FIRST® Robotics Competition Award Workbook

At the event, teams will be selected to receive awards based on machine and team attributes. Judges will visit teams in the pit area to learn more about the team's efforts and to nominate teams for awards. This document summarizes award criteria and provides best practices for teams and judges to follow throughout the judging process.

Teams should review the Best Practices for *FIRST* Robotics Competition Judged Awards document for tips on interacting with judges.

Judges should be cognizant of the following as they conduct their interviews:

1. Judges should use the Technical Judging Tip Sheet in conjunction with these guidelines to select their candidates for awards.
2. Judges should make a concerted effort to conduct the interview while the robot and spokespersons are in the team's pit.
3. Judges are encouraged to take a lot of detailed notes (including Team #). The details are helpful when writing award scripts.
4. Interview time is limited; make the most of the time you have and strive to stay on schedule.
5. Avoid providing feedback to team members indicating what the team might be lacking or how they might be able to improve upon their performance or interaction with the judges. As a judge, your words matter, and even the most constructive and well-meaning input can be perceived negatively.
6. Have fun, praise the kids for their hard work, and thank the mentors for their time and support!

Awards Based on Machine Attributes

Award	Description	Guidelines
Autonomous Award	Celebrates the team whose machine has demonstrated consistent, reliable, high-performance robot operation during autonomous (i.e. non-operated guided) actions during match play. Evaluation is based on the robot's ability to sense its surroundings, position itself or onboard mechanisms appropriately, and execute tasks.	■ A team must be able to describe: ○ How the robot perceives its surroundings, navigates on the field or positions onboard mechanisms and then executes tasks. ○ The factors the teams considered that could interfere with success during autonomously managed actions. ○ The design, development, and testing that was done for the robot's autonomously managed actions. ■ Consistent and reliable operation is weighted more heavily than the ability to score maximum points during any specific autonomously managed actions. ■ Consideration may be given to both autonomous actions during the first 15 seconds of the match and during tele-operated mode.
Creativity Award *sponsored by Rockwell Automation*	Celebrates a creative robotic component, concept, or attribute that enhances strategy of play that was intentionally designed and not discovered.	■ A team must be able to describe the creative/unique feature(s) and can trace its conception and design. ■ The creative element's uniqueness has a practical application and contributes to the objectives of the competition. ■ Since creativity may involve risk of failure, the team should be able to describe how they mitigated that risk. ■ When the creative component functions as designed, it contributes to the team's success on the field.

Excellence in Engineering Award *sponsored by Littelfuse*	Celebrates the team whose machine incorporates an engineering solution designed to have components work together seamlessly.	■ A team must be able to describe:
		  ○ problem(s) they identified pertinent to the game challenge and how their machine incorporates a solution (s).
		  ▪ Teams do not have to design a robot that solves all game challenges.
		  ○ the engineering process they went through and can trace elements of the designs from conception through completion.
		■ The engineering solution is functional, practical, and did not create new problems.
		■ The engineering solution contributes to the team's success on the field.

Industrial Design Award	Celebrates the team whose machine demonstrates industrial design principles, striking a balance between form, function, and aesthetics.	■ A team must be able to describe how their machine design is elegant, efficient (simple/executable), and practical. ■ The entire machine, and not just a single component, or the detailed process used to develop the design, is worthy of this recognition. ■ The robot distinguishes itself from others by its aesthetic, design, and performance.
Innovation in Control *sponsored by nVent*	Celebrates an innovative control system or application of control components – electrical, mechanical or software – to provide unique machine functions.	■ A team must be able to describe their controls innovation and can trace its conception, design, manufacturing/assembly, or deployment. ■ The control system is innovative and unique. ■ The control system is integrated with the machine, human players, strategy, etc. in concept and execution. ■ The innovation is practical; it addresses the game's challenge and is reliable under the stress of competition.
Quality Award	Celebrates machine robustness in concept and fabrication.	■ A team must be able to describe their quality plan i.e. how their design ensures robustness throughout the entire competition. ■ The entire machine demonstrates quality: workmanship, welds, attachment systems, wiring, paint, etc. ■ The machine can withstand the rigors of competition – maintaining functionality, including the use of designed-in redundancy and risk mitigation measures ■ Building the machine contributes to the team's success on the field.

Examples of Machine Attribute Awards Questions

Below are example questions for conducting interviews. These questions are not required, they're meant to supplement each judge's own personal interview style.

- What one component or control aspect of your robot has worked well (as originally designed) all season?
- If you could *snap* your fingers and change one component or control aspect on your robot, what would you change and why?
- What is your favorite ("Coolest") feature on the robot?
- What feature are you most proud of this year?
- What is the most creative part on your robot?
- What features make your robot different/unique?
- Have you seen any other teams with a similar feature?
- Describe the aspects of your robot that are done autonomously.
- How effective has it been in match play?
- Tell me about the design process your team used to meet this year's game challenges.
- How did you decide what was critical for being effective in this year's competition?
- What features on your robot were specifically designed to give you a strategic advantage?
- What has been your biggest maintenance headache this season?
- What adjustments/upgrades have you made on your robot since you started match play?
- **FINAL QUESTION … Is there anything you would like to tell us about your robot that we didn't cover?**

Awards Based on Team Attributes

Award	Description	Guidelines
Engineering Inspiration Award	Celebrates a team who demonstrates outstanding success in advancing respect and appreciation for engineering within a team's school or organization and community.	A team must be able to describe the following attributes, with an emphasis on the most recent year's efforts, and with performance indicators that provide measurable success of their efforts: ■ The extent and inventiveness of the team's efforts to recruit students to engineering or other STEM fields. ■ Extent and effectiveness of the team's community outreach efforts. ■ A commitment to science and technology education among the team, school, and community. ■ Achievement of the *FIRST* mission and ability to communicate that at the competition and away from it. ■ Efforts are ongoing, not strictly concentrated on the build and competition season.
***Gracious Professionalism* Award**	Celebrates outstanding demonstration of *FIRST* Core Values such as continuous *Gracious Professionalism*, sportsmanship, and working together both on and off the playing field.	■ The team exemplifies the principles of *FIRST* Core Values in relationships with other teams and by their demonstrated *Gracious Professionalism.* ■ The team consistently demonstrates *Gracious Professionalism* and a positive attitude both on and off the field. ■ If the team worked with another *FIRST* Robotics Competition team pre-season – they can describe the following: ○ How the collaboration was conducted during the off-season and during the build season. ○ How the teams divided up tasks fairly and equitably. ○ How the process of communication flowed from one team to the other. ○ How working together as a group was beneficial over working independently. ○ The financial impacts of working together vs working independently.
Imagery Award *in honor of Jack Kamen*	Celebrates attractiveness in engineering and outstanding visual aesthetic integration of machine and team appearance.	■ The team must be able to describe its theme and its origins. ■ The theme is original and is fitting to the objectives, character, and/or history of the team. ■ The theme is incorporated into all aspects of the team, i.e. uniforms, pits, machine, mascot, etc. ■ Visuals of the integrated team/machine are exceptional and attractive. ■ The team theme is supportive of the principles of *FIRST* Core Values.
Judges Award	During the course of the competition, the judging panel may decide a team's unique efforts, performance, or dynamics merit recognition.	■ This team has fully embraced the principles of *FIRST* ■ Many judges have noticed and commented on the positive aspects of the team. ■ The team exemplifies a positive attribute or feature that is not addressed in the criteria for other awards that merits recognition.

Rising All-Star Award *Optional Award*	Celebrates the team that has persisted through challenges, despite the difficulties of being young. This could be the result of being a new team, or a team with recent turnover in membership.	■ This team understands the power of the *FIRST* mission and demonstrates through their actions both at home and at the competition the ethos of Gracious Professionalism and Coopertition. ■ This team is a role model for other young teams ■ This team stands out as a team with a sustainable and promising future with *FIRST*. ■ The purpose of this award is to recognize new teams or teams that have new beginnings ■ Teams do not have to be in their first year. For example, the award could recognize a team in their second or third year who has undergone significant growth or succeeded despite challenges.
Rookie All-Star Award *Optional Award* Note: Any team with a team number of 10,900 or higher is eligible for this award.	Celebrates the rookie team exemplifying a young but strong partnership effort, as well as implementing the mission of *FIRST* to inspire students to learn more about science and technology.	■ This team seems like a "*FIRST* Impact Award team in the making." (Community activities, leadership, vision, spirit, etc.) ■ The team is a true partnership between school or organization and sponsors. ■ The team understands what *FIRST* is really trying to accomplish – realizes that technical stuff is fun, challenging, and offers a future. ■ This team has built a robot appropriate to the game's challenges.
Team Spirit Award	Celebrates extraordinary enthusiasm and spirit through exceptional partnership and teamwork furthering the objectives of *FIRST*.	■ The team displays obvious enthusiasm – in supporting teams, appearance, interactions with teams/judges, etc. – at the competition. ■ Spirit is part of the team and is apparent in all they do, including at their school, in their community, with sponsors and other teams, etc. ■ They demonstrate spirit as a unified team.
Team Sustainability Award *sponsored by Dow*	Celebrates a team which has developed sustainable practices that focus on a "triple bottom line" (i.e. People, Prosperity, and Planet) to have a positive impact and achieve long-term continuity.	The team must be able to explain their plans and actions associated with one of more of the following sustainability initiatives: ■ People initiatives: ○ How the team recruits, trains, and retains students, mentors, and sponsors. ■ Prosperity initiatives: ○ How the team fundraises and creates and tracks budgets. ○ How the team identifies and manages risks (e.g. money, students, mentors, etc.). ■ Planet initiatives: ○ How the team assesses its environmental impact and what the team does to mitigate or reduce it. ○ How the team's environmental sustainability strategy impacts their team longevity.

Examples of Team Attribute Awards Questions

- How has *FIRST* changed you? Your team? Your school?
    - What team accomplishment makes you most proud?
- Outside of your team, who has given you the most help this year? How?
    - Who have you helped this season?
- What have been the top priorities for your team this year?
    - How did you establish them?
    - What has your team focused on improving this year?
- How has your team spread the *FIRST* Core Values in your school? In the community?
- Tell us how your team has demonstrated *Gracious Professionalism*® and/or *Coopertition*®.
- Has your team done any community outreach?
    - Does your team have any involvement with *FIRST*® Tech Challenge or *FIRST*® LEGO® League?
- How does your team support *FIRST* core values?
- How does your team integrate imagery and branding?
- How does your team find and "Thank" your sponsors/supporters?
- How does your team keep students, mentors, and sponsors actively engaged?
- How does your team celebrate success and document lessons learned to prevent repeating mistakes?
- Describe what your team does related to environmental sustainability.
- How does your team budget for the season?
    - How does your team ensure there's funds/resources available for future seasons?
- How long has your team been a team for?
- Can you describe a challenge you have had because of lack of experience?
- How many new team members do you have this year? How many team members are returning?
- Do you have a succession plan? Can you describe it?
- Did your team discuss potential risks for the season? Describe your contingency plan
- How do you ensure that your team is following correct safety practices?
- **FINAL QUESTION… Is there anything you would like to tell us about your team that we didn't cover?**