single iteration of the Engineering Design Process.

Individual Recognition Award – An award that is given to a particular individual rather than a team. An example would be “Volunteer of the Year.”

Judge – Person who interacts with teams at an event to help determine winners of Judged Awards. Those who perform this role online are known as Remote Judges.

Judge Advisor (JA) – The coordinator of all Judges at an event. They are responsible for organizing Judge volunteers, guiding deliberations, and relaying the judged award results to the Event Partner and/or Tournament Manager Operator.

Judged Award – An award that is determined by Judges at an event based on standardized criteria and descriptions.

Judges' Room – A secure and quiet room with adequate space for the judging panel to deliberate. Only the judging panel and specifically authorized volunteers should have access to this room.

Performance Award – An award based solely on a team's on-field performance. Examples would be the Tournament Champion Award or Robot Skills Champion Award.

Qualifying Award – An award that will qualify a team to a higher level of competition, such as an Event Region Championship or the VEX Robotics World Championship. The precedence of Qualifying Awards is listed in the REC Foundation Qualifying Criteria document. Not all awards at an event may be Qualifying Awards.

Qualifying Event – An event is considered "qualifying" if it meets all of the requirements in the official Qualifying Criteria. Certain Performance and Judged Award winners at qualifying events may qualify teams to the next level of competition, such as an Event Region Championship.

Qualification Match – A match in which teams are randomly partnered and share a score. Qualification Matches factor into a team's ranking for the event and determine which teams move on to Finals Matches. The exact ranking methodology is found in the game manuals for the current season.

REC Foundation / RECF – Abbreviations for Robotics Education & Competition Foundation, the organization which oversees the competition aspects of V5RC, VIQRC, VAIRC, and VURC events.

Regional Support Manager (RSM) – An REC Foundation staff member who oversees team and event support for a given region. The contact information for a region's RSM can be found here.

Team Interview – A conversation, typically 10-15 minutes in duration, during which students on a team are asked questions by Judges. Teams demonstrate their ability to explain their robot design and game strategy. The information shared in this interview and the Judges' notes become the basis for award nominations and deliberations.

Tournament Manager – The competition software that is used at events to run and score matches, assign award winners, and print out reports using scoring data from the event.

V5RC – Acronym for VEX V5 Robotics Competition, played by middle and high school aged students. The student eligibility requirements are outlined in the V5RC Game Manual.

VAIRC – Acronym for VEX AI Robotics Competition. This high school / college competition is played using the V5RC game, with notable exceptions to game play, robot construction, and student eligibility contained in the V5RC Game Manual's VAIRC section.

VIQRC – Acronym for VEX IQ Robotics Competition, played by elementary and middle school aged students. The student eligibility requirements are outlined in the VIQRC Game Manual.

VURC – Acronym for VEX U Robotics Competition, a college/university age robotics competition program. VURC is played using the V5RC game, with notable exceptions to game play, robot construction, and student eligibility contained in the V5RC Game Manual's VURC section.

Quick Reference Links

Section 1: Judging Principles	
<JP1>	Judging is confidential
<JP2>	Judging decisions should be impartial and fact-based
<JP3>	Engineering Notebook reviews and Team Interviews must be conducted with consistency
<JP4>	Judges should use qualitative judgement
<JP5>	Every team must be given an equal opportunity to be interviewed
<JP6>	Judging is balanced, with no team earning more than one judged award per event
<JP7>	Judges should act with integrity, selecting winners that best exemplify the award descriptions
<JP8>	Judges must follow guidelines for youth protection
<JP9>	Teams who earn judged awards must be student-centered
<JP10>	Judging should reward teams that show evidence of independent inquiry in their notebook, interview, and design
<JP11>	Team ethics and conduct should align with the REC Foundation Code of Conduct and Student-Centered Policy

Section 2: Judging Roles	
<JR1>	Dress/Attire Considerations
<JR2>	Conflicts of interest are to be avoided or managed
<JR3>	Role description and requirements for Judge Advisor
<JR4>	Role description and requirements for Judge
<JR5>	Role description and requirements (as they relate to judging) for Event Partner
<JR6>	Best practices for volunteer selection and judging panel composition

Section 3: Event Preparation and Execution	
<JT1>	Prior to Event – Event Partner Tasks
<JT2>	Prior to Event – Judge Advisor Tasks
<JT3>	Prior to Event – Event Partner Tasks
<JT4>	Event Day - Event Partner Tasks
<JT5>	Event Day - Event Partner Tasks
<JT6>	Event Day - Judge Advisor Tasks

Section 4: Awards / Award Description Appendix			
<AW1>	Standard Award Types		
<AW2>	Award Quantities & Precedence		
<AW3>	Other Award Types		
<AW4>	Design Award	<AW10>	Create Award
<AW5>	Excellence Award	<AW11>	Judges Award
<AW6>	Innovate Award	<AW12>	Inspire Award
<AW7>	Think Award	<AW13>	Sportsmanship Award
<AW8>	Amaze Award	<AW14>	Energy Award
<AW9>	Build Award	<AW15>	Individual Recognition Awards

Section 5: Judging Engineering Notebooks	
<EN1>	Engineering Notebook: Purpose
<EN2>	Engineering Notebook: Student Centered
<EN3>	Engineering Notebook: Academic Honesty
<EN4>	Engineering Notebook: Using AI tools to generate/organize content is prohibited
<EN5>	Violations of Student Centered or Code of Conduct policies in the notebook may be submitted as Code of Conduct violations

<EN6>	The Engineering Notebook & The Design Process
<EN7>	Engineering Notebook is a requirement for most, but not all, judged awards
<EN8>	Teams may use any format of notebook that best fits their team
<EN9>	General Guidelines for Engineering Notebooks
<EN10>	Guidance for Notebook Appendices
<EN11>	Maintaining Engineering Notebook Quality
<EN12>	Guidance for Notebook Submission Format
<EN13>	Guidance for when Engineering Notebook is in a language not common for the region
<EN14>	Judges should be cognizant of evaluating the content of notebooks, not the level of beautification
<EN15>	The confidentiality principle of judging also applies to Engineering Notebooks
<EN16>	For Digitally submitted notebooks, teams should make every effort to submit their notebook in a format that can generally be opened in a web browser
<EN17>	Guidance for Engineering Notebook Handling
<EN18>	Judges MUST always have access to Engineering Notebooks during the event
<EN19>	Guidance for sorting Engineering Notebooks
<EN20>	Judges should not click on links or QR codes going to content outside of the Engineering Notebook
<EN21>	Completing the Engineering Notebook Rubric
<EN22>	Engineering Notebooks should be evaluated with a standardized time limit for each team
<EN23>	Notebook Anomalies

Section 6: Team Interviews	
<IN1>	Initial Interview Process Overview
<IN2>	Team Interview Scheduling
<IN3>	Judges Interview students, not Adults
<IN4>	Interview Questions
<IN5>	Follow Up Interviews for Award Nominees
<IN6>	Considerations for Cultural or Communication Style Differences
<IN7>	Team Interview Process - Conducting the Team Interview
<IN8>	Team Interview Process - Complete the Team Interview Rubric
<IN9>	Team Interview Process - Identify Initial Candidate Teams Within Judge Group

Section 7: Award Deliberations	
<AD1>	When to Consider Performance Data
<AD2>	Award Nominations from Each Judge Group
<AD3>	Follow-up Interviews for Award Nominees
<AD4>	Obtain reports from Tournament Manager
<AD5>	Final Ranking of Award Winners
<AD6>	Entering Award Winners into Tournament Manager
<AD7>	Collection and Treatment of Judging Materials

Section 8: Remote Judging	
<RJ1>	Consistency Within an Event
<RJ2>	Notebook Submission Deadlines
<RJ3>	Remote Digital Engineering Notebook Judging
<RJ4>	Remote Initial Team Interviews
<RJ5>	Scheduling Remote Initial Team Interviews

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Judging Resources / Supporting Documents
Initial Award Candidate Ranking Sheet
Final Award Nominee Ranking Sheet
Engineering Notebook Rubric
Team Interview Rubric
Team Interview Notes
Excellence Award Criteria Checklist
Script for Award Not Given Out
Innovate Award Submission Information Form
Judge Volunteer Check-in Sheet
Volunteer Field Note to Judge Advisor
Judging Single-Page Reference Sheet
Single-Page Outline of the Judging Process
Sportsmanship Award Nomination Form
Energy Award Nomination Form
Team Interview Tips and Sample Questions
Award Descriptions for Judges' Room

Section 1: Judging Principles

Overview: The following judging principles, when taken as a whole, outline an ethos that Judges, Judge Advisors, and Event Partners should follow. The judging role is a very important one that can make a tremendous impact on the students involved. The ability of all judging volunteers to interact with students and fellow Judges rationally and respectfully is of the utmost importance. Volunteers who are unable or unwilling to abide by these principles should consider volunteering in other roles instead.

All judging volunteers should keep the following principles in mind.

<JP1> Confidentiality

The judging process includes discussions concerning teams as well as written notes and rubrics. **These must remain confidential.** Judges should take precautions to ensure that any discussions are not overheard by—or shared with—teams, other event participants, or event staff. **Informing a team about their standing in award deliberations, rubric scores, or that they have been removed from consideration for Judged Awards due to Code of Conduct concerns, is a violation of this principle.**

Written judging materials, including Judges' notes, rubrics, and awards worksheets are to be given to the Judge Advisor after the event for disposal. Those with access to Engineering Notebooks are not to retain access after the event is over in any form, neither physical nor digital, nor retain photos taken for deliberation purposes at the event.

If the Judges notice a team or individual recording an interview or judging notes, either for their own interview or another team's interview, they should **pause the interview** and ask the recording party to cease recording. If they refuse to do so, this should be brought up to the Event Partner as a Code of Conduct violation. Many people behave differently if they know they are being recorded, which can significantly alter the substance and character of the Team Interview.

This principle of confidentiality explicitly prohibits Judges from sharing specifics about what they saw, heard, read, discussed, or otherwise observed from judging at an event. This includes giving teams specific feedback on their interview or notebook. This is to protect Judge volunteers as well as teams. Sharing specifics of what occurs in the judging process leads to a breakdown of candor among Judge volunteers, as they are not able to speak their mind freely in the judging room if what they say can be shared outside of judging. Sharing information can lead to misunderstandings with teams—even well intentioned feedback can be misinterpreted or taken poorly or out of context.

It is recommended that teams who desire a critique of their work self-evaluate, or ask a trusted adult to assist them outside of the competition space in going through a notebook or interview evaluation. Coaches and team members should not attempt to solicit feedback from Judge volunteers during or after the event. Repeated attempts to do so may result in a Code of Conduct violation.

Note: REC Foundation staff must be provided access to any information pertaining to the event and its processes, including Judging. Such requests do not violate the confidentiality

principle. Similarly, Judge Advisors are still expected to submit information to the REC Foundation Rules and Conduct Committee as part of the Code of Conduct process.

<JP2> Impartiality

Teams at an event should be judged on their merits and behavior at that event only. Judges should take care to be aware of any biases they may have and avoid allowing those biases to influence their ability to impartially judge teams. Judges should strive to be impartial and fact-based.

Conflicts of interest occur when there is a relationship between a judging volunteer and one or more teams or organizations at the event. Additionally, that relationship could create—or appear to create—a situation where teams will not be judged fairly, and that discussions during award deliberations will not be impartial.

If a Judge has conflicts of interest, it is their responsibility to declare those conflicts to the Event Partner and Judge Advisor before the judging process begins. They must mindfully avoid advocating for or against the teams with which they have a relationship, and must not participate directly in the judging process for those teams, such as participating in Team Interviews or Engineering Notebook evaluations. Deliberately concealing a conflict of interest could be grounds for a Code of Conduct violation and/or dismissal of a volunteer.

All volunteers involved in judging should take care to remove any outward appearances of conflicts of interest, including team shirts, buttons, or branded items that would appear to favor any team at the event.

<JP3> Consistency

Engineering Notebooks and Team Interviews must be evaluated under similar conditions. This allows for a more consistent evaluation of each team. This applies to in-person judging at an event and judging for an event that includes remote and in-person evaluation of Engineering Notebooks and/or interviews.

Evaluating some Engineering Notebooks remotely ahead of an event and evaluating others in-person at the event, or allowing some team interviews to last 30 minutes and while others are only 10 minutes long would both be considered violations of this principle. These examples do not provide a consistent judging experience for all teams at the event, and may give some teams advantages over others in the judging process.

<JP4> Qualitative Judgement

Judges are expected to apply qualitative judgment to award criteria when making final decisions on all Judged Awards. As such, a particular or overall score on a rubric is not an automatic disqualification for any Judged Award, and the highest rubric score does not necessarily determine the winner of an award. For example, while completing the Engineering Notebook Rubric results in a quantitative score, Judges must still deliberate and apply qualitative judgement when ranking teams to determine the Design Award winner.

<JP5> Opportunity

Only a limited number of teams at an event will earn a Judged Award. However, every team at an event **must be given an equal opportunity** to be interviewed by Judges even if they have not turned in an Engineering Notebook to be evaluated. A team that elects to not participate in judging by declining to be interviewed is not impacted by this decision in any other part of the competition. It is not acceptable for the Event Partner or Judge Advisor to elect to not interview a team.

<JP6> Balance

No **team** shall be awarded more than one ***Judged Award*** at an event. Performance Awards (such as Tournament Champion), awards determined solely by volunteer nomination (such as the Sportsmanship and Energy awards), or awards presented to an individual (such as the Volunteer of the Year Award) do not affect a team's eligibility to earn a Judged Award. Many awards have overlapping criteria—the intent of this principle is to ensure that a number of different teams should be considered for judged awards at an event.

<JP7> Integrity

Each award should go to the team which best exemplifies the award description and meets the requirements of the award, while still adhering to the principle of balance by not awarding more than one Judged Award per team. Judged Awards should not be reallocated based on Performance Awards or awards earned by a team at a past event. If no team at the event meets the criteria for an award, that award should not be given out.

The intent of this principle is to prohibit negotiations in which Judges trade support for specific teams to earn specific awards, allow personal or professional politics or ideologies to factor into judging decisions, or otherwise allow for biases to influence the judging process.

<JP8> Youth Protection

Judges must be mindful of student safety. Each Judge should work with at least one other Judge in a public space such as a pit area. No meetings should take place in a private space unless the team is accompanied by a responsible adult, such as a coach, mentor, or parent. Judges should avoid asking students personal questions that do not relate to the team, event, or robot. Judges should be mindful of the language they use, and avoid saying things that could be misinterpreted by students on a team.

Some students will be highly motivated and comfortable when speaking with Judges, while others may be more reticent. Judges should make every effort to make the judging experience as pleasant and positive as possible so that the students involved feel as comfortable as possible and have a positive judging experience.

<JP9> Student-Centered Teams

Teams who earn Judged Awards must be student-centered, which means that students have ownership of how their robot is designed, built, programmed, and utilized in match play with other teams and in robot skills matches. Through observation, interviews with teams, and

input from event staff, Judges identify teams that are student-centered and give greater consideration to teams that favor the enhancement of student learning over teams that favor winning at any cost by violating REC Foundation policies. Teams that are not student-centered should not receive Judged Awards. Additional information and guidance on student-centered teams can be found in the REC Foundation Student-Centered Policy.

<JP10> Independent Inquiry

Independent inquiry is a part of the student-centered experience. An important educational aspect of REC Foundation programs is the opportunity for students to explore, experiment, and discover by asking their own questions and seeking answers using the Engineering Design Process. It is expected that all aspects of the Engineering Design Process which are documented and/or implemented are student-directed, whether teams take inspiration from existing designs or ideas or come up with an entirely original design or strategy. Independent inquiry means students are learning how and why things work, rather than accepting another source's results or solutions without question.

Judging should reward teams that show evidence of their own work in their Engineering Notebook, Team Interview, and robot design. A team's journey throughout the season is one of education, learning through experience, and discovery. It is not a race to see who can create the highest scoring robot, bereft of originality or educative substance.

<JP11> Team Ethics and Conduct

The REC Foundation considers the positive, respectful, and ethical conduct of teams to be an essential component of the competition. A team includes the students, teachers, coaches, mentors, parents, and anyone else associated with the team. All participants are expected to act with integrity, honesty, and reliability and operate as student-centered teams with limited adult assistance. Judges will consider all team conduct when determining Judged Awards. This is covered in greater detail by the REC Foundation Code of Conduct and Student-Centered Policy. Teams who do not act in a manner which is in alignment with the REC Foundation Code of Conduct and Student-Centered Policy should not be considered for Judged Awards. The Judge Advisor should discuss with Head Referees and other key volunteers any team behaviors that might impact judging, both positive and negative. Often, on-field staff witness behaviors that Judges may not observe. The Field Note to Judge Advisor is a tool designed for this purpose. Typically, any behavior that is award affecting should also be reported to the Event Partner as a Code of Conduct violation by the appropriate volunteer.

Section 2: Judging Roles

Overview: This section describes the roles and responsibilities of the Judges, Judge Advisors, and Event Partners in the judging process to ensure a consistent judging process at all qualifying events.

The Judge, Judge Advisor, and Event Partner roles each have specific age and suitability requirements. Additionally, it is important that conflicts of interest are mitigated. These occur when a Judge or Judge Advisor has a relationship with a team that would impact their ability to be an impartial judge.

<JR1> Dress/Attire Considerations

All Judge volunteers should dress appropriately for the role, such as wearing comfortable footwear and business casual attire. Judge volunteers should avoid wearing any clothing or items that would give the appearance of a conflict of interest with any team at the event. Many events will provide special apparel to identify Judge volunteers.

<JR2> Managing Conflicts of Interest

Conflicts of interest occur when there is a relationship between a judging volunteer and one or more teams or organizations at the event. Additionally, that relationship could create—or appear to create—a situation where teams will not be judged fairly, and in which discussions during award deliberations will not be impartial. **It is the responsibility of the Event Partner to avoid these situations by recruiting Judges and Judge Advisors who do not have these relationships, and who are individuals vetted for their good character.** Due to the sensitive nature of the role of Judges at REC Foundation events, it is advisable for those roles to be filled selectively rather than by a public sign up or walk-ups.

Due to the volunteer nature of most events, avoiding all conflicts of interest may not always be possible. If a Judge has conflicts of interest, it is their responsibility to declare those conflicts to the Event Partner and Judge Advisor. They must mindfully avoid advocating for or against the teams with which they have a relationship and must not participate directly in the judging process for those teams, such as Team Interviews or Engineering Notebook evaluations.

Even when individuals are of unquestionable character, the appearance of conflicts of interest should also be avoided. Event Partners should look to recruit Judges from a variety of sources in order to mitigate conflicts of interest and to promote Judges having a wide range of backgrounds, perspectives, and knowledge that they bring to the judging process.

Note: For any VEX Robotics World Championship qualifying events, Judge volunteers cannot have any direct conflicts of interest with any team at the event (for example: parents or other family members associated with attending teams or team coaches would be considered to have direct conflicts of interest; this is not an exhaustive list). This is highly recommended for all events.

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Judging Roles - Descriptions and Requirements

<JR3> Judge Advisor (JA)

- Must have passed the current season's Judge Advisor Training & Certification Course prior to the event.
- Has no or minimal conflicts of interest with any teams attending the event.
- Organizes and oversees the overall judging process at an event.
- Facilitates deliberations and delivers final award winners to Event Partner.
- Must be at least age 21 or older and not part of a team competing at the event.
- Assists Event Partner with handling Code of Conduct and Student-Centered issues as necessary. Examples could include students reciting a script for interviews or plagiarizing notebook content.

Note: For more details regarding your responsibility with assisting the Event Partner in Rules and Conduct violations, please see the Code of Conduct Reporting Process.

Note: Exceptions to the volunteer age rules should be rare and require approval from the REC Foundation Regional Support Manager (RSM).

Note: Large or complex events may have **Assistant Judge Advisors** who take direction from the Judge Advisor, and may assist them with aspects of the judging process. This is a great role for someone to gain experience in the Judge Advisor role with the support of an experienced Judge Advisor, as well as a way for large events to delegate judging supervision to multiple people. Assistant Judge Advisors have the same requirements as Judge Advisors.

<JR4> Judge

- Highly encouraged (but not required) to have passed the Judge Training & Certification Course.
- Evaluates teams to determine eligibility for Judged Awards.
- If interacting directly with students, they must work in groups.
- It is helpful that some, if not all, Judges have a background in technology or robotics to better evaluate the more technically-focused awards. Good sources of volunteers can be local STEM-based companies or sponsors, local colleges, VURC teams, or program alumni.
- Age requirements:
    - **VURC/VAIRC –** Must be at least age 21 years or older.
    - **V5RC –** Must be at least age 20 years or older and not part of a V5RC team.
    - **VIQRC –** Must be at least age 18 years or older. Younger volunteers ages 16-17 may be Judges **if paired with another Judge who is 18 or older.** Volunteers in this situation should be mindful of youth protection and conflicts of interest.

Note: Exceptions to the volunteer age rules should be rare and require approval from the REC Foundation RSM.

<JR5> Event Partner

- Oversees the planning and operation of the entire event, including volunteer recruitment and providing support for the Judges and Judge Advisor.
- The Event Partner and Judge Advisor must be two different eligible people. An Event Partner may not serve as a Judge or Judge Advisor at their own event, and Event Partners may not recommend or assign Judged Awards to any team.
- The Event Partner and the Judge Advisor should work together to come up with a general schedule for completing the judging teams at the event, and to ensure there are adequate Judges for the event. If judging is in person, it is recommended to have two Judges for every 8-10 teams at an event to conduct the judging process within time constraints for a one-day event.

Note: There are no volunteer assistant roles for students in Judging. Any appearance of giving students access to judging information or materials should be avoided. For example, high school students should not accompany judges to interviews for V5RC events.

Note: For the VEX Robotics World Championship, all Judges must be age 21 or older.

<JR6> Best Practices for Volunteer Selection and Judging Panel Composition

What makes an effective judge?

Judge volunteers come from a myriad of backgrounds and may bring different experiences, strengths, and perspectives to the Judging Room. However, all effective Judges share some commonalities in serving with integrity, uniformly upholding the principles of judging explained earlier in this document, and working alongside their fellow Judges to deliver a positive student experience and a pleasant atmosphere for volunteers.

Effective Judges approach new situations with the mindset of expanding their horizons by learning from students and fellow Judges. Effective Judges are able to deliberate with one another, respecting and considering different perspectives while working towards decisions that follow the process and are made with integrity.

What makes an effective Judge Advisor?

Effective Judge Advisors have experience with the judging process at REC Foundation events. They are able to work with the Judges at their event with respect while not allowing undue influence from any internal or external factors. Effective Judge Advisors set a professional tone in their judging room, setting an example for other Judges to follow.

Effective Judge Advisors keep track of their Judges and ensure that processes are being followed, while being careful not to exert an undue influence over judging decisions. Judge Advisors are the shepherds of the judging process and are able to speak with both authority and humanity when working with other Judge volunteers.

What makes an effective judging panel?

An effective judging panel is made up of a Judge Advisor and Judges that bring a wide range of background experiences, professional and living knowledge, and perspectives that complement one another. A well-rounded set of perspectives and approaches make an excellent foundation for the evaluation and deliberation processes. All volunteers should abide by the principles of judging, including being transparent about conflicts of interest, keeping confidentiality, fostering student learning through a robotics competition, and keeping the student experience centered in their actions and mindsets during the judging process.

What makes a positive judging experience?

Judging at well conducted events functions best when the Event Partner has made plans to support judging by recruiting sufficient Judges to comfortably complete the judging process based on the event's size and agenda, when the Judges and their Judge Advisor have all of the tools and supplies they need such, including a Judging Room, and when the Judge Advisor has passed the training and is following the judging process outlined in this Guide to Judging.

Section 3: Event Preparation and Execution

Overview: Preparations for judging should be considered during the initial stages of event planning. The size of the event, the number of awards given out, the event agenda, and volunteer recruitment all impact the judging process. Coordination between the Event Partner, the Judge Advisor, and Judge volunteers is crucial for the judging process to operate smoothly and effectively.

In the case of tournaments, judging should conclude on the last day of competition. In the case of leagues, judging must occur close to the date of league finals. If remote judging is utilized, that process should take place as close to the final date of the event as possible to ensure that the teams and robots that Judges evaluate in initial interviews are as close as possible to what is brought to competition and observed by Judges in person.

Prior to Event – Tasks by Role

<JT1> Event Partner - Tasks Prior to the Event

- Recruit a qualified Judge Advisor and Judges for the event well in advance to ensure there are enough Judges to meet the needs of the event.
- Work with the REC Foundation RSM to ensure that all required awards are listed on RobotEvents.com, and corresponding trophies/certificates are procured.
- Ensure that there is a secure and quiet room with adequate space for the judging panel to deliberate (the Judges' Room). Only the judging panel, REC Foundation staff, and specifically authorized volunteers for the event should have access to this room. It is recommended that **this room be clearly labeled** from the outside to prevent unauthorized entry, and that this room is **separated from a general volunteer lounge.**
- Know and understand the roles of the Judges and the Judge Advisor.
- Ensure that the judging panel has appropriate judging materials, including clipboards, pens, highlighters, sticky notes, copies of current judging documents such as rubrics and note-taking sheets, and other needed items. These documents cannot be modified or replaced with unofficial versions.

<JT2> Judge Advisor - Tasks Prior to the Event

- Pass the Judge Advisor Training & Certification Course for the current season prior to the start of judging for the event.
- Ensure that you have no or minimal conflicts of interest with teams attending the event.
- Review the awards to be offered at the event.
- Work with the Event Partner to ensure adequate Judges are recruited and confirm their attendance and skill sets.
- Manage any potential conflicts of interest that individual Judges may have with teams at the event.

- Train Judges either before the event or at the event to ensure that volunteers understand the judging process and how to perform the tasks they are assigned.
- Prepare a judging schedule based on the number of teams registered and the agenda for the event.
- Formulate a clear process for how Engineering Notebooks will be collected and judged.
- Confirm with the Event Partner that the judging panel will have all appropriate and current judging materials and documents, including team lists and match sheets from Tournament Manager.

<JT3> Judge - Tasks Prior to the Event

- Review the game video and game description to understand the fundamentals of the game that teams will be playing.
- Communicate any potential conflicts of interest with teams at the event to the Judge Advisor.
- Become familiar with the current judging materials including official judging documentation, rubrics, and award descriptions. Complete the Judge Training Course (highly encouraged but not required).

Event Day – Tasks by Role

<JT4> Event Partner - Event Day Tasks

- Ensure the judging panel has all needed materials and access to the secure Judges' Room.
- Communicate any team or schedule changes to the Judge Advisor.
- Remember that Event Partners may not recommend or assign Judged Awards to any team or be involved in award deliberations. EPs may recommend or assign awards given to individuals, such as the Volunteer of the Year Award.
- Oversee the entering of awards into Tournament Manager and do a final check to ensure no team is being given more than one Judged Award. If a team was assigned multiple Judged Awards, the Event Partner should consult with the Judge Advisor to rectify the situation.

<JT5> Judge Advisor - Event Day Tasks

- Review the judging process with Judges prior to the start of the event and answer any questions they may have.
- Receive submitted Engineering Notebooks (if being submitted physically or digitally on the day of the event).
- Ensure Judges sign in on the Judge Volunteer Check-In Sheet.
- Train Judges either before the event or at the event to ensure they understand the judging process and how to perform the tasks they are assigned.
- Group Judges and assign each group a subset of teams to interview, managing potential conflicts of interest. This may be done prior to the event. Judges should not

be placed in a position to interview or deliberate for teams with which they have a conflict.
- Assign Judges with pre-existing relationships to each other—or with similar backgrounds—to different Judge groups so that teams are interacting with Judges who have different perspectives and backgrounds. Note: the Judge Advisor should not participate in interviews as part of a judging group unless there is a dire need due to an unforeseen lack of personnel.
- Manage time and ensure judging groups are keeping pace to interview all teams within time constraints.
- Monitor Team Interview completions and the match schedule to ensure judging is completed in time.
- Collect Field Notes to Judge Advisor from event staff prior to final deliberations.
- Guide deliberations for Judged Awards.
- Ensure no team earns more than one Judged Award.
- Record the results of all Judged Awards and communicate the list of award winners to the Event Partner and/or Tournament Manager operator.
- Have the Tournament Manager operator print the award scripts for the award ceremony.
- Maintain confidentiality of judging deliberations and discussions. Teams should not receive any feedback from the Judges or Judge Advisor. Event Partners should only receive specific information discussed by Judges if it directly relates to Code of Conduct violations reported by the judging panel.
- Collect all judging materials to ensure confidentiality. After the event, these materials should be destroyed.
- Ensure the process for returning all Engineering Notebooks to teams is completed, if applicable.

<JT6> Judge - Event Day Tasks

- Conduct one or more tasks depending on the needs at the event, including:
    - Evaluate Engineering Notebooks using the Engineering Notebook Rubric.
    - Interview teams and evaluate using the Team Interview Rubric.
    - Observe teams in competition.
    - Present awards to teams during the award ceremony.
- Communicate any potential conflicts of interest with attending teams to the Judge Advisor.
- Deliberate with other Judges under the direction of the Judge Advisor to assign award winners following the guidelines in the official judging documentation.
- Hand in all judging notes and rubrics to the Judge Advisor.
- **Maintain confidentiality of any judging deliberations and discussions.** Teams should not receive any feedback from Judges aside from positive encouragement and thanks at the end of their interview.

Note: If remote judging is conducted, Engineering Notebook evaluations and/or initial Team Interviews are completed prior to the event. See Section 8: Remote Judging for more details.

In-Person Event Timeline Example

The table below is **an example** of how the in-person judging process might operate in parallel with the rest of the competition schedule during a typical one-day event. Events may operate under different time constraints and as such may not follow this exact sequence. In general, it is advised that Judges begin to interview teams as soon as possible, with a goal of completing all initial interviews in the morning. Engineering Notebook evaluations and followup interviews should be concluded by the end of Qualification Matches at the latest. No part of the judging process is contingent on Finals / Elimination Match performance. All award winners should be determined before the start of finals.

Example In-Person Event Timeline			
TIME	**EVENT ACTIVITY**	**TEAMS**	**JUDGES / JUDGE ADVISOR**
Early Morning	CHECK-IN	Teams check in as present, hand in Engineering Notebooks. Once inspected teams may run practice or skills matches.	Judge orientation and training - Interviews can begin as soon as there are Judges assigned to groups, and after any questions about the process have been addressed by the Judge Advisor. It is advisable to pause interviews during the opening ceremonies / event meeting.
	INSPECTION		
Morning	OPENING CEREMONIES	Teams attend the event meeting.	
	QUALIFICATION MATCHES	Teams are scheduled into Qualification Matches.	Teams are interviewed during breaks between their matches.
Lunch Break	LUNCH BREAK	Lunch break: If event is running behind, teams may run matches through this time.	Working lunch - Judges should take a rest, discuss progress so far, and each group of Judges can name top picks for awards so far. This is often also a good time for Judges to work on evaluating Engineering Notebooks.
Early Afternoon	QUALIFICATION MATCHES	Teams are scheduled into Qualification Matches.	Finish Team Interviews and begin final deliberations. Judge Advisor should collect the final skills challenge and Qualification rankings as well as any field notes. If additional interviews are needed, they should be completed during Qualification Matches.
Afternoon	ALLIANCE SELECTION/ ALLIANCE PAIRINGS	Teams undergo alliance selection (V5RC) or alliance pairings (VIQRC) or have a short break before finals (VURC/VAIRC).	Final Deliberations - Teams should not be interviewed during this time; decisions must be made with the data at hand. Judge Advisor takes final award winners to be entered into Tournament Manager. All Engineering Notebooks should be returned to teams.
End of Day	ELIMINATION/ FINALS MATCHES	Teams participate in Finals Matches and receive awards. Some events may intersperse awards with Finals Matches, others may have an awards ceremony afterwards.	
	AWARDS / CLOSING CEREMONIES		Judge Advisor collects and destroys judging notes and rubrics and clears the Judges' Room of any identifying information. Judges may be asked to read award scripts, present awards, or just be visible for teams at the closing ceremony.

Section 4: Awards

Overview: There are a number of awards that can be offered at a competition; some of these are based on team performance in matches and are not a part of the judging process. Others judge specific attributes demonstrated by teams. The award descriptions and criteria (see the Judged Award Appendix) give guidance on the attributes needed for each award. Some criteria overlap between several awards. All awards take into account team conduct and student-centeredness.

<AW1> Standard Award Types

The Qualifying Criteria contains charts that indicate which awards qualify teams from local events to an Event Region Championship or the VEX Robotics World Championship. The exact number of qualifying spots allocated to each event is determined by the REC Foundation RSM for that region and can be found on that event's information page on RobotEvents.com.

There can be three different types of awards at REC Foundation qualifying competitions:

- **Performance Awards:** These awards are based on robot performance on the competition field in match play (Tournament/Teamwork Champion, Finalist/Second Place, etc.) and Skills Challenges (Robot Skills Champion, Robot Skills Second Place, etc.). Performance Awards do not impact a team's eligibility to earn a Judged Award.
- **Judged Awards:** These awards are based on the award criteria. Judges, in coordination with the Judge Advisor, determine winners of Judged Awards using the REC Foundation judging process, award criteria, and rubrics. Event Partners who choose to include judging at their event may choose which awards are offered in accordance with the Qualifying Criteria. The selection of Judged Awards may vary, but the Excellence Award, Design Award, Innovate Award, and Judges Award are required. Single page award descriptions can be printed out for use in Judge deliberations. Teams must have completed an interview to receive a Judged Award. Most, but not all Judged Awards require the submission of an Engineering Notebook.
- **Volunteer Nominated Awards:** These awards are based on the award criteria. Volunteer Nominated Awards are a subset of Judged Awards, and allow volunteer event staff—such as the Head Referee, scorekeepers, and emcees—to nominate teams for these awards based on what they have seen at the event. Alternatively, the awards can be determined solely by the Judges. The Field Note to Judge Advisor and the Sportsmanship and Energy Nomination Award Forms are helpful tools for event staff to submit award nominees and provide information to the Judge Advisor. Only the Sportsmanship and Energy Awards have the option to be determined in this manner.
    - If the Sportsmanship and Energy Awards are determined solely by volunteer nominations and not by Judges:
        - The Event Partner should work with key volunteers such as Head Referees, Division Managers, and others to develop a process to determine the award winners for the Sportsmanship and/or Energy

Awards that is within the guidelines in the Guide to Judging.
        - These awards can be given out at an event that does not include Judged Awards.
        - These awards can be given to a team who has earned a Judged Award at the event.

    - If the Sportsmanship and Energy Awards are determined by Judges:

        - These awards are considered “Judged Awards”; a team can only earn a single Judged Award at the event, including these.
        - Event staff should be prepared to submit multiple candidates and provide additional information if the Judges request it to assist in their deliberations.

<AW2> Award Quantities & Precedence

Each award is given out in a single instance at an event, except for the Excellence Award and Judges Award in accordance with the Qualifying Criteria. If no team meets the requirements for an award, that award should not be given out at that event. An individual team may only earn one Judged Award at an event. They may earn additional Performance or Volunteer Nominated Awards apart from these.

The precedence of Judged Awards is as follows, and aligns with Appendices A, B, and C in the Qualifying Criteria:

- **For VIQRC:** Excellence Award, Design Award, Innovate Award, Create Award, Think Award, Amaze Award, Build Award, Judges Award, Inspire Award, Sportsmanship Award, Energy Award.
- **For all other programs:** Excellence Award, Design Award, Innovate Award, Think Award, Amaze Award, Build Award, Create Award, Judges Award, Inspire Award, Sportsmanship Award, Energy Award.

<AW3> Other Award Types

Two additional types of non-qualifying awards may be presented at some events:

- **Individual Recognition Awards**: These awards recognize the contributions of a volunteer, mentor, teacher, or sponsor, and are determined by the Event Partner. Judges do not determine individual award winners. Event Partners may create their own process for judging these awards if needed.
- **Custom Awards**: While nearly all events choose to use standard awards, it is possible to give out custom awards using the Tournament Manager software. To prevent confusion, Event Partners should ensure that teams understand which awards being presented are custom awards specific to the event, and emphasize that those awards will not factor into qualifications.

Note: For the full list of Judged Awards, along with their descriptions, criteria, and other information, please see the Judged Awards Appendix.

Section 5: Judging Engineering Notebooks

Overview: A team's Engineering Notebook is an original work written and organized by students on the team, and describes a team's Engineering Design Process over the course of their robotics season. The Engineering Notebook is evaluated using the Engineering Notebook Rubric as a sorting tool, with final rankings done qualitatively by Judges. The Engineering Notebook can take the form of a physical book, or it can be maintained digitally in a number of different formats. The Engineering Notebook provides Judges with valuable information about how team members decided on and developed design ideas over time, and is required for many Judged Awards.

Part 1: The Engineering Notebook: Purpose & Academic Honesty - A Statement for Mentors/Coaches, Students, and Judges

<EN1> The Engineering Notebook serves as a useful tool for the team in the current season, a reference for future teams who may use past notebooks as a resource for solving future design challenges, and as a document that illustrates the team's journey throughout the season. It is a foundational part of the Design, Innovate, and Excellence Awards, and a requirement for many other awards. A well-executed Engineering Notebook is useful and readable by students and outside observers, such as Judges. Teams should choose a notebook format and system to organize content that best suits their circumstances. The Engineering Notebook is not intended to exist primarily as a "presentation piece" for Judges. It is a place for students to explain their Engineering Design Process throughout the season, in their own words. The best Engineering Notebooks will prove useful to future iterations of the team looking back to see how some engineering problems may have been solved in a previous season, as well as current students to see their growth throughout their journey that season.

<EN2> The Engineering Notebook, as well as the processes students follow to create it, should align with the REC Foundation's Student-Centered Policy and Code of Conduct. Templates for notebook entries can be a useful tool to help guide younger students as they document their process. However, the end goal should be for students to independently organize and create notebook content. It is never acceptable for adults to contribute materially to the students' notebook. Adult involvement—including adding content, excessive guidance or direction, "cleaning up" documentation (as an example, an adult rewriting a notebook entry for a student with difficult to read handwriting), or organizing notebook content—is not in alignment with the REC Foundation Student-Centered Policy. A significant part of the educational value of the Engineering Notebook is for students to practice written communication skills, which includes collaboration between students on the team, organizing and synthesizing ideas, and summarizing activities and actions. Judges want to view the students' own documentation of their process, which may include misspellings, ideas not going as planned, and problem solving as teams evolve their robot design throughout the season.

<EN3> Teams must abide by the principles of academic honesty in their Engineering Notebook, which includes citing and crediting sources of materials and ideas that are not their

own. If students find information that is helpful for their design development from any outside source (for example: a website, book, video, or another individual/team) they should properly credit the source of that information and explain how they used it in their design process. The information itself should be placed in an appendix to the Engineering Notebook. Students should not attempt to claim outside information as their own original work and should be mindful of how it is presented in the notebook. Misrepresentation of others' work is a violation of the REC Foundation Code of Conduct and the Game Manual. If detected, it can lead to a removal of teams from Judged Awards at an event and initiate the Code of Conduct process.

Teams from the same organization that submit notebooks with common content make it extremely difficult for the content to be verified as being representative of the students on each individual team, and may be interpreted as a misrepresentation of student work. Similarly, student programmers who make use of code libraries should cite their sources, explain what they changed and what they utilized, and ensure that they understand the programming they are using. Students should avoid using programs or code that are beyond their ability to create and explain independently.

A number of example notebooks exist as VEX or REC Foundation online resources, or are shared by teams online. While many of these are laudable examples of well written and organized notebooks, teams who learn or take inspiration from them should be careful not to copy content or formats verbatim. Example notebooks should serve as starting points for teams to generate their own formats, styles, and content. Engineering Notebooks are a way for teams to record their own engineering design process. Plagiarizing notebook content is dishonest and does not serve this purpose.

<EN4> The use of artificial intelligence (AI) programs or tools to generate or organize Engineering Notebook content or programming code is contrary to the REC Foundation Student-Centered Policy and Code of Conduct. Content produced by AI from prompts or by building on existing materials does not genuinely represent the skill level of a team that utilizes these tools. REC Foundation programs offer opportunities to learn a variety of technical, organizational, and interpersonal skills. Not all students will have the same levels of competence in these skills, but all students will benefit from the practice and application of those skills as a part of the Engineering Design Process and creation of an Engineering Notebook. The misuse of AI tools, similar to non-student-centered adult involvement, deprives students of opportunities to gain experience at practicing core communication, organization, independent inquiry, and decision-making skills.

<EN5> If Judges become aware of academic dishonesty or other violations of the Student-Centered or Code of Conduct policies, those concerns should be escalated to the Judge Advisor. This may result in the removal of the team from Judged Awards at that event, and should be submitted to the REC Foundation via the Code of Conduct reporting process for further investigation.

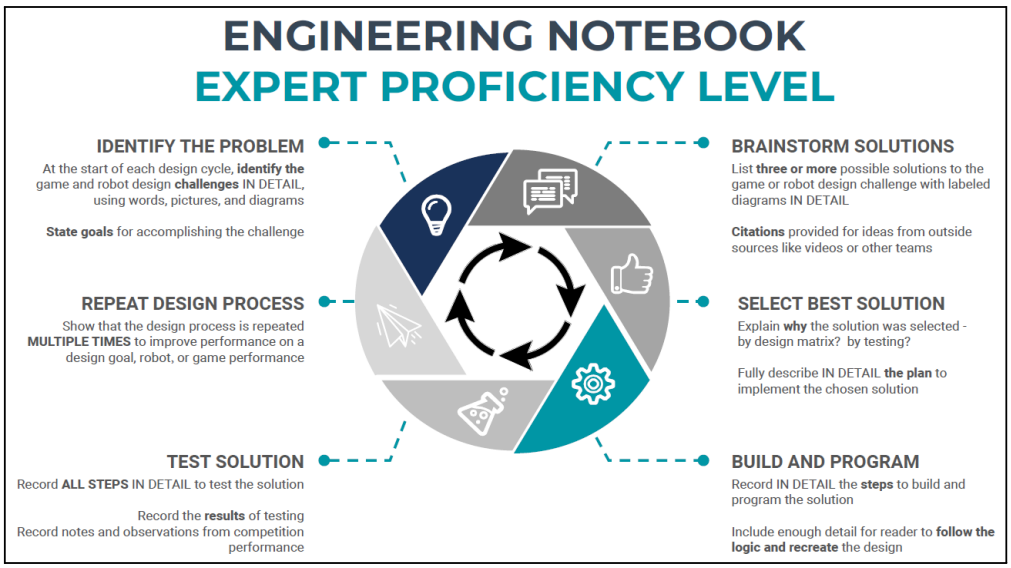
Although the Engineering Notebook should be a document produced by the students on the team and not directed or scripted by adults, Coaches/Mentors should be aware of what students put in their Engineering Notebook. Ultimately the robot, team interview, and Engineering Notebook a team present at an event are reflective of the team and the organization to which they belong.

Part 2: The Engineering Notebook & The Design Process

<EN6> REC Foundation programs help students develop life skills that they may use in their academic and professional future. Documenting work in an Engineering Notebook is a widely used engineering and design industry practice. By following the Engineering Design Process and documenting that process in an Engineering Notebook, students practice project management, time management, brainstorming, and interpersonal and written communication skills. The Engineering Design Process is iterative: students identify and define a problem, brainstorm ideas to solve the problem, test their design ideas, and continue to refine their design until a satisfactory solution is reached. Students will encounter obstacles, successes, and setbacks as they work through the Engineering Design Process. All of these should be documented by the students in their Engineering Notebook.

An Engineering Notebook is more than just a log of actions taken. It also includes explanations that illustrate the 'why' of choices a team makes as they progress through the stages of the design process as they refine their robot design and programming solution. A great Engineering Notebook communicates a team's design process clearly and concisely. **Engineering Notebooks can vary in length, and the length of a notebook will change throughout the season. A long Engineering Notebook is not necessarily a sign of quality, and a short notebook may still be a complete account of the team's design process.**

Below is a graphic outlining the steps of a simple Engineering Design Process. This process may be expressed in different ways, but forms the overall process that the Engineering Notebook should document:



<EN7> In REC Foundation programs, the Engineering Notebook **is required** for the Excellence, Design, Innovate, Amaze, Build, Create, and Think Awards, but is **not a requirement** for other awards. Teams are not required to submit a notebook to receive an in-person interview.

<EN8> Teams may use the physical notebook available from VEX Robotics, or can purchase a different form of physical notebook. Teams may also use an app or cloud-based service, including the templates developed by VEX Robotics, to digitally create and maintain a Digital Engineering Notebook. Please see the section on Remote Judging for more information on Digital Engineering Notebook submissions. Regardless of the format, all notebooks are evaluated by the Judges according to the same award criteria and rubric. These evaluations prioritize content and clarity over sophistication of presentation or notebook length.

<EN9> General Guidelines for Engineering Notebooks

Notebook Formatting

- Team number on the cover / at the beginning of the document
- A table of contents with entries organized for future reference
- Each page/entry is chronologically dated and numbered, starting with the first team meeting
- Each page/entry contains information identifying the student author(s)
- All pages/entries intact; no pages/entries or parts of pages/entries have been removed or omitted; errors can be crossed out using a single line (so they can be seen) rather than erased or removed. It is OK to have grammar or spelling errors!
- Permanently affixed pictures, CAD drawings, documents, examples of code, or other material relevant to the design process (in the case of physical notebooks, tape is acceptable, but glue is preferred)
- Each page/entry is chronologically numbered and accurately dated with when the entry was written
- Notebook has evidence that documentation was done in sequence with the team's individual design process

Notebook Content

- The notebook provides a complete record of team and project assignments including team meeting notes, goals, decisions, and building/programming accomplishments.
    - Resource constraints including time and materials
    - Descriptions, sketches, and pictures of design concepts and the design process, from initial conception and brainstorming to planning and creation of a final design
    - Observations and thoughts of team members about their design and their design process
    - Records of original tests, original test results, and evaluations of specific designs or design concepts and how these have informed team decisions
    - Project management practices including their use of time, personnel, and financial resources
    - Notes and observations from competitions to consider in the next design iteration
    - Descriptions of programming concepts, programming improvements, or significant programming modifications
    - Enough detail that a person unfamiliar with the team's work would be able to follow the logic used by the team to develop their design, and recreate the robot design

- Engineering Notebooks can vary in length, and length of the notebook will of course change throughout the season. A longer Engineering Notebook is not necessarily a sign of quality. Likewise, a shorter notebook may still be a complete account of the team's design process.
- Notebook content is original to the students who wrote it.

<EN10> Notebook Appendices

Any cited content or resource longer than roughly one paragraph should be referenced as an appendix that is attached to the Engineering Notebook. **Appendices are not judged**, so that references in the Engineering Notebook can be better understood without interrupting the flow of the notebook with excessive content that is not original to the team.

Similarly, teams should also provide iterations of their programming in separate appendices to avoid interrupting the flow of a notebook.

A non-exhaustive list of content that should be located in appendices includes:

- Excerpts taken directly from the Game Manual or other competition resources
- Printouts of iterations of a team's code
- White papers or other academic research materials
- Non-original content that is referenced by the team

<EN11> Maintaining Engineering Notebook Quality

- In the interest of youth protection, notebooks should not include an abundance of personal details about the students.
- Content should be properly cited/credited.
- Content should not be generated or filtered by generative AI.
- The notebook should not include content that is written, or directed to be written, by anyone who is not a student on the team in the current season.
- The notebook should not include extraneous content that is overly repetitive or that does not meaningfully contribute to the record of the team's Engineering Design Process.
- All extraneous content is placed in appendices to the Engineering Notebook.
- The notebook does not include content from other teams' or seasons' Engineering Notebooks.

<EN12> Notebook Submission Format

The choice of judging format for the event rests with the Event Partner. Detailed information about judging should be included on the event page on RobotEvents.com. All teams at the event must submit their notebooks in the same format, regardless of their notebook's native format. A team with a physical engineering notebook may need to upload a link to a digital copy via RobotEvents.com, or a team with a digital engineering notebook may be asked to print it out prior to the event.

Whether the notebook is submitted digitally or in person (physical notebook), teams are responsible for their notebook's formatting and presentation, and must ensure all materials are properly organized—including numbering and/or dating pages.

<EN13> If the Engineering Notebook is written in a language that is not common for the region and Judges fluent in the original language are not available, it is the team's responsibility to provide the original language version along with a translated copy. This should be brought to the Event Partner's attention as early as possible so they can inform the Judge Advisor.

<EN14> Different teams may submit notebooks with varying levels of sophistication and beautification. For example, some teams may have brief sketches in pen, others may have color illustrations or CAD/electronic drawings. Judges should evaluate the **content** of notebooks, not the level of beautification. It is possible for many different types of notebook and different communication styles to present relevant content that explains the design process.

Teams may utilize different methods to organize their Engineering Notebooks. For example, some notebooks may be organized purely chronologically, while others might be organized into subsections based on topic. Depending on the submission format, this may complicate the efforts of Judges to evaluate notebooks. Judges should make every effort to evaluate the contents of the notebook based on the Engineering Notebook Rubric, and not be unduly influenced by the organization methodology chosen by the team, particularly if the submission is not in the native format of the notebook.

<EN15> The confidentiality principle of judging also applies to Engineering Notebooks. Whether notebooks are shared physically or digitally, Judges should not photograph, share, or duplicate information found in Engineering Notebooks or otherwise breach this principle.

<EN16> For digitally submitted notebooks, teams should make every effort to submit their notebook as a .PDF file. This standardized format can generally be opened in a web browser without additional software or logins by remote judges. Teams should also attempt to keep their notebook under 500 MBs in size; larger sizes become a burden to judges to download and view and may be inaccessible on metered internet connections.

Part 3: Notebook Judging

<EN17> Engineering Notebook Handling

Physical Engineering Notebooks are typically collected at team check-in or robot inspection at an event and delivered to the Judge Advisor. Digital Engineering Notebook links must be submitted via RobotEvents.com prior to the event's posted deadline.

It is **not** recommended for Judges to collate Engineering Notebooks and rubrics by slipping the rubrics into the notebook. These can be easily forgotten and unintentionally returned to teams, which would violate the confidentiality principle of judging.

Notebooks collected at an event should be returned directly to teams in their pit area or via some other controlled process; it is not recommended that notebooks be left unattended for teams to pick up. This should be done prior to Finals Matches, as some teams may decide to leave prior to the completion of the event.

<EN18> If Engineering Notebooks are submitted digitally and evaluated ahead of the event, Judges **MUST** also have access to those notebooks during the event to evaluate candidates for awards which require an Engineering Notebook and assist with deliberations and follow-up interviews. This does not necessarily mean Judges at the event will completely re-evaluate all notebooks. Judge access to notebooks is for reference to assist with deliberations and/or followup interviews.

<EN19> Step 1 – Sorting the Engineering Notebooks

Judges perform a quick scan of all the Engineering Notebooks and divide them into two categories: **Developing** and **Fully Developed**. If it is unclear whether a notebook should be categorized as Developing or Fully Developed, either another Judge can help make that determination or the notebook should be given the benefit of the doubt and categorized as Fully Developed.

Developing Engineering Notebooks contain little detail, have few drawings, and are not a complete record of the design process. To save Judges' time, the Engineering Notebook Rubric will not be completed for these teams. However, all Engineering Notebooks should still be retained until the end of judging deliberations.

Fully Developed Engineering Notebooks contain great detail, detailed drawings, tests and test results, and solutions to problems the team encountered. Fully Developed notebooks include a complete record of the design process. Notebook attributes for Fully Developed notebooks may be scored as emerging, proficient, and expert on the Engineering Notebook Rubric. All notebooks with a score of two points or higher in the first four criteria of the Engineering Notebook Rubric should be considered Fully Developed, as this outlines a single iteration of the Engineering Design Process. Only Fully Developed notebooks should be considered for the Innovate, Design, and Excellence Awards. For all other awards requiring a notebook, the notebook should contain content that supports the team interview and award criteria.

The list of Fully Developed Notebooks may be further separated based on their rubric scores, however the final rankings of top notebooks at an event must be qualitative. It is very possible for

different Judges to score notebooks differently and for different aspects of the rubric to be emphasized more heavily. As such it is highly recommended for multiple Judges to score each notebook, and that a general consensus identifying top notebooks take precedence over specific rubric scores.

<EN20> Teams may provide links or QR codes to sources such as web pages or videos in their notebook. While these may be useful for the team, and their inclusion should not be discouraged, Judges should NOT investigate these as a part of the Engineering Notebook evaluation. In addition to the security risks of clicking on a link or a QR code to an unknown source, it could take a disproportionate amount of time for Judges to look into that additional content. As such, the content of those links/videos are not considered part of the team's Engineering Notebook document. Teams are encouraged instead to summarize/describe what is in the link so Judges have some insight into what is contained without having to go outside of the Engineering Notebook document.

<EN21> Step 2 – Completing the Engineering Notebook Rubric

Important: The Engineering Notebook Rubric is a tool for initial team notebook evaluations through quantitative comparison. The final determination of all award candidates and winners is done through further qualitative deliberation among Judges based on award descriptions and criteria. As such, a team earning a particular or overall score on a rubric is not an automatic disqualification or threshold for any Judged Award.

It is recommended (but not required) that the same Judges who interview a set of teams also evaluate those teams' notebooks. The Engineering Notebook and Team Interview should reflect one another; having the same Judges evaluate both will give them a better understanding of the team and may prove insightful.

Fully Developed notebooks are scored and ranked using the Engineering Notebook Rubric. They may be initially ranked according to their rubric scores, then top notebooks can be re-ranked according to further qualitative evaluation by Judges.

Judges should review the notebook to identify a proficiency level for each of the Engineering Notebook Rubric criteria. There will likely not be enough time to do a page-by-page reading of every notebook.

Judges should focus on the entries associated with the rubric criteria and related proficiency levels to determine scores for each Fully Developed notebook. It is recommended that at least two Judges score each Fully Developed notebook, and the first few notebook scores be discussed so that Judges can "calibrate" scores to be consistent across the event. Having additional Judges score notebooks will provide even better calibration. Further notebook evaluations and interviews may be needed to support the final rankings of the notebooks and interviews during deliberation. The rubric scores are a sorting tool and do not replace a final qualitative ranking of notebooks.

<EN22> Much like Team Interviews, Engineering Notebooks should be evaluated with a standardized time limit for each team. It is recommended judges take no longer than 10-20 minutes to evaluate each notebook. Higher age level events may require more time per

notebook. Teams should be aware that if their notebook lacks organization (for example, a table of contents) or contains large amounts of extraneous information, this may negatively impact the Judges' ability to evaluate the notebook in the time allotted.

<EN23> Notebook Anomalies

The anomalies described below can be indicators that the team's design decisions are not student directed, the design is not original to the team, or that the Engineering Notebook is not a complete reflection of the student design process. In the absence of direct evidence, teams should always be given the benefit of the doubt.

- "Magic Robots" - Robot designs appear as if spontaneously, with no evidence of a design process. Sometimes this is obscured with a "first design" that does not fully bridge initial concept to final design.
- Entries stop weeks or months before an event with no record of progress, or entries do not begin until after a robot has been built.
- There are no records of failures, ideas that didn't work, or paths that were explored or considered.
- Entries are crafted to create a specific narrative or story.
- The Engineering Notebook has information that is overly broad and not specific to the team. A notebook may have generic information about different drive trains, for example, but does not explain how the team decided upon and built their own design.
- The notebook contents appear to be a direct copy from another team from within or outside the same organization, contents from a previous season's notebook, or notebooks posted online by other teams.

Section 6: Team Interviews

Overview: Team Interviews are timed conversations between a team and a group of Judges, during which Judges ask open-ended questions to learn firsthand from the team about their Engineering Design Process. Teams that are finalists for awards may receive additional interviews as Judges seek additional information. Teams are typically interviewed in their pit areas or by competition fields.

<IN1> Initial Interview Process Overview

The Team Interview Rubric is used for all initial Team Interviews. Judges may use the Team Interview Tips and Sample Questions and Team Interview Notes to assist in interviews. Judges interview teams that have been assigned to them by the Judge Advisor. Teamwork, professionalism, interview quality, and team conduct are considered when nominating and ranking teams for all Judged Awards.

Initial Team Interviews are usually conducted in the team pit area. This allows Judges to observe teams at work and quickly move from team to team. Alternatively, initial Team Interviews may be conducted in a hallway or some other still-public place, such as a library room or cafeteria. This can be a quieter venue for interviews, but Judges must ensure that the interview format remains intact and does not become a prepared presentation. Keep in mind that a more private setting could come across as intimidating for some teams. Youth protection <JP8> should always be a priority when planning interview processes.

All teams at an event must have an opportunity to be interviewed at least once. A team may decline to be interviewed. That team will no longer be eligible for any Judged Award with the exception of Volunteer Nominated Awards if they are offered at the event.

Some teams may want to share parts of their Engineering Notebook during their interview. This is permissible, but may not be possible depending on how and when notebooks are collected. Teams should be prepared to answer the Judges' questions without their notebook.

<IN2>Team Interview Scheduling

Initial Team Interviews can be conducted without notice to teams, or at a time of the team's choosing (for example, schedules made via a signup sheet or a first-come-first-served queue). However, all teams at the event must have their initial interviews scheduled in the same way, and teams are not allowed to choose a particular set of Judges—just an interview time. A best practice for a self-service model to assign interviews is allocating teams to one of several groups of Judges based on a queuing method, with modifications in cases where conflicts of interest arise between a team and a Judge.

Some teams may be hard to find at an event; if they are not in their pit space, another approach may be to find them as they come off the field for their match.

<IN3> Judges Interview Students, not Adults

Judges should only talk to the student members of the team. Occasionally, enthusiastic adults may want to answer the Judges' questions. If this happens, politely remind the adult(s) that

the Judges are there to interview the students. The purpose of the interview is for the student team members to explain their design process and answer questions judges may have about their robot, programming, or Engineering Design process.

<IN4> Interview Questions

Some Judge Advisors create a standardized list of questions for Judges to ask that are used for all interviews at that event. This can be particularly helpful to ensure that all aspects of the robot and competition are addressed, or to assist inexperienced Judges with the interview process. This should not be construed as a rigid “script”; Judges should be free to ask follow-up questions based on student responses. Other events may not use common questions and instead allow judging teams to come up with their own styles of interview to gather information from teams.

<IN5> Follow Up Interviews for Award Nominees

Award finalists should be cross interviewed by multiple groups of Judges as a part of the deliberation process. The Judge Advisor will assign additional interviews as needed during the event. **Follow-up interviews for any award contenders should be conducted without notice, preferably in the competition or pit areas.** This allows Judges to see the team in their workspace and does not give any team an advantage via prior notice.

<IN6> Considerations for Cultural or Communication Style Differences

Students will have varying styles of interacting with Judges during the interview process based on individual or cultural differences. Maintaining eye contact, speaking in a loud enough voice to be easily heard, engaging with other speakers, and other engagement norms may differ between students. **Judges should do their best to give all teams an opportunity to share their design process during the interview and should strive to not allow factors that are beyond students’ control to bias their evaluation of the team.**

Judges should avoid using humor or language that could be interpreted as disparaging. For example, “I can’t believe you came up with this on your own!” might be intended as a compliment to the team but could be misinterpreted as the Judges believing the team is violating the Code of Conduct by claiming work that is not their own. Judges should be very careful with their language and avoid statements that could be misconstrued.

<IN7> Team Interview Process Step 1 – Conducting the Team Interview

- All teams should be interviewed for roughly the same amount of time. The Judge Advisor will create a schedule based on the number of teams and Judges at an event.
- A typical Team Interview lasts approximately 10-15 minutes, though some events may conduct interviews that are slightly shorter or longer than this range depending on the event schedule. Staying on schedule is important to ensure all teams are interviewed and there is sufficient time for Judges to conduct deliberations. Teams that need an interpreter to communicate with Judges may need more time, and should notify the Event Partner upon registration.

- In Team Interviews, Judges directly ask students **open-ended questions** about their robot and design process to give students an opportunity to share their design process, teamwork, and journey throughout the season. Follow-up questions are asked as needed.
- Teams can use their robot and its associated equipment, Engineering Notebook (if available), and code during the interview. However, Judges should engage with students and their robot and not with audio/visual aids such as presentations or displays.
- Judges should take notes using the Team Interview Notes form during interviews and observations to support their evaluations and assist with deliberations.
- Judges should consider taking a picture of each robot with the team number visible to help recall details about robot designs mentioned in their notes.
- If Judges are unable to locate a team's pit area, they should contact the Judge Advisor for assistance. Catching the team as they leave the field from a match is often the best way to track a team down.
- Judges should remember that younger students communicate their ideas differently than older students. Judges should use age-appropriate language when asking questions and consider students' ages when evaluating student responses.
- Judges can refer to the Judging Single Page Reference for brief award descriptions and other useful information.

<IN8> Team Interview Process Step 2 – Complete the Team Interview Rubric / Team Interview Evaluation

Important: The Team Interview Rubric is a tool for initial team interview evaluations through quantitative comparison. The final determination of all award candidates and winners are done through further qualitative deliberation among judges based on award descriptions and criteria. As such, a team earning a particular or overall score on a rubric is not an automatic disqualification or threshold for any Judged Award.

After each interview, Judges should complete the Team Interview Rubric for that team. Judges should go somewhere private to discuss and collaboratively fill out the rubric and/or compile notes, and should take care that their discussions are not overheard by any other party.

Judges should identify student-centered teams with positive, respectful, and ethical conduct during the team interviews and team observations. Conversely, they should also make note of any teams that are not demonstrating these principles, including teams that are not being directly interviewed.

<IN9> Team Interview Process Step 3 – Identify Initial Candidate Teams Within Judge Group

When Judged Awards beyond the Excellence, Design, Innovate, and Judges Awards are offered at an event, the Judge Advisor may provide the Initial Award Candidate Ranking Sheet for use along with the Team Interview Rubric. This form may also be useful when initial Team Interviews are conducted remotely (see section on Remote Judging) as a way to identify nominations from each judging group.

On the Initial Award Candidate Ranking Sheet, Judges will record the numbers of the teams they are assigned to interview on the left side and fill in any additional Judged Awards offered at the event. Awards should be listed according to precedence from left to right, with Qualifying Awards in the leftmost columns, followed by the non-qualifying awards. The precedence of Qualifying Awards is listed in the REC Foundation Qualifying Criteria. Judges will then use the spaces provided to indicate a candidate for each additional Judged Award offered at the event. The end result is a short list of award candidates without rankings to differentiate them.

Another method is to rank candidates for awards as they are interviewed. As Judges interview teams, they may optionally want to use multiple stars or checks on the Initial Award Candidate Ranking Sheet to show rankings as teams are interviewed. This is done by adding check marks to rank teams. For example, if the first team interviewed received one check mark as a recommendation for an award and the second team interviewed would be a better candidate, the second team would receive one check mark and the first team would receive a second check mark, ranking them first and second, respectively. This continues until all teams are interviewed, and the end result is a ranking of teams. This same process can also take place after Judges have interviewed all teams, but ranking award candidates as they go may assist when many teams are being interviewed.

Below is an example of how this sheet might be filled out by one Judge group that is assigned a subset of teams at a larger event. In this example the Build, Create, Think, and Judges awards have been filled in below.

TEAM NUMBER	BUILD AWARD	CREATE AWARD	THINK AWARD	JUDGES AWARD
	Well constructed robot with attention to safety and detail	Team has creative solution for engineering design or game strategy	Effective programming and autonomous strategy	Special Recognition
TEAM A		✓✓✓		✓
TEAM B	✓✓	✓	✓✓	✓✓✓
TEAM C	✓✓✓		✓	
TEAM D	✓	✓✓	✓✓✓	✓✓

This is a simple way for Judges to preliminarily rank their recommendations as they go, with final rankings done after their set of interviews are completed. Additionally, Judges can make notes on the Team Interview Notes sheet.

Section 7: Award Deliberations

Overview: Award deliberation is the last step in the judging process. In this step, Judges work with the Judge Advisor and one another to select candidates for each award and create a plan of action to gather any follow-up information for final decisions.

Award deliberations involve comparing teams to one another. The integrity of the judging process depends on all Judges being able to speak candidly during this process, and what transpires during deliberations is particularly sensitive information. Therefore, all judging deliberation notes and conversations must be kept confidential during and after the event.

The Engineering Notebook Rubric and Team Interview Rubric are tools to assist with deliberations. A team's score, whether a specific line-item on a rubric or the overall score, is a data point that the Judges and Judge Advisor can use as a part of the process. It is not a replacement for qualitative judgements in the deliberation process.

<AD1> When to Consider Performance Data

Some awards specifically refer to teams' performance and rankings in matches. For some other awards, robot performance is indirectly referenced or could be a useful tool to compare teams using a quantitative metric. Judges should make sure that for deliberations they are viewing the final and complete Qualifying Match and Skills rankings and scores. Team performance in Elimination / Finals matches are not a criteria for any award.

Judges should avoid relying too much on robot performance to determine award winners or select award finalists, and the language for most awards provides a great deal of latitude for Judges to consider performance data and its impact on award winners. Due to the myriad of different circumstances that will occur at events, qualitative judgment and consensus will be the best tools for determining how performance metrics factor into those awards.

<AD2> Step 1 – Award Nominations from Each Judge Group

After a Judge group has interviewed their subset of teams, they should decide which one or two teams from their subset of interviews are their top candidates for each award. Judges do not need to nominate a team for every award. They should return to the Judges' Room and share their nominations with the rest of the judging panel. Often this takes the form of Judges writing recommended team numbers on sticky notes and affixing them to printouts of award descriptions, in full view of other Judge groups who are also doing the same.

Award Description sheets are located at the end of this document and printed copies may help visually organize judge input / candidate teams during deliberations. Color coding can help keep the nominations from each Judge group organized (see picture below).

This process results in a shortlist of nominations for each award from all Judge groups. When there are many nominations for each award, the Judge Advisor may ask Judge groups to withdraw weaker candidates from consideration based on brief arguments for and against each nomination. For example, if a team was nominated for the Think Award but did not score highly in Autonomous Coding Skills, they may not be a strong candidate. Or a Judge group, upon considering the merits of other candidates, might withdraw their nomination for their initial candidate.

<AD3> Step 2 – Follow-up Interviews for Award Nominees

This step should be completed before the end of Qualification Matches. The Judge Advisor will organize Judge groups to gather further information to validate the award nominees. This may take the form of observing Skills Challenge matches, Qualification Matches, and behavior in the pits, as well as conducting follow-up interviews with award nominees. The goal is to come up with a final ranking of nominees for each award being presented.

For follow-up interviews, it is recommended that the nominees are interviewed by Judges that have not interviewed them previously. If possible, put Judges together who share an area of expertise to evaluate particular awards. For example, Judges who have a background in programming / computer science would likely be best qualified to evaluate the finalist nominees for the Think Award. This guidance specifically differs from initial interviews, in which Judges with similar expertise should be assigned to different judging groups with the intent of giving all teams a more well-rounded initial assessment.

To preserve the confidentiality principle of the Guide to Judging, teams should **not** be told what award(s) they are in contention for.

<AD4> Step 3 – Obtain Reports from Tournament Manager

This step provides data for the final deliberation for each award at the event, and should be completed shortly after the beginning of Finals/Elimination Matches. Quantitative data needed for deliberations for certain awards can be obtained from the “**Team List**,” “**Qualification Rankings**,” “**Skills Challenge Rankings by Age Group**”, and “**Excellence Award Eligibility**” reports from the **Reports** tab in Tournament Manager.

<AD5> Step 4: Final Ranking of Award Winners

After follow-up interviews are conducted, the Judges who conducted the follow-up interviews should be the ones to deliberate and create a ranking among those teams. It is best practice to have first-choice award nominees, plus three or more additional alternate candidates.

If information comes to light that a team may have violated the Code of Conduct or Student-Centered Policy, either by Judge observations or from Field Notes to Judge Advisor, that team's consideration for Judged Awards should be scrutinized by the Judge Advisor. If there is found to be merit in that information, the award should be given to the next alternate team in the award nomination ranking.

If a team's conduct is found to be egregious, the Judge Advisor should discuss it with the Event Partner and REC Foundation Regional Manager as a potential Code of Conduct violation. Hopefully this is a rare occurrence, but proper communication is important for transparency and to ensure that consequences for actions involving the Code of Conduct are applied fairly.

In the case of the Excellence Award, the winner should come from the list of Design Award finalists that meet the criteria for Performance Awards and other Judged Awards. Moving a team from being a Design Award finalist to Excellence Award winner may result in a reshuffling of winners for other awards to ensure that no team earns more than a single judged award at the event. The Judge Advisor should reconcile award winners to ensure that each award winner earns the highest award at the event for which they are eligible. Having three or more ranked candidates for each award is very helpful in this situation and eliminates the need for additional deliberations.

For Example: Two forms are shown below. Figure 1 represents the award nominees prior to the Excellence Award being decided. Figure 2 represents the results after the Excellence Award has been decided.

Team A has been selected to win the Excellence Award. Team A was also the top candidate for the Design Award. Therefore, the next team in the Design Award ranking (Team B) will now win the Design Award and not the Innovate Award because the Design Award has higher precedence in the Qualifying Criteria. Team D will become the Innovate Award winner. Team C, formally third place for the Think Award, is now the Think Award winner since Teams A and B are earning awards of higher precedence. In the case of the Judges Award (Team E), that award winner is unchanged.

Excellence Award (Required Award)

Design Award (Required Award)	Innovate Award	Think Award	Judges Award (Required Award)
1. Team A	1. Team B	1. Team A	1. Team E
2. Team B	2. Team D	2. Team B	2. Team X
3. Team C	3. Team E	3. Team C	3. Team Z
4. Team X	4. Team Z	4. Team X	4. Team D
5. Team Z	5. Team C	5. Team Z	5. Team Y

Figure 1: Prior to Excellence Award Determination

Excellence Award (Required Award)
Team A

Design Award (Required Award)	Innovate Award	Think Award	Judges Award (Required Award)
~~1. Team A~~	~~1. Team B~~	~~1. Team A~~	1. Team E
2. Team B	2. Team D	~~2. Team B~~	2. Team X
3. Team C	3. Team E	3. Team C	3. Team Z
4. Team X	4. Team Z	4. Team X	4. Team D
5. Team Z	5. Team C	5. Team Z	5. Team Y

Figure 2: After Excellence Award Determination

<AD6> Step 5 – Entering Award Winners into Tournament Manager

After award nominees have been finalized, the Judge Advisor should inform the Event Partner that the process is finished, and the Tournament Manager (TM) operator should put those team numbers into Tournament Manager under the “Awards” tab. It is recommended that the TM operator print the Award Summary Sheet or Award Script report so the Judge Advisor can double-check that all award winners have been entered correctly.

<AD7> Step 6 – Collection and Treatment of Judging Materials

Prior to the award ceremony, the Judge Advisor should secure the Judges’ Room, including collecting all notes, rubrics, and ranking sheets, and erasing any whiteboard notes. Judges should not retain copies of any notes that reference individual teams, including rubrics or award ranking sheets. If pictures of teams or robots were taken, Judges should delete them.

After the event is over, the Judge Advisor should destroy all judging materials off-site. These items are **not** to be given to the Event Partner for destruction.

Section 8: Remote Judging

Overview: Remote Judging occurs when either the Engineering Notebook Judging process, Initial Team Interviews, or both, are done remotely ahead of the event.

Remote Judging follows the same rules and general guidelines as in-person judging, but allows Event Partners and Judge Advisors to utilize volunteers who may not be available in person. It also begins the event day with some aspects of the judging process completed, making it easier to complete judging on schedule in the time allotted.

Determining the judging format (in-person or remote) for an event requires a conversation between the Judge Advisor and Event Partner. Ultimately the decision on the judging format falls to the Event Partner, but the Judge Advisor should be comfortable with working in the chosen format. Remote judging can help better utilize volunteer resources available for the event day, but Judge volunteers need to be comfortable with any additional time and/or technology requirements that may be required of them.

It is important to note that remote judging, in general, requires more volunteer hours than in-person judging during an event. Judges during initial interviews do not get an opportunity to inspect robots in person, and may lose information that would have been conferred by body language. Still, this is a way for events to get some of the work of judging done before the event, and as such may be a viable alternative for some events to entirely in-person judging.

Remote judging follows all guidelines of in-person judging. The following sections highlight the key differences in the judging process if some of the judging tasks usually done in person are conducted remotely. Remote judging can occur in the form of remote Digital Engineering Notebook judging, or remote initial Team Interviews, or a combination of both.

<RJ1> Consistency Within an Event

All teams being judged for an event must be judged in the same format to ensure consistency in the judging experience, and to remove the potential of format-based bias from impacting deliberations. For example, if Engineering Notebooks are submitted for evaluation via links to digital notebooks ahead of the event for some teams, then physical notebooks cannot be evaluated in-person the day of the event for other teams. For Team Interviews, either all teams are given an initial remote interview, or all teams are initially interviewed in person. Teams that are not remotely interviewed cannot be initially interviewed in person at the event.

Remote judging should take place as close to the event as possible so the teams and robots that Judges observe in initial interviews are as similar as possible to what is being brought to competition.

<RJ2> Notebook Submission Deadlines

Primary Team Coaches must provide Digital Engineering Notebook links in their RobotEvents.com account before the stated deadline for the event. The Event Partner and the Judge Advisor should set a deadline that gives the Judges adequate time to review the Digital Engineering Notebooks before the event. The Event Partner will share the list of links

with the Judge Advisor, who will assign Judges to review each Digital Engineering Notebook according to the Engineering Notebook evaluation process (see Section 5). All Digital Engineering Notebooks should be evaluated under similar conditions and time constraints.

<RJ3> Remote Digital Engineering Notebook Judging

- Digital Engineering Notebooks are judged remotely before the event.
- Teams will upload links to their Engineering Notebook via RobotEvents.com. Teams cannot be asked to submit notebooks using a method other than the RobotEvents link or as specific file type, and additional requirements that do not appear in this guide cannot be imposed.
- Once a Digital Engineering Notebook (DEN) link is uploaded via RobotEvents.com, teams may still update their DEN on an ongoing basis, even on event day. Notebook content is expected to change over time, which is part of the Engineering Design Process. However, it is not expected that Judges will re-evaluate a notebook based on materials submitted after the initial evaluation.
    - **Note:** Teams must submit the Innovate Award Submission Form by the posted DEN submission deadline. Alterations or additions after this period may not be reviewed and/or accepted.
- The Event Partner will provide a list of links to the Judge Advisor.
    - It is recommended that the Event Partner and/or Judge Advisor check all links before the submission deadline, and give all teams equal opportunity to replace non-functional links, if possible. There is no obligation to notify teams if they have a non-functioning link. If it is decided to do so, all teams must be contacted in a consistent manner.
- Digital Engineering Notebooks should be freely viewable by the Judges by using the link. Teams should ensure that permissions to view their notebooks are set to allow the judges to view without special permissions or logins.
- The Judge Advisor will organize Judges into groups to review and score notebooks using the Engineering Notebook Rubric.
- Digital Engineering Notebooks should be handled remotely under similar circumstances to ensure consistency.
- Each Digital Engineering Notebook should be evaluated by multiple Judges to establish a ranking of finalist notebooks.
- Events should abide by <EN18>, which stipulates that Judges at the event must have access to all team Engineering Notebooks; this may involve the EP providing equipment such as computers and internet access for use by judges to view Engineering Notebooks at the event.
- Some events may want to conduct a variation on this evaluation format. The overriding principle remains that all notebook submissions are to be **evaluated utilizing the same submission format and in the same timeframe,** so that no entries have any real or perceived preference or advantage.

<RJ4> Remote Initial Team Interviews

- Initial Team Interviews are done remotely before the event, using the Team Interview Rubric and Initial Award Candidate Ranking Sheet.
- Team participants can log into the meeting from a single location sharing a webcam, or from multiple locations.
- The goal of initial remote Team Interviews is to identify nominees for each award (step 1 of the deliberation process).
- Judge Advisors should set up a way to collate judging notes to assist in final deliberations.
- Follow-up interviews for final award nominees (step 2 in the deliberation process) must be done in person to account for team and robot observations at the event.
- In-person Judges for follow-up interviews should not move teams from one award category to another. Doing so would invalidate the initial deliberations of the Remote Judges and effectively restart the judging process without giving equal treatment to all teams.

Note: Remote judging does not take the place of in-person follow up interviews and deliberations on the day of the event. It is meant to provide flexibility for Event Partners and judging volunteers to perform some judging tasks ahead of the event day. Remote judging can allow a smaller group of Judges to take advantage of the longer time frame by scheduling judging ahead of the event and allows use of volunteers that may not be able to attend an event in person.

Remote Interview Protocols

- All judging principles and guidelines still apply.
- Youth protection must be upheld. While conducting remote interviews, each participating team must have one adult representative (18+ and not a high school student) logged in and visible on camera during the entirety of the interview. This adult representative should join the interview before any students arrive. The adult may be in the same room as the students or logged in separately to the remote call. This adult cannot participate in or contribute to the content of the team interview in any way. Their presence ensures there are multiple adult parties involved in any video meeting.
- A Judge should never be alone in a remote interview with a team, but instead should work as part of a group of two or more Judges. With the inclusion of the team's adult representative, this puts the minimum number of adults in a remote interview at three.
- Just as in-person interviews do not allow recording, remote interviews should also never be recorded by any party.

Any meeting notes or data spreadsheets that result from Remote Judging should be under the control of the Judge Advisor, and the information contained in them should be destroyed at the conclusion of the event.

<RJ5> Scheduling Remote Initial Team Interviews

Scheduling the Remote Judging Volunteers

Interview scheduling requires coordination between the Event Partner, Judge Advisor, Remote Judges, and teams. It is recommended that the Event Partner first create a schedule of interview times, then ensure that Remote Judges and the Judge Advisor are available for those times. While the Judge Advisor may not need to participate in each interview, it is highly recommended that they be on hand to help manage any issues that may arise. Additionally, if a Remote Judge ends up not being able to attend or has a technology issue, the Judge Advisor can step in and serve as a Remote Judge so teams can be interviewed at their scheduled time.

Scheduling the Teams

Remote initial Team Interview sign-up times should be provided for teams to schedule themselves via a first-come, first-served sign-up system. If teams miss a clearly communicated sign-up deadline, the Judge Advisor may work with them to schedule them into any available remaining interview times. It is recommended that remote interviews be completed a few days ahead of the event in case extra time is needed due to a volunteer or technology issue disrupting the schedule.

If there are enough Remote Judge volunteers to support it, multiple interviews can be conducted in parallel. For example, participants could log into a single remote judging link with a main room for incoming teams and breakout rooms for each team of Remote Judges. Each team would be moved from the main room into a breakout room for their interview. It may be helpful to have two or more adults (the Judge Advisor and other event staff members) greet teams in the main room as they arrive, ensure they have their adult representative visible on camera, and check that it is the correct team for the time slot before moving teams in to see their Remote Judges. Having this “waiting room” also prevents teams from inadvertently interrupting another team’s interview.

Note: Past experience has shown that half-hour interview cycle times work well: 30 minutes allows ample time for teams to enter the remote judging environment; for Remote Judges to conduct a 10–15 minute interview; and for Remote Judges to discuss, score the interview, and fill out the Initial Award Candidate Ranking Sheet before the next team arrives.

Judged Awards Appendix

<AW4> Design Award

The **Design Award** recognizes an organized and professional approach to the Engineering Design Process, project and time management, and team organization. Student demonstration of the Engineering Design Process is fundamental to the educational value of REC Foundation programs. The Design Award recognizes a team's ability to document and explain their Engineering Design Process via an Engineering Notebook and Team Interview. The Design Award is a required award if judging occurs at an event.

Key criteria of the Design Award are:

- Be at or near the top of qualitative Engineering Notebook rankings with a Fully Developed Notebook.
- Both the Team Interview and Engineering Notebook demonstrate independent inquiry from the beginning stages of the team's design process through execution.
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design.
- Team demonstrates effective management of time, personnel, and resources.
- Team Interview demonstrates the students' ability to explain their robot design and game strategy.
- Team Interview demonstrates effective communication skills, teamwork, and professionalism.
- Engineering Notebook, Team Interview, and conduct at the event demonstrate a student-centered ethos.

Notes:

- The submission of an Engineering Notebook is a requirement for the Design Award. If no team meets the requirements for this award, it should not be given out at an event.
- The quality of a team's Engineering Notebook and Team Interview may play a role in the consideration of that team for other awards.
- To be considered for the Design, Excellence, and Innovate Awards at the VEX Robotics World Championship, teams are required to earn one of the above awards at an event which directly qualifies teams to the VEX Robotics World Championship. Exceptions to this requirement may be made based on geographic circumstances.

<AW5> Excellence Award

The **Excellence Award** recognizes overall excellence in both the Judged Award and the Performance Award categories. The Excellence Award incorporates all the criteria of the Design Award, **plus** the added component of a team's on-field performance at the event. The Excellence Award is a required award if judging occurs at an event.

Key criteria of the Excellence Award are:

- Be at or near the top of qualitative Engineering Notebook rankings with a Fully Developed Notebook.

- Both the Team Interview and Engineering Notebook demonstrate independent inquiry from the beginning stages of the team's design process through execution.
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design.
- Team demonstrates effective management of time, personnel, and resources.
- Team Interview demonstrates the students' ability to explain their robot design and game strategy.
- Team Interview demonstrates effective communication skills, teamwork, and professionalism.
- Engineering Notebook, Team Interview, and conduct at the event demonstrate a student-centered ethos.
- The team is a candidate in consideration for other Judged Awards.
- The team exhibits positive team conduct, good sportsmanship, and professionalism.
- At the conclusion of Qualification Matches, the team is ranked in the top 40% of teams* at the event in Qualification Match rankings.
- At the conclusion of the Robot Skills Challenge matches, the team is ranked in the top 40% of teams* at the event.
- At the conclusion of the Autonomous Coding Skills Challenge matches, the team is ranked in the top 40% of teams* at the event with a score above zero.

*For events with a single Excellence Award, percentages are based on the number of teams at the event. For blended grade level events with two grade specific Excellence Awards, percentages are based on the teams in each grade level for each award.

Notes:

- Under certain conditions, at "blended" events which combine both grade levels (middle school and high school for V5RC, elementary school and middle school for VIQRC, and high school and university for VAIRC), one Excellence Award per grade level may be awarded. This is determined by the Qualifying Criteria. In the instance of two grade level specific Excellence Awards being given out at an event, teams are only compared to teams of the same grade level. This includes quantitative event data, such as rankings. When only one Excellence Award is given out for an event with multiple grade levels, all teams are considered together without regard for their grade level.

  For example, in a 24-team blended event with a single Excellence Award, 40% of 24 teams would be 9.6, which rounds up to 10 teams. To be eligible for Excellence, a team would need to be ranked in the top 10 in the event for the above performance metrics to be eligible for the Excellence Award. If the event had 12 teams of each grade level, thus meeting the requirements for two grade level specific Excellence Awards, then 40% of 12 teams comes out to 4.8, which rounds up to 5. In this instance, teams would need to be ranked 5th place or higher **within their grade level** in the above performance metrics to be eligible for the grade level specific Excellence Award.

- For events qualifying teams directly to a VEX Robotics World Championship event with fewer than 16 teams present, REC Foundation Regional Support Managers may authorize that the 40% ranking requirements for Tournament ranking, overall Skills

ranking, and Autonomous Coding Skills ranking be waived. Teams are still required to have an Autonomous Coding Skills score above zero to be eligible. Judges should still consider a team's performance rankings in their deliberations for the award.

- To be considered for the Design, Excellence, and Innovate Awards at the VEX Robotics World Championship, teams are required to earn one of the above awards at an event which directly qualifies teams to the VEX Robotics World Championship. Exceptions to this requirement may be made based on geographic circumstances.

<AW6> Innovate Award

The **Innovate Award** recognizes an effective and well documented design process for a novel aspect of the team's robot design or gameplay strategy. The submission of an Engineering Notebook is a requirement for the Innovate Award. The team must indicate to Judges where this aspect can be found in their Engineering Notebook via the Innovate Award Submission Information Form, which must be placed within their Engineering Notebook. Teams can only submit a single aspect for consideration at an event. The team who earns the Innovate Award should also meet all of the criteria for the Design Award.

Key criteria of the Innovate Award are:

- Teams identify a specific section or specific pages in their notebook that describes the origin and development of a single design element, strategy, or other attribute that is a key part of their team's robot design or gameplay that is in use at the event.
- This design element, strategy, or other attribute is unique or uncommon among Innovate Award submissions at the event.
- The development of this design element, strategy, or other attribute is well-documented from initial conception through execution.
- Engineering Notebook is Fully Developed, and demonstrates a clear, complete, and organized record of the Engineering Design Process.
- The Engineering Notebook is consistent with the qualities demonstrated in the team interview and robot design.
- Both the Team Interview and Engineering Notebook demonstrate independent inquiry from the beginning stages of their design process through execution.
- Team demonstrates effective management of time, personnel, and resources.
- Team Interview demonstrates their ability to explain their robot design and game strategy.
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos.

Submissions for the Innovate Award must use the Innovate Award Submission Information Form or an exact recreation of that form, including all questions, answers, and all other form information. This can be included by the team in one of two places:

1. Immediately after the cover page of the team's Engineering Notebook. In the case of physical notebooks, this form can be printed out and placed in the notebook. For digital notebooks, this form can be scanned in or recreated and included.

2. In a clearly labeled section in their Engineering Notebook. In this instance, teams should take care to date all entries and arrange them chronologically, fully filling out the information required on the Innovate Award Submission Form. Judges are to only consider the latest entry in the section or the entry in this section that aligns with the event name / date.

Notes:

- The intent of this award is to emphasize design aspects that are unique, novel, and creative, in addition to being well documented and in use at the current event. Design aspects that are commonplace, basic, or not in use at the event will not be considered.
- To be considered for the Design, Excellence, and Innovate Awards at the VEX Robotics World Championship, teams are required to earn one of the above awards at an event which directly qualifies teams to the VEX Robotics World Championship. Exceptions to this requirement may be made based on geographic circumstances.

<AW7> Think Award

The **Think Award** recognizes effective and consistent use of coding techniques and programming design solutions to solve the game challenge.

Key criteria of the Think Award are:

- Participation in the Autonomous Coding Skills Challenge, with a score greater than zero.
- Code is cleanly written, well commented, and easy to follow.
- Team clearly explains the programming strategy to solve the game challenge.
- Team clearly explains their programming management process / version control.
- Students understand and explain how they worked together to develop their robot code.
- Programming is effective at solving the game challenges for both Qualification Matches and Autonomous Coding Skills Challenge matches.
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos.
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design.

<AW8> Amaze Award

The **Amaze Award** recognizes a consistently high-performing and competitive robot.

Key criteria of the Amaze Award are:

- Robot reliably contributes to high-scoring matches with their alliance partners.
- Robot performs at a high level in Driving Skills and Autonomous Coding Skills at the event.
- Programming is effective at solving the game challenges for both Qualification Matches and Skills Challenge matches.

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- Students understand and explain how they worked together to develop their robot design to consistently execute an effective game strategy.
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos.
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design.

<AW9> Build Award

The **Build Award** recognizes a well-constructed robot that is built with a high degree of attention to detail in order to hold up to the rigors of competition.

Key criteria of the Build Award are:

- Robot construction is durable and robust.
- Robot is reliable on the field and withstands the rigors of competition.
- Robot is designed with attention to safety and detail.
- Students understand and explain how they worked together to develop their robot design.
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos.
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design.

<AW10> Create Award

The **Create Award** recognizes a creative engineering design solution to one or more of the challenges of the competition.

Key criteria of the Create Award are:

- Team demonstrates a creative approach to accomplish game objectives.
- Team has committed to ambitious and creative approaches to solving the game challenge.
- Team explains how they worked together to develop their robot design and game strategy.
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos.
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design.

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<AW11> Judges Award

The **Judges Award** recognizes attributes Judges felt were deserving of special recognition. The Judges Award is a required award if judging is being conducted at an event. Optionally, a second Judges Award may be presented at an event at the discretion of the Event Partner and Judge Advisor. This second Judges award may be required for some event types.

Criteria to consider for the Judges Award are:

- Team displays special attributes, exemplary effort, or perseverance at the event.
- Team stands out to Judge volunteers as being deserving of special recognition.
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos.

<AW12> Inspire Award

The Inspire Award recognizes passion for the competition and positivity at the event.

Key criteria of the Inspire Award are:

- Team exhibits passion and a positive attitude at the event.
- Team exhibits integrity and goodwill toward other teams, coaches, and event staff.
- Team overcomes an obstacle or challenge, or achieves a goal or special accomplishment at the event.
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos**.**

<AW13> Sportsmanship Award

The Sportsmanship Award recognizes a high degree of good sportsmanship, helpfulness, respect, and a positive attitude both on and off the competition field.

Key criteria of the Sportsmanship Award are:

- Team is courteous, helpful, and respectful to everyone, on and off the field.
- Team interacts with others in the spirit of friendly competition and cooperation.
- Team acts with honesty and integrity, enriching the event experience for all.

<AW14> Energy Award

The **Energy Award** recognizes outstanding enthusiasm and excitement at the event.

Key criteria of the Energy Award are:

- Team maintains a high level of enthusiasm and excitement throughout the event.
- Team exhibits a passion for the robotics competition that enriches the event experience for all.

<AW15> Individual Recognition Awards

The **Mentor of the Year Award** recognizes a team mentor 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 shows students new ways to expand their knowledge and solve problems in the world of STEM.

The **Partner of the Year Award** recognizes an organization that consistently supports students and schools as they pursue excellence in competitive robotics. The recipient of this award is recognized as a champion who dedicates their time, abilities, and resources to ensure affordability and accessibility for all participants.

The **Teacher of the Year Award** recognizes a teacher who shows true leadership and dedication to their group of students. The winner of this award continually exceeds expectations to ensure a safe, enjoyable, and educational experience for all students.

The **Volunteer of the Year** Award recognizes an individual who leads the effort to "make things happen." Hosting a robotics event takes the collective effort of many people who give their time and effort for the sake of the participants. The Volunteer of the Year demonstrates a commitment and devotion to their community, putting in many hours of hard work with persistence and passion to make events happen.

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Initial Award Candidate Ranking Sheet

Judge Name/Judge Group: _____

Check the boxes below to indicate teams that are strong candidates for awards. All Judge groups will cross-reference their lists to create a final award nomination list. The blank columns should indicate any additional awards given at the event**.** The empty cell below each award name can be filled in with the award descriptions. Use multiple checkmarks to help sort recommendations.

TEAM NUMBER	Think Award	Amaze Award	Build Award	Create Award			Judges Award

All judging materials are strictly confidential. They are not shared beyond the Judges and Judge Advisor and shall be destroyed at the end of the event.

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Final Award Nominee Ranking Sheet

This form is a tool for the Judge Advisor to record the ranked candidates for each award. The blank columns will indicate any additional awards given at the event. A team can appear in multiple award categories. Excellence Award candidates are developed by considering Engineering Notebook scores, Team Interview scores, and on-field performance rankings. If more rankings are needed beyond the five fields provided below, or if there are additional awards being judged, a second sheet should be used.

It is important that there are multiple ranked candidates for each award. The selection of the Excellence Award winner may cause other award winners to change, as each team can only earn one Judged Award at an event.

Excellence Award (Required Award)

Design Award (Required Award)	**Innovate Award** (Required Award)					**Judges Award** (Required Award)
1.	1.	1.	1.	1.	1.	1.
2.	2.	2.	2.	2.	2.	2.
3.	3.	3.	3.	3.	3.	3.
4.	4.	4.	4.	4.	4.	4.
5.	5.	5.	5.	5.	5.	5.

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Engineering Notebook Rubric (Page 1 of 2)

Team # _____ **Grade Level ☐ ES | ☐ MS | ☐ HS | ☐ University Judge Name** _____

Directions: Determine the point value that best characterizes the content of the Engineering Notebook for that criterion. Write that value in the column to the right. This rubric is to be used for all Engineering Notebooks regardless of format (physical or digital). Please refer to Section 5 of the Guide to Judging for information on how to use this rubric.

Note: Any student-centered or academic honesty concerns, such as plagiarism, should be brought to the attention of the Judge Advisor and/or Event Partner.

CRITERIA	PROFICIENCY LEVEL			
ENGINEERING DESIGN PROCESS	**EXPERT** (4-5 POINTS)	**PROFICIENT** (2-3 POINTS)	**EMERGING** (0-1 POINTS)	**POINTS**
IDENTIFY THE PROBLEM / DESIGN GOAL(S)	Clearly identifies the problem / design goal(s) in detail at the start of each design process cycle. This can include elements of game strategy, robot design, or programming, and should include a clear definition and justification of the design goal(s), criteria, and constraints.	Identifies the problem / design goal(s) at the start of each design cycle but is lacking details or justification.	Does not identify the problem / design goal(s) at the start of each design cycle.	____
BRAINSTORM SOLUTIONS	Explores several different solutions with explanation. Citations are provided for ideas that came from outside sources such as online videos or other teams.	Explores few solutions. Citations provided for ideas that came from outside sources.	Does not explore different solutions or solutions are recorded with little explanation.	____
SELECT BEST SOLUTION	Fully explains the "why" behind design decisions in each step of the design process for all significant aspects of a team's design.	Inconsistently explains the "why" behind design decisions.	Minimally explains the "why" behind design decisions.	____
BUILD AND PROGRAM THE SOLUTION	Records the steps the team took 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.	Records the key steps to build and program the solution but lacks sufficient detail for the reader to follow their process.	Does not record the key steps to build and program the solution.	____
ORIGINAL TESTING OF SOLUTIONS	Records all the steps to test the solution, including test results. Testing methodology is clearly explained, and the testing is done by the team. Original testing results are explained and conclusions are drawn from that data.	Records the key steps to test the solution. Testing methodology may be incomplete, or incomplete conclusions are recorded.	Does not record steps to test the solution. Testing or results are borrowed from another team's work.	____
REPEAT DESIGN PROCESS	Shows that the design process is repeated multiple times to work towards a design goal. This includes a clear definition and justification of the design goal(s), its criteria, and constraints. The notebook shows setbacks that the team learned from, and shows design alternatives that were considered but not pursued.	Design process is not often repeated for design goals or robot/game performance. The notebook does not show alternate lines of inquiry, setbacks, or other learning experiences.	Does not show that the design process is repeated. Does not show setbacks or failures, or seems to be curated to craft a narrative.	____
NOTES:				

Engineering Notebook Rubric (Page 2 of 2)

ENGINEERING NOTEBOOK FORMAT AND CONTENT	EXPERT (4-5 POINTS)	PROFICIENT (2-3 POINTS)	EMERGING (0-1 POINTS)	POINTS
INDEPENDENT INQUIRY	Team shows evidence of independent inquiry from the beginning stages of their design process. Notebook documents whether the implemented ideas have their origin with students on the team, or if students found inspiration elsewhere.	Team shows evidence of independent inquiry for some elements of their design process. Ideas and information from outside the team are documented.	Team shows little to no evidence of independent inquiry in their design process. Ideas from outside the team are not properly credited. Ideas or designs appear with no evidence of process.	____
USABILITY & COMPLETENESS	Records the entire design and development process with enough clarity and detail that the reader could recreate the project's history. Notebook has recent entries that align with the robot the team has brought to the event.	Records the design and development process completely but lacks sufficient detail. Documentation is inconsistent with possible gaps.	Lacks sufficient detail to understand the design process. Notebook has large gaps in time, or does not align with the robot the team has brought to the event.	____
ORIGINALITY & QUALITY	Cited content is kept to relevant information and all cited content longer than a paragraph is located in appendices to the Engineering Notebook. Information originating from outside the team is always properly cited in the notebook with the source and date accessed. Most or all Engineering Notebook content is original to the submitting team members.	Cited content is mostly kept to relevant information. Information originating from outside the team is properly credited. Cited content is paraphrased with some original content describing the team's design process.	Cited content is excessive and/or is not kept in appendices, or non-original content is not cited. Plagiarised content should be noted to the JA and through the REC Foundation Code of Conduct process.	____
ORGANIZATION / READABILITY	Entries are logged in a table of contents. There is an overall organization to the document that makes it easy to reference, such as color coded entries, tabs for key sections, or other markers. Notebook contains little to no extraneous content that does not further the engineering design process.	Entries are logged in a table of contents. There is some organization to the document to enhance readability. Notebook contains some extraneous content that does not further the design process, but it does not severely impact readability.	Entries are not logged in a table of contents, and there is little adherence to a system of organization. Excessive extraneous content makes the notebook difficult to read, use, or understand.	____
RECORD OF TEAM & PROJECT MANAGEMENT	Provides a complete record of team and project assignments; contains 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 has evidence that documentation was done in sequence with the design process. Entries include dates and names of contributing students.	Records most of the information listed at the left. Level of detail is inconsistent, or some aspects are missing. There are significant gaps in the overall record of the design process. Notebook may have inconsistent evidence of dates of entries and student contributions.	Does not record the design process in a way that shows team progress. There are significant gaps or missing information for key design aspects. Notebook has little evidence of dates of entries and student contributions.	____
INNOVATE AWARD NOTES (optional):				**TOTAL POINTS** ____

All judging materials are strictly confidential. They are not shared beyond the Judges and Judge Advisor and shall be destroyed at the end of the event.

Team Interview Rubric

Team # _____ **Grade Level ☐ ES | ☐ MS | ☐ HS | ☐ University Judge Name** _____

Directions: Determine a point value that best characterizes the content of the Team Interview for that criterion.

CRITERIA	PROFICIENCY LEVEL			
	EXPERT (4-5 POINTS)	**PROFICIENT** (2-3 POINTS)	**EMERGING** (0-1 POINTS)	**POINTS**
ENGINEERING DESIGN PROCESS *All Awards*	Team shows evidence of independent inquiry from the beginning stages of their design process. This includes brainstorming, testing, and exploring alternative solutions.	Team shows evidence of independent inquiry for some elements of their design process.	Team shows little to no evidence of independent inquiry in their design process.	____
GAME STRATEGY *Design, Innovate, Create, Amaze*	Team can fully explain their entire game strategy including game analysis.	Team can explain their current strategy with limited evidence of game analysis.	Team did not explain game strategy, or strategy is not student-directed.	____
ROBOT DESIGN *Design, Innovate, Build Create, Amaze*	Team can fully explain the evolution of their robot design to the current design.	Team can provide a limited description of why the current robot design was chosen, but shows limited evolution.	Team did not explain robot design, or design is not student-directed.	____
ROBOT BUILD *Innovate, Build, Create, Amaze*	Team can fully explain their robot construction. Ownership of the robot build is evident.	Team can describe why the current robot design was chosen, but with limited explanation.	Team did not explain robot build, or build is not student-directed.	____
ROBOT PROGRAMMING *Design, Innovate, Think, Amaze*	Team can fully explain the evolution of their programming.	Team can describe how the current programs work, but with limited evolution.	Team did not explain programming, or programming is not student-directed.	____
CREATIVITY / ORIGINALITY *Innovate, Create*	Team can describe creative aspect(s) of their robot with clarity and detail.	Team can describe a creative solution but the answer lacks detail.	Team has difficulty describing a creative solution or gives minimal response.	____
TEAM AND PROJECT MANAGEMENT *All Awards*	Team can explain how team progress was tracked against an overall project timeline. Team can explain management of material and personnel resources.	Team can explain how team progress was monitored, and some degree of management of material and personnel resources.	Team cannot explain how team progress was monitored or how resources were managed.	____
TEAMWORK, COMMUNICATION, PROFESSIONALISM *All Awards*	Most or all team members contribute to explanations of the design process, game strategy, and other work done by the team.	Some team members contribute to explanations of the design process, game strategy, and other work done by the team	Few team members contribute to explanations of the design process, game strategy, and other work done by the team.	
RESPECT, COURTESY, POSITIVITY *All Awards*	Team consistently interacts respectfully, courteously, and positively in their interview.	Team interactions show signs of respect and courtesy, but there is room for improvement.	Team interactions lack respectful and courteous behavior.	____
SPECIAL ATTRIBUTES & OVERALL IMPRESSIONS *Judges, Inspire*	Does the team have any special attributes, accomplishments, or exemplary effort in overcoming challenges at this event? Did anything stand out about this team in their interview? Please describe:			**TOTAL POINTS** ____

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Team Interview Notes

Directions: Use this sheet to take notes during each Team Interview. As a Judge group, ask open ended questions to teams that give insight into each of the criteria below.

Team Number _____ **Judge Name** _____

CRITERIA	CRITERIA EXPLANATION	JUDGE'S NOTES
ENGINEERING DESIGN PROCESS *All Awards*	How well does the team explain the process they used to create their robot design?	
GAME STRATEGY *Design, Innovate, Create, Amaze*	Can the students explain their game strategy, how they came up with it, & how well it fits with their robot design?	
ROBOT DESIGN *Design, Innovate, Create, Amaze, Build*	Do students demonstrate ownership of the design process? Is the robot well designed to accomplish their goals?	
ROBOT BUILD *Innovate, Build, Create, Amaze*	Do students demonstrate ownership of the build process? Is the robot well-built and robust?	
CREATIVITY / ORIGINALITY *Innovate / Create*	Does team describe creative aspect(s) of their robot with clarity and detail?	
ROBOT PROGRAMMING *Think*	Do students demonstrate ownership of the robot's programming? How well can they explain their code?	
TEAM & PROJECT MANAGEMENT *All Awards*	Can students explain how they managed their time, resources, and people to work effectively?	
TEAMWORK, COMMUNICATION, PROFESSIONALISM *All Awards*	Do all team members share in the work of being a successful team? Does everyone contribute in some way?	
RESPECT, COURTESY, POSITIVITY *All Awards*	Did students answer respectfully and courteously?	
SPECIAL ATTRIBUTES *Judges, Inspire*	Does the team have any special attributes or accomplishments?	

All judging materials are strictly confidential. They are not shared beyond the Judges and Judge Advisor and shall be destroyed at the end of the event.

Excellence Award Criteria Checklist

Please review the Excellence Award criteria in full. This checklist is a summary of the overall Excellence Award description**. Teams must satisfy all requirements to be eligible for the Excellence Award.** Teams that do not run skills are given a score of zero for ranking purposes.

- ☐ Team is in the top 40% of overall Skills Rankings*
- ☐ Team is the top 40% of Autonomous Coding Skills Rankings* with a score above zero
- ☐ Team is in the top 40% of Qualification Rankings*
- ☐ Team has exhibited a high-quality Team Interview
- ☐ Team has submitted a notebook that is ranked at or near the top of Engineering Notebook rankings and is a strong candidate for the Design Award
- ☐ Both the Team Interview and Engineering Notebook demonstrate independent inquiry from the beginning stages of their design process through execution
- ☐ Team has been nominated or ranked for multiple other Judged Awards at the event
- ☐ Team exhibits positive and student-centered team conduct, good sportsmanship, and professionalism

*For events with a single Excellence Award, percentages are based on the number of teams at the event. **For blended grade level events with two grade specific Excellence Awards**, percentages should be based on the teams **in each grade level** for each award.

Excellence Award Criteria Checklist

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- ☐ Team is in the top 40% of overall Skills Rankings*
- ☐ Team is the top 40% of Autonomous Coding Skills Rankings* with a score above zero
- ☐ Team is in the top 40% of Qualification Rankings*
- ☐ Team has exhibited a high-quality Team Interview
- ☐ Team has submitted a notebook that is ranked at or near the top of Engineering Notebook rankings and is a strong candidate for the Design Award
- ☐ Both the Team Interview and Engineering Notebook demonstrate independent inquiry from the beginning stages of their design process through execution
- ☐ Team has been nominated or ranked for multiple other Judged Awards at the event
- ☐ Team exhibits positive and student-centered team conduct, good sportsmanship, and professionalism

*For events with a single Excellence Award, percentages are based on the number of teams at the event. **For blended grade level events with two grade specific Excellence Awards**, percentages should be based on the teams **in each grade level** for each award.

Script for Award Not Given Out

If no team fulfills the criteria for an award and an award is not given out, it should be addressed prior to any other awards being given out to avoid disruptions to the rest of the award ceremony.

“The awards offered at qualifying events are based on specific criteria, which may include such things as having an engineering notebook, attaining certain performance rankings, or other requirements as described in the Guide to Judging. It has been determined that at this event, no team fulfilled all the required criteria for the _____ Award.

“While it is disappointing not to be able to recognize an award winner, we encourage teams to continue their hard work and dedication to their program. For future reference, all award criteria and descriptions can be found in the REC Foundation Guide to Judging.”

Conclude with a transition, such as:

“...Now let’s give out the following awards… _____”

or

“...Now let’s get back to matches… _____”

or

“...Now let’s get back to our Emcee…_____”

Date: _____ Event Name: _____

Innovate Award Submission Information Form

Instructions for team: Please fill out all information, printing clearly. This form should be included either behind the front cover, or in a clearly marked section in your Engineering Notebook. Teams may only submit **one** aspect of their design to be considered for this award at each event. Submission of multiple aspects will nullify the team's consideration for this award.

Full Team Number: _____

Brief description of the novel aspect of the team's design:

_____

_____

_____

_____

_____

_____

_____

Identify the page numbers and/or the section(s) where documentation of the development of this aspect can be found:

_____

_____

_____

_____

_____

Explain why your submission is unique from other approaches to the problem it solves or task it performs:

_____

_____

_____

_____

_____

_____

Judge Volunteer Check-in Sheet

Directions: Use this sheet to check in Judge volunteers. Record each Judge's name, email (for follow up contact), cell phone number (to reach Judges during the event), and team affiliation (to avoid potential conflicts of interest). Print additional sheets for larger events.

NAME	EMAIL *Please provide your email for follow-up contact*	PHONE *Please provide a number where you can be reached during this event*	TEAM AFFILIATION *Indicate any team(s) with which you have an affiliation*

Judge Volunteer Interest Form

If you are interested in learning about in person or remote Judging for the 2026 VEX Robotics World Championship or other volunteering opportunities with the REC Foundation, please visit this link.

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Volunteer Field Note to Judge Advisor

Match # (if applicable)	
Team Number	
Team Name	
Organization Name	

THIS NOTE IS FROM:	**Name:** _____ **Volunteer Position:** _____
Check one below:	Please provide either positive or negative feedback about a specific team for the Judges to consider in their deliberations for awards. This form should be filled out in its entirety and signed by the Head Referee, Division Manager, or Event Partner at the bottom of the sheet. Including details in your notes is helpful for the Judges' consideration.
☐ **POSITIVE**	
☐ **NEGATIVE**	

Head Referee / Division Manager / Event Partner Print and sign full name:_____	**Date:** _____ **Time:** _____

Judging Single-Page Reference Sheet

DESIGN AWARD

- Team is at or near the top of Engineering Notebook Rubric rankings
- Team exhibits a high-quality team interview
- Team demonstrates effective management of time, personnel, and resources
- Team Interview demonstrates their ability to explain their robot design and game strategy

EXCELLENCE AWARD

- Meets all **Design Award** criteria, plus:
- Team is ranked in the top 40% of teams in Qualification Rankings, overall Robot Skills Rankings, and Autonomous Coding Skills Challenge Rankings
- Team is a candidate in consideration for other Judged Awards

INNOVATE AWARD

- Recognizes an effective and well-documented design process in some aspect of the team's work
- Teams will identify a section or pages in their notebook where this aspect can be found so judges can follow its development
- The team who earns the Innovate Award should be among the top contenders for the Design Award

JUDGES AWARD

- Earned by a team that distinguishes themselves in some way that may not fit in other award categories
- Team may display special attributes, exemplary effort, and perseverance at the event
- Team may have overcome an obstacle or challenge to achieve a goal or special accomplishment

THINK AWARD

- Recognizes the most effective and consistent use of coding techniques and programming design solutions to solve the game challenge

AMAZE AWARD

- Recognizes a consistently high-performing and competitive robot

BUILD AWARD

- Recognizes a well constructed robot that is built with high attention to detail to hold up to the rigors of competition

CREATE AWARD

- Recognizes a creative engineering design solution to one or more of the challenges of the competition

ENERGY AWARD

- Recognizes outstanding enthusiasm and excitement at the event

INSPIRE AWARD

- Recognizes passion for the competition and positivity at the event

SPORTSMANSHIP AWARD

- Recognizes a high degree of good sportsmanship, helpfulness, and positive attitude both on and off the competition field

Not all awards or award criteria may be listed.

For full award descriptions, please refer to the **Guide to Judging.** Awards are not in any order of precedence.

INTERVIEW CHECKLIST

- □ Record team number on interview notes.
- □ Keep track of time – your Judge Advisor will give guidance about the event schedule.
- □ Take notes on each team.
- □ Be mindful of your environment. Do not leave notes unattended or discuss teams where others could hear.
- □ Wish team success and thank them for the interview.
- □ Away from the team, briefly discuss interview with Judge group & fill out the Team Interview Notes sheet.

INTERVIEW TIPS

- □ Ask teams if they have an upcoming match before you start your interview. If yes, interview them later. Matches will not be delayed or replayed if teams miss the match due to an interview.
- □ Ask if all team members are present before starting the interview.
- □ Take a picture of the team's robot, and be sure the team number is shown (optional).
- □ If you have trouble finding a team, check the match schedule and find them as they leave a match.

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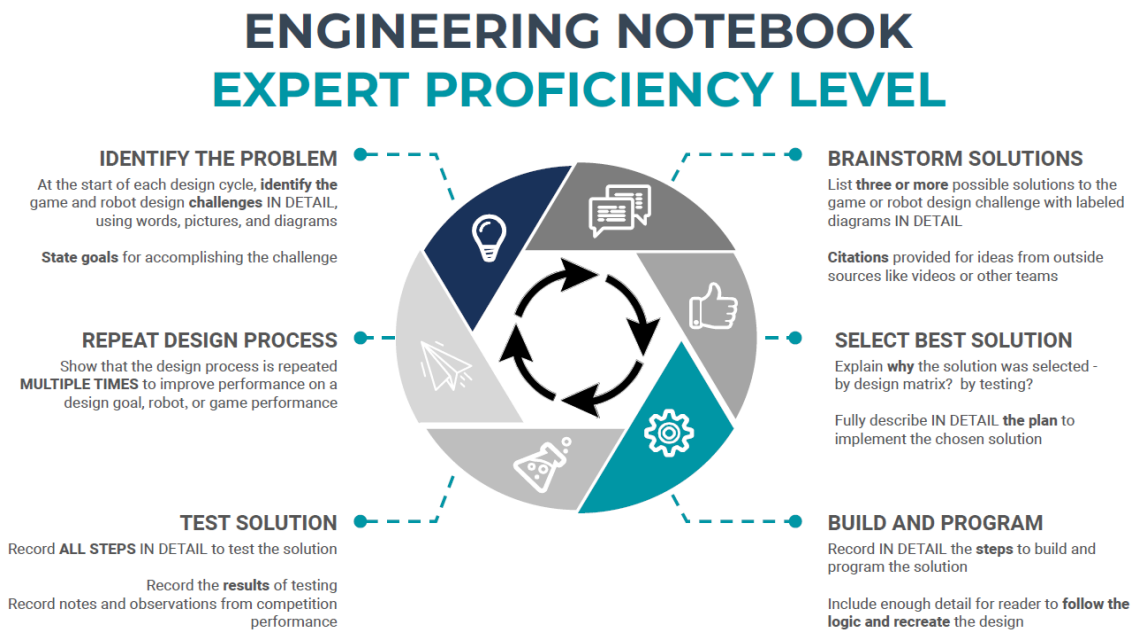
Single-Page Outline of the Judging Process

Note: Please see the Guide to Judging for a full description of the judging process and all award descriptions and criteria.

The judging process at events consists of two main parts. The first is Engineering Notebook judging, in which judges evaluate teams' engineering notebooks using the Engineering Notebook Rubric. Notebooks are first sorted on a pass/fail basis to determine if they are "Fully Developed," which means they demonstrate a complete iteration of the Engineering Design Process, as shown below.



Some events may have dedicated Judges for this task, others will share that role with interview Judges, which is the second main component of the judging process. For interviews, Judges are arranged into groups of two or more by the Judge Advisor and assigned to interview a set of teams (with which they do not have a connection that would be considered a conflict of interest). Judges ask teams open ended questions about their Engineering Design Process and robot, and evaluate interviews using the Team Interview Rubric. Judges should also be on the lookout for teams' behavior—both positive and negative.

Teams are expected to demonstrate good sportsmanship, courtesy, and respect for other teams, volunteers, and event staff, and to follow the REC Foundation Student-Centered Policy and Code of Conduct. All aspects of a team's work are expected to represent the skill level of the students on the team.

After all teams have been interviewed, each Judge group identifies candidates from the teams they have interviewed for the awards that are being offered at the event. Those teams are then interviewed by different Judges to create a ranked list of the top candidates through a deliberation discussion that is facilitated by the Judge Advisor. Final award winners are recognized at the conclusion of the event with an awards ceremony. Some awards may qualify teams to progress to another level of competition, such as state, regional, or world championships.

Sportsmanship Award Nomination Form

Judge Advisor: Please consult with the volunteers at the event for this award. It is advisable to have **at least 3 nominees.** Please collect this form at the conclusion of Qualification Matches.

Award Description: The **Sportsmanship Award** is presented to a team that has earned the respect and admiration of the volunteers at the event. This team is a model for all to follow because team members interact with everyone in a positive, respectful manner in the spirit of friendly competition and cooperation. This award is judged during the event by referees and volunteers.

Please rank the **top** teams that you have observed to display the best **Sportsmanship**:

Please Write Neatly!

Rank 1 – Team Number: _____

Rank 2 – Team Number: _____

Rank 3 – Team Number: _____

Rank 4 – Team Number: _____

Rank 5 – Team Number: _____

Energy Award Nomination Form

Judge Advisor: Please consult with the volunteers at the event for this award. It is advisable to have **at least 3 nominees.** Please collect this form at the conclusion of Qualification Matches.

Award Description: The **Energy Award** is based on team enthusiasm displayed at the event. The winning team will demonstrate 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.

Please rank the **top** teams that you have observed to display the most **Energy**:

Please Write Neatly!

Rank 1 – Team Number: _____

Rank 2 – Team Number: _____

Rank 3 – Team Number: _____

Rank 4 – Team Number: _____

Rank 5 – Team Number: _____

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Team Interview Tips and Sample Questions

Best Practices

- Ask if the team has a few minutes for the interview. If the team has an upcoming match that may interfere with the interview, tell them you will come back at a better time. **Do not** keep the students from heading to a match and make them late!
- Ask if all team members are present. Try to include all team members in the interview.
- Ask a quick “icebreaker” question such as, “That’s a really great team logo! Who designed it?” or “How is your team doing so far today?”
- Being a Judge gives you a unique opportunity to impact students through positive reinforcement. Just a few words of encouragement can make their day.
- Try to avoid “yes or no” questions. Encourage teams to elaborate on their answers.
- Be prepared to rephrase your questions. Be mindful of differences in communication styles.
- Be mindful of students who do not speak the language that you are using as their first language.
- Be aware of different age levels. Approach students in an age-appropriate way, especially when talking to younger students.
- Be attentive to students. Refrain from side conversations / phone use during interviews.
- It is acceptable to take a picture of each robot so the license plate is visible. This will help you identify teams and robots later during deliberations.
- If you are having trouble finding a team, wait for them at the field for their next match.

Sample Questions

- Is this a good time for an interview? Are all of your team members here?
- What does your robot do, and how does it score points?
- How did you develop this robot design?
- Which team members built the robot?
- What part of your robot are you most proud of? Why?
- Were there any other robots that inspired your robot design? How?
- What changes did you make to improve your design during the season?
- What was the most difficult challenge your team has overcome so far?
- Did you use any sensors? What are they used for? How do they operate in your autonomous mode? How do they operate in your driver-controlled mode?
- What problems did you have in working on your robot? How did your team solve them?
- If you had one more week to work on your robot, how would you improve it?
- Has your game strategy been effective? How and why?
- Tell us about your robot’s programming. Who was the primary programmer?
- What were the challenges of this year’s game that you considered before designing your robot? How did you design your robot to meet those challenges?
- What are your goals for Driver Skills and Autonomous Coding Skills scores? What are your average scores?

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Award Descriptions for Judges' Room

The following pages contain award descriptions and key criteria for each award and are useful in guiding the Judges' deliberations.

Event Partners / Judge Advisors may wish to print these descriptions and then laminate them or place them in plastic sheet protectors for use at multiple events.

Not all events will give out all awards. Each Judge Advisor should consult with their Event Partner to determine which awards will be presented at an event.

EXCELLENCE AWARD

KEY CRITERIA

- Be at or near the top of all Engineering Notebook rankings
- Both the Team Interview and Engineering Notebook demonstrate independent inquiry from the beginning stages of their design process through execution
- Be a candidate in consideration for other Judged Awards
- Demonstrate a student-centered ethos
- Exhibit positive team conduct, good sportsmanship, and professionalism
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design
- Be ranked in the top 40%* of qualification rankings at the conclusion of Qualification Matches
- Be ranked in the top 40%* of teams at the conclusion of the Robot Skills Challenge matches
- Be ranked in the top 40%* of Autonomous Coding Skills Challenge scores at the conclusion of the Robot Skills Challenge

*This may include all teams in the event, or just the grade level, depending on how many teams are at the event. Please refer to the REC Foundation Qualifying Criteria and Guide to Judging for specific information.

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DESIGN AWARD

KEY CRITERIA

- Be at or near the top of Engineering Notebook Rubric rankings
- Engineering Notebook demonstrates clear, complete, and organized record of an iterative Engineering Design Process
- Both the Team Interview and Engineering Notebook demonstrate independent inquiry from the beginning stages of their design process through execution
- Team demonstrates effective management of time, personnel, and resources
- Team Interview demonstrates their ability to explain their robot design and game strategy
- Team Interview demonstrates effective communication skills, teamwork, and professionalism.
- Engineering Notebook and Team Interview demonstrate a student-centered ethos
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design

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INNOVATE AWARD

KEY CRITERIA

- Teams identify in their notebook a specific section or specific pages covering the origin and development of a design element, strategy, or other attribute that is a key part of their team's robot design or gameplay
- This design element, strategy, or other attribute is in use and is unique or uncommon among Innovate Award submissions at the event
- This design element, strategy, or other attribute is well-documented from initial conception through execution
- Engineering Notebook demonstrates a clear, complete, and organized record of the Engineering Design Process
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design
- Both the Team Interview and Engineering Notebook demonstrate independent inquiry from the beginning stages of their design process through execution
- Team demonstrates effective management of time, personnel, and resources
- Team Interview demonstrates their ability to explain their robot design and game strategy
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos

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JUDGES AWARD

KEY CRITERIA

- Team displays special attributes, exemplary effort, or perseverance at the event
- Team stands out to Judge volunteers as being deserving of special recognition
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos

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THINK AWARD

KEY CRITERIA

- Participation in the Autonomous Coding Skills Challenge, with a score greater than zero
- Programs are cleanly written, well commented, and easy to follow
- Team clearly explains the programming strategy used to solve the game challenge
- Team clearly explains their programming management process / version control
- Students understand and explain how they worked together to develop their robot programming
- Programming is effective at solving the game challenges for both Qualification Matches and Autonomous Coding Skills Challenge matches
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design

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AMAZE AWARD

KEY CRITERIA

- Robot reliably contributes to high-scoring matches with their alliance partners
- Robot performs at a high level in Driving Skills and Autonomous Coding Skills at the event
- Programming is effective at solving the game challenges for both Qualification Matches and Skills Challenge matches
- Students understand and explain how they worked together to develop their robot design to consistently execute an effective game strategy
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design

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BUILD AWARD

KEY CRITERIA

- Robot construction is durable and robust
- Robot is reliable on the field and withstands the rigors of competition
- Robot is designed with attention to safety and detail
- Students understand and explain how they worked together to develop their robot design
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design

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CREATE AWARD

KEY CRITERIA

- Team demonstrates a creative approach to accomplish game objectives
- 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 design and game strategy
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos
- The Engineering Notebook is consistent with the qualities demonstrated in the Team Interview and robot design

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INSPIRE AWARD

KEY CRITERIA

- Team exhibits passion and positive attitude at the event
- Team exhibits integrity and goodwill toward other teams, coaches, and event staff
- Team overcomes an obstacle or challenge, or achieves a goal or special accomplishment at the event
- Team Interview demonstrates effective communication skills, teamwork, professionalism, and a student-centered ethos

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SPORTSMANSHIP AWARD

KEY CRITERIA

- Team is courteous, helpful, and respectful to everyone at the event, on and off the field
- Team interacts with others in the spirit of friendly competition and cooperation
- Team acts with honesty and integrity, enriching the event experience for all

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ENERGY AWARD

KEY CRITERIA

- Team maintains a high level of enthusiasm and excitement throughout the event
- Team exhibits a passion for the robotics competition that enriches the event experience for all