
2022
REC FOUNDATION
COACH
SUMMIT
THE JUDGING PROCESS - DEMYSTIFIED!
Carol Kujawa and Ben Mitchell

WELCOME

THE JUDGING PROCESS DEMYSTIFIED

Carol Kujawa and Ben Mitchell

2022 REC FOUNDATION COACH SUMMIT

BEFORE WE BEGIN

BEST PRACTICES

This is for YOU - the Coaches. Please ask questions when you have them.

Utilize the Chat
Share Pro Tips

Take Breaks

Ask Questions in the Chat

Be Respectful

JUDGING DEMYSTIFIED

TAKEAWAYS FOR COACHES

Understanding of the Judging Process

Coach-focused tour of the updated Judge Guide

THE IMPORTANCE OF JUDGING

WHY DO JUDGING?

The Judging Process gives students an opportunity to:

- practice written communication skills through the Engineering Notebook
- practice verbal communication skills through the Team Interview
- demonstrate the values of the REC Foundation Code of Conduct and Student-Centered policies

Judging recognizes and celebrates what teams have learned and the hard work they have put into the robotics competition as an educational activity

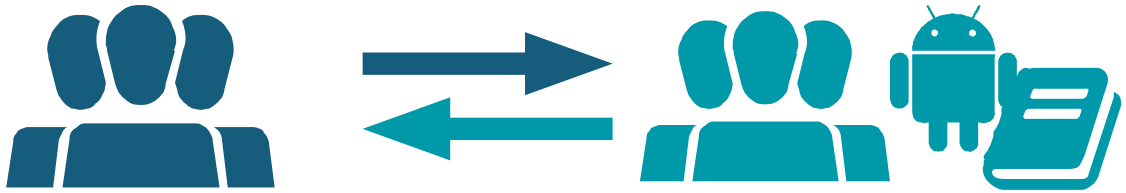
Judged awards can qualify teams to higher levels of competition

THE ETHOS OF JUDGING

CORE PRINCIPLES FOR JUDGES AND TEAMS

JUDGES

- Confidentiality
- Student-Centered Teams
- Team Ethics and Conduct
- Youth Protection
- Impartiality
- Consistency
- Inclusion
- Balance
- Integrity
- Qualitative Judgement



A Conversation between Students and Judges
Not a Prepared Presentation

Engineering Notebook Is by the Team, for the Team
Not a presentation document for Judges

To Win a Judged Award
There Is No Magic Formula or Template

TEAMS

- Identify the Problem
- Brainstorm Solutions
- Select Best Solution
- Build Prototype
- Test Solution
- Repeat the Process
- Student Centered
- Robot Build
- Robot Programming
- Game Strategies
- Teamwork
- Professionalism
- Communication
- Project Management

QUICK JUDGING OVERVIEW

THE JUDGE VOLUNTEER ROLES

EVENT PARTNER

Overall responsibility for event success

Recruits Judge Advisor who can effectively manage the judging process, and sufficient Judges for the number of teams at the event

Provides space and supplies for deliberations

JUDGE

Evaluates teams to determine eligibility for judged awards

Conducts one or more activities at the event, as assigned by the Judge Advisor:

- Evaluate Engineering Notebooks
- Interview teams
- Observe teams
- Present awards

All Judges work together to deliberate award winners

JUDGE ADVISOR

Organizes and oversees the overall judging process at an event

Prepares a judging schedule based on event size and agenda

Manages conflicts of interest of Judge volunteers with teams at the event

Facilitates deliberations and delivers final award winners to Event Partner

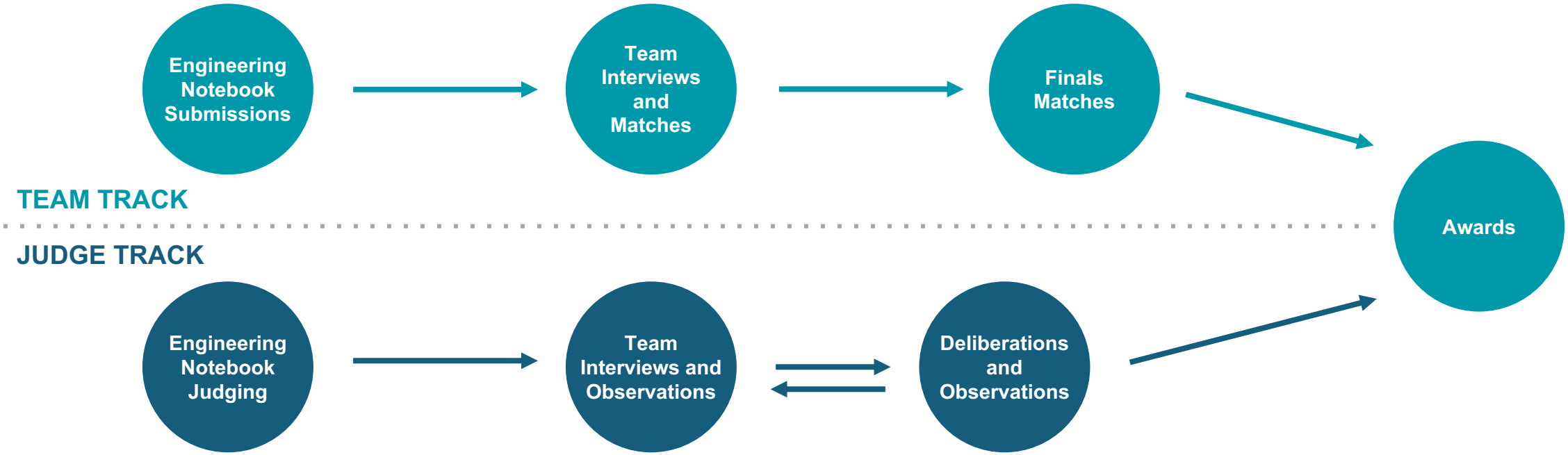
QUICK JUDGING OVERVIEW

MECHANICS OF THE JUDGING PROCESS

- Event Partner and Judge Advisor develop judging schedule to match event agenda
- Judges review and rank Engineering Notebooks according to overall quality
- In order to interview every team, Judge volunteers are assigned to subsets of teams to interview
- Each Judge group selects top candidates for each award from their subset of teams
- Small Judge groups come together to deliberate and nominate the final candidates for each judged award
- There may be additional interviews and observations of finalist teams
- At the end of Qualifying Matches, performance data is factored in for some awards
- Awards are usually presented at the conclusion of the event during or after finals

QUICK JUDGING OVERVIEW

A TEAM-CENTRIC VIEW OF THE JUDGING PROCESS



2022-2023 JUDGE GUIDE
A CURATED TOUR

2022 REC FOUNDATION COACH SUMMIT

2022-2023
JUDGE GUIDE

THE OBJECTIVE

To provide a resource that helps make the Judging Process

- **easier to understand**
- **more consistent** from event-to-event
- **easier to accomplish** with improved tools and instructions

2022-2023 JUDGE GUIDE

WHAT IS UNCHANGED

- Overall judging process
- Ethos of the judging process
- Judge volunteer roles
- All teams at an event should **have equal opportunity** to be judged
- Submission of Digital Engineering Notebooks
- Notebook requirements for certain awards
- Only official rubrics and award descriptions are to be used

2022-2023 JUDGE GUIDE

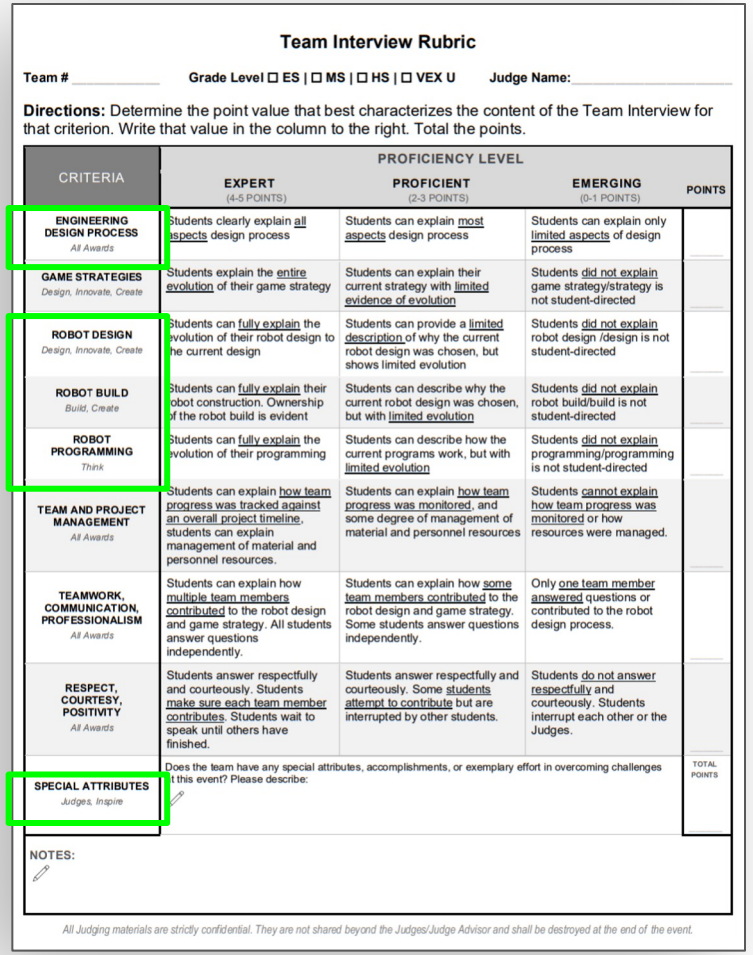
NEW AND UPDATED!

- Verbiage changes to Award Criteria & Descriptions
- Clarified Descriptions of judging processes, including step-by-step descriptions
- Team Interview and Engineering Notebook Rubrics are more closely aligned with Award Criteria
- New tools added to aid Judges, including a note-taking form, a one-page reference sheet, and award nominee ranking sheets
- Remote Judging explained in its own section

RUBRIC: TEAM INTERVIEW

UPDATED AND IMPROVED

- Removed reference to the Engineering Notebook as part of the Team Interview
- Added criteria to represent **all** Judged Awards
- Award names identify which criteria are linked to which awards
- Added criterion for team attributes that may not ‘fit’ other award criteria
- Reworded all criteria descriptions for ease of use by judges and for teams to prepare
- Added space for notes



Team Interview Rubric

Team # _____ **Grade Level** ☐ **ES** | ☐ **MS** | ☐ **HS** | ☐ **VEX U** **Judge Name:** _____

Directions: Determine the point value that best characterizes the content of the Team Interview for that criterion. Write that value in the column to the right. Total the points.

CRITERIA	PROFICIENCY LEVEL EXPERT (4-5 POINTS)	PROFICIENT (2-3 POINTS)	EMERGING (0-1 POINTS)	POINTS
ENGINEERING DESIGN PROCESS *All Awards*	Students clearly explain all aspects design process	Students can explain most aspects design process	Students can explain only limited aspects of design process	
GAME STRATEGIES *Design, Innovate, Create*	Students explain the entire evolution of their game strategy	Students can explain their current strategy with limited evidence of evolution	Students did not explain game strategy/strategy is not student-directed	
ROBOT DESIGN *Design, Innovate, Create*	Students can fully explain the evolution of their robot design to the current design	Students can provide a limited description of why the current robot design was chosen, but shows limited evolution	Students did not explain robot design /design is not student-directed	
ROBOT BUILD *Build, Create*	Students can fully explain their robot construction. Ownership of the robot build is evident	Students can describe why the current robot design was chosen, but with limited evolution	Students did not explain robot build/build is not student-directed	
ROBOT PROGRAMMING *Think*	Students can fully explain the evolution of their programming	Students can describe how the current programs work, but with limited evolution	Students did not explain programming/programming is not student-directed	
TEAM AND PROJECT MANAGEMENT *All Awards*	Students can explain how team progress was tracked against an overall project timeline, students can explain management of material and personnel resources.	Students can explain how team progress was monitored, and some degree of management of material and personnel resources	Students cannot explain how team progress was monitored or how resources were managed.	
TEAMWORK, COMMUNICATION, PROFESSIONALISM *All Awards*	Students can explain how multiple team members contributed to the robot design and game strategy. All students answer questions independently.	Students can explain how some team members contributed to the robot design and game strategy. Some students answer questions independently.	Only one team member answered questions or contributed to the robot design process.	
RESPECT, COURTESY, POSITIVITY *All Awards*	Students answer respectfully and courteously. Students make sure each team member contributes. Students wait to speak until others have finished.	Students answer respectfully and courteously. Some students attempt to contribute but are interrupted by other students.	Students do not answer respectfully and courteously. Students interrupt each other or the Judges.	
SPECIAL ATTRIBUTES *Judges, Inspire*	Does the team have any special attributes, accomplishments, or exemplary effort in overcoming challenges at this event? Please describe:			TOTAL POINTS

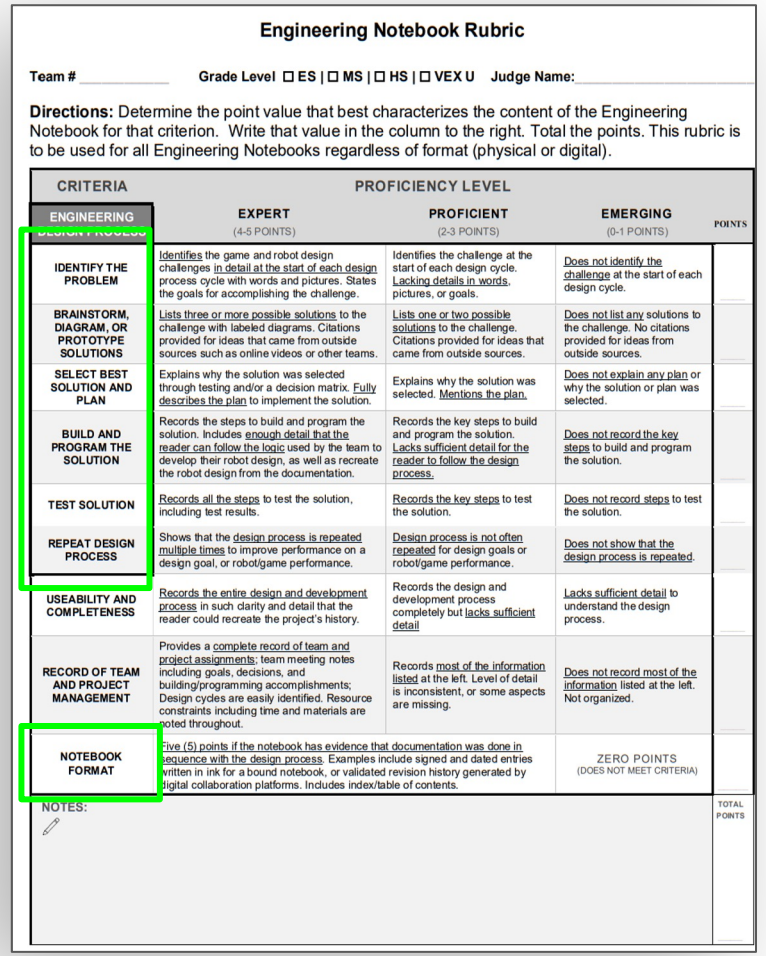
NOTES:

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

RUBRIC: ENGINEERING NOTEBOOK

UPDATED AND IMPROVED

- Highlighted the **Engineering Design Process** Criteria in criteria list
- Teams earn 5 points for evidence that Notebook creation is contemporaneous with the design process
- Format-neutral verbiage replaces previous 5-point "Bonus" for a bound notebook that put digital notebooks at a disadvantage
- Cleaner formatting and more instructive language for ease-of-use by judges and to help teams prepare



Engineering Notebook Rubric

Team # _____ **Grade Level** ☐ ES | ☐ MS | ☐ HS | ☐ VEX U **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. Total the points. This rubric is to be used for all Engineering Notebooks regardless of format (physical or digital).

CRITERIA	PROFICIENCY LEVEL			
ENGINEERING DESIGN PROCESS	EXPERT (4-5 POINTS)	PROFICIENT (2-3 POINTS)	EMERGING (0-1 POINTS)	POINTS
IDENTIFY THE PROBLEM	Identifies the game and robot design challenges in detail at the start of each design process cycle with words and pictures. States the goals for accomplishing the challenge.	Identifies the challenge at the start of each design cycle. Lacking details in words, pictures, or goals.	Does not identify the challenge at the start of each design cycle.	
BRAINSTORM, DIAGRAM, OR PROTOTYPE SOLUTIONS	Lists three or more possible solutions to the challenge with labeled diagrams. Citations provided for ideas that came from outside sources such as online videos or other teams.	Lists one or two possible solutions to the challenge. Citations provided for ideas that came from outside sources.	Does not list any solutions to the challenge. No citations provided for ideas from outside sources.	
SELECT BEST SOLUTION AND PLAN	Explains why the solution was selected through testing and/or a decision matrix. Fully describes the plan to implement the solution.	Explains why the solution was selected. Mentions the plan.	Does not explain any plan or why the solution or plan was selected.	
BUILD AND PROGRAM THE SOLUTION	Records the steps to build and program the solution. Includes enough detail that the reader can follow the logic used by the team to develop their robot design, as well as recreate the robot design from the documentation.	Records the key steps to build and program the solution. Lacks sufficient detail for the reader to follow the design process.	Does not record the key steps to build and program the solution.	
TEST SOLUTION	Records all the steps to test the solution, including test results.	Records the key steps to test the solution.	Does not record steps to test the solution.	
REPEAT DESIGN PROCESS	Shows that the design process is repeated multiple times to improve performance on a design goal, or robot/game performance.	Design process is not often repeated for design goals or robot/game performance.	Does not show that the design process is repeated.	
USEABILITY AND COMPLETENESS	Records the entire design and development process in such clarity and detail that the reader could recreate the project's history.	Records the design and development process completely but lacks sufficient detail	Lacks sufficient detail to understand the design process.	
RECORD OF TEAM AND PROJECT MANAGEMENT	Provides a complete record of team and project assignments; team meeting notes including goals, decisions, and building/programming accomplishments; Design cycles are easily identified. Resource constraints including time and materials are noted throughout.	Records most of the information listed at the left. Level of detail is inconsistent, or some aspects are missing.	Does not record most of the information listed at the left. Not organized.	
NOTEBOOK FORMAT	Five (5) points if the notebook has evidence that documentation was done in sequence with the design process. Examples include signed and dated entries written in ink for a bound notebook, or validated revision history generated by digital collaboration platforms. Includes index/table of contents.		ZERO POINTS (DOES NOT MEET CRITERIA)	
NOTES:				TOTAL POINTS

AWARDS
NEED TO KNOW

"CAN MY TEAM . . .?"

Three Award Types

1. **Performance-based awards**
2. **Judged awards**
3. **Individual recognition awards**

At Each Event, Teams Can …

Earn Performance Awards

and a Judged award

Only one Judged award

At Multiple Events, Teams Can …

Earn any award

(even if won previously)

Qualify for Regional Championship

WHAT ARE THE JUDGED AWARDS?

THE REQUIRED AWARDS

DESIGN AWARD (Engineering Notebook Required)

Be at or near the **top of Engineering Notebook Rubric rankings**

Exhibit a **high-quality team interview**

Team demonstrates **effective management of time, talent, and resources**

Team interview demonstrates their ability to explain their **robot design and game strategy**

EXCELLENCE AWARD (Engineering Notebook Required)

All Design Award criteria, **plus**:

Be ranked in the **top 10 or top 30% of teams in Qualification Rankings**

Be ranked in the **top 5 or top 20% of teams in Robot Skills Rankings**

Be a candidate in consideration for other Judged Awards

JUDGES AWARD

Team displays **special attributes, exemplary effort, and perseverance at the event**

Team **overcomes an obstacle or challenge** and **achieves a goal or special accomplishment** at the event

Earned by a team that distinguishes themselves in some way that may not fit in other award categories

WHAT ARE THE JUDGED AWARDS?

OPTIONS FOR EVENTS

INNOVATE AWARD
(Engineering Notebook Required)

Recognizes an effective and **well documented design process**

The team who earns the Innovate Award should be among the **top contenders for the Design Award**

The submission of an Engineering Notebook is a requirement for the Innovate Award

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 constructed with high attention to detail to hold up to the **rigors of competition**

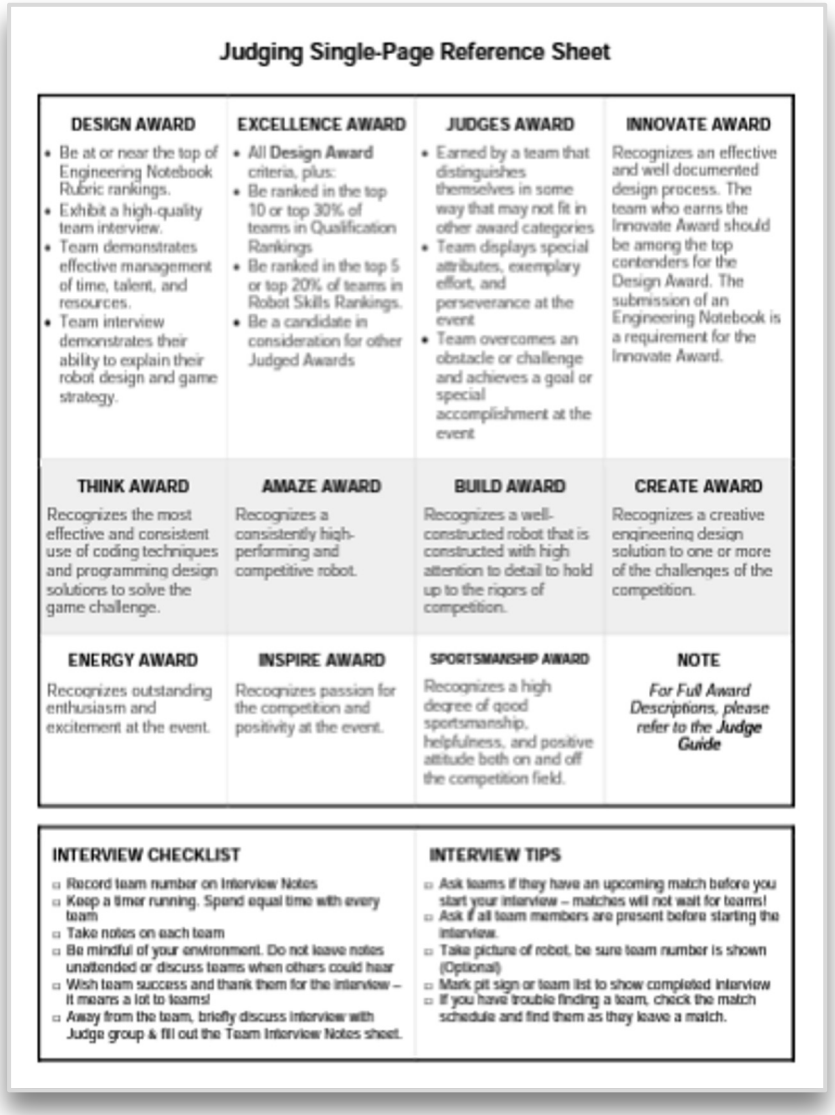
ENERGY AWARD
Recognizes outstanding **enthusiasm and excitement** at the event

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

CREATE AWARD
Recognizes a **creative engineering design solution** to one or more of the challenges of the competition

Note: Full Award Descriptions Are Found In the Judge Guide



Judging Single-Page Reference Sheet

DESIGN AWARD
- Be at or near the top of Engineering Notebook Rubric rankings.
- Exhibit a high-quality team interview.
- Team demonstrates effective management of time, talent, and resources.
- Team interview demonstrates their ability to explain their robot design and game strategy.

EXCELLENCE AWARD
- All **Design Award** criteria, plus:
- Be ranked in the top 10 or top 30% of teams in Qualification Rankings
- Be ranked in the top 5 or top 20% of teams in Robot Skills Rankings.
- Be a candidate in consideration for other Judged Awards

JUDGES AWARD
- Earned by a team that distinguishes themselves in some way that may not fit in other award categories
- Team displays special attributes, exemplary effort, and perseverance at the event
- Team overcomes an obstacle or challenge and achieves a goal or special accomplishment at the event

INNOVATE AWARD
Recognizes an effective and well documented design process. The team who earns the Innovate Award should be among the top contenders for the Design Award. The submission of an Engineering Notebook is a requirement for the Innovate Award.

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 constructed 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.

NOTE
For Full Award Descriptions, please refer to the Judge Guide

INTERVIEW CHECKLIST
- ▫ Record team number on Interview Notes
- ▫ Keep a timer running. Spend equal time with every team
- ▫ Take notes on each team
- ▫ Be mindful of your environment. Do not leave notes unattended or discuss teams when others could hear
- ▫ Wish team success and thank them for the interview – it means a lot to teams!
- ▫ 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 – matches will not wait for teams!
- ▫ Ask if all team members are present before starting the interview.
- ▫ Take picture of robot, be sure team number is shown (Optional)
- ▫ Mark pit sign or team list to show completed interview
- ▫ If you have trouble finding a team, check the match schedule and find them as they leave a match.

JUDGED AWARDS
ONE PAGE REFERENCE SHEET

ALL IN ONE PLACE!

Thumbnail **descriptions** of each Judged Award for quick reference and side-by-side comparison

Interview Checklist and Best-Practice **Interview Tips** facilitate consistency among interviews… **all on one page!!**

Left side: Judge Guide page 37

JUDGE GUIDE UPDATES

Updates

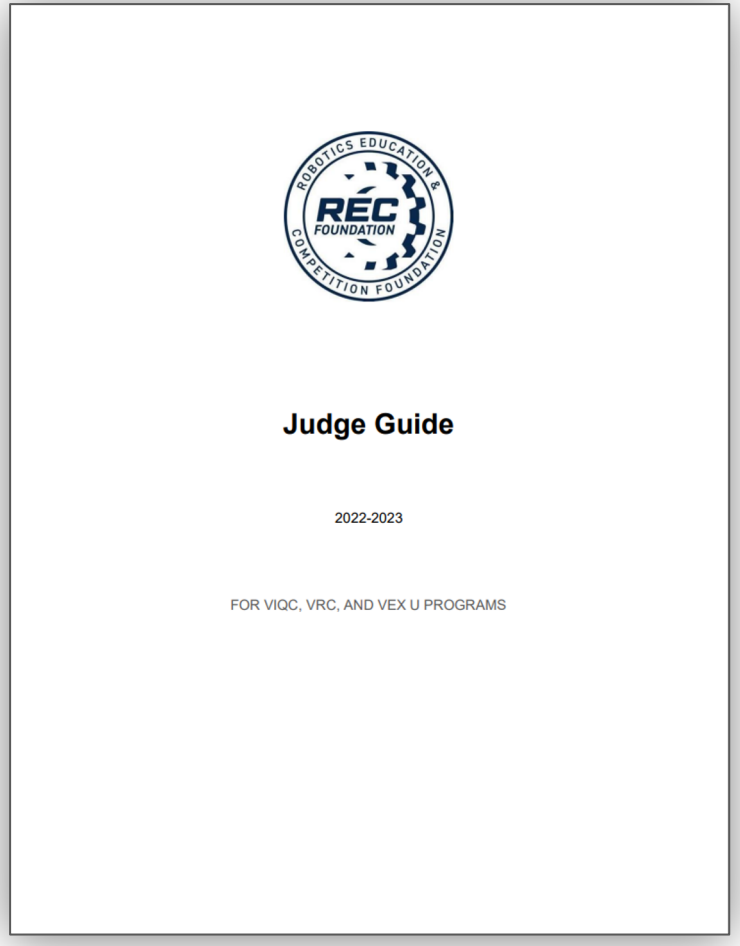
August 15 and December 15

Email

judging@roboticseducation.org

Official Judging Q & A

https://www.robotevents.com/judging/2022-2023/QA



THANK YOU

2022 REC FOUNDATION COACH SUMMIT