



EVERYONE'S GUIDE TO THE BEST AWARD

CONGRATULATIONS on your decision to participate in this year's BEST Robotics Competition! We're excited and hope you are too.

Our competition goals are based on learning, collaboration, and fun. We know the learning and collaboration parts are covered, but to ensure that the season remains fun for all, we've put together this guide to help eliminate confusion and to establish greater consistency.

2019 BEST Award Components

In industry, a company's product engineering/design, technical documentation, marketing and communications, and community outreach/advocacy all play important roles within the product development process. BEST Robotics has modeled the judged components of the BEST Award with this in mind; this allows students to realize and experience the importance of each within the context of a product development.

- The purpose of the **Engineering Notebook** is for students to learn how to
 - Research/understand a problem and develop potential solutions
 - Formally document processes (engineering design, software development, etc.) that were followed, and strategies that were employed, and
 - Generate technical documentation for the product (robot) that an end-user (or buyer/client) can understand.
- The purpose of the **Marketing Presentation** is for students to learn how to
 - address the needs of a potential client,
 - share product and brand information, and
 - navigate the business environment.

- The purpose of the **Team Exhibit** is for students to display a visual story of the team's outcomes and impact. The exhibit should be designed around the annual theme and depict the team's work in three realms:
 - Robot/Product Features,
 - Marketing/Branding, and
 - Community Outreach/Advocacy.
- The purpose of the Judges' **Informal Interviews** is to
 - strengthen students' communication skills- (as listeners and speakers),
 - validate their knowledge and understanding of the work done by the entire team, and
 - spotlight unique design features, activities, or learnings.
- The purpose of the **Spirit and Sportsmanship** component is to allow students to demonstrate advocacy within a team environment and sportsmanship within a competitive environment.
- The purpose of the **Robot Performance** component is to allow students to demonstrate the effectiveness of their product under actual use conditions.

ENGINEERING NOTEBOOK

The engineering notebook is a place for you to document your research, strategy planning and engineering design process. It is where you display your understanding of the problem presented (i.e., the game task) and where you explain the design/development processes that you followed to create your solution to the "problem" (i.e., robot and game strategy).

- Research

Includes research about the problem presented in the Game Story. That is, research about the general problem statement and the industries affected. Research and interview companies in your local community and state that are addressing the problem or are a part of the industries affected.

- Strategy Planning & Requirements

Demonstrate a clear understanding of the requirements related to the robot design, the competition, and the industry. Clearly articulate your project planning, schedules, distribution of assignments, etc. Explain the design and competition strategies that you plan to utilize to be successful.

- Engineering Design Process

Clearly communicate the Engineering Design Process (EDP) you followed including brainstorming, analysis and evaluation, design trade-offs, prototyping, production/manufacturing and testing. The EDP is a big picture look at how you identified the problem, how you systematically analyzed the problem and how you developed a (robust) solution. It is most often an iterative process of refinement and improvement. Refer to the resources available from BEST Robotics on the Engineering Design Process.

- Software Development Process

Clearly communicate the Software Development Process (SDP) that your team followed when creating the robot software. Include information about assessing the human factors (which controls to use), writing the code, testing the code, and maintaining the code (version control). Use diagrams, flow charts or tables to show the process steps. The SDP should not be a full explanation of the code itself but an explanation of how you determined what code was needed and how you developed it.

- Quality

Be certain to address all criteria on the score sheet. Be certain to adhere to the document quality specifications and the Formal Writing criteria.

- Appendices

Use the appendices to include the support documentation.

MARKETING PRESENTATION

The Marketing Presentation allows teams to use competition robots as a mock product in order to gain insights into the business sales process.

Your team is a small business and you're pitching your latest invention/product to a group of decision makers at BEST Robotics' headquarters in response to a RFP. Your goal is to inform, persuade, and build trust between your company and your potential client.

The business presentation/meeting format, teams are provided with a practical experience where transferable skills like public speaking are strengthened, knowledge of the sales process is developed, and the art of listening to understand client needs is learned.

Your company's Brand Promise will establish a shared understanding of the client's problem and how your product delivers the solution. The only details about the engineering team and the manufacturing

process that need to be included are those that highlight the unique characteristics or how those things differentiate your product compared from your competitor's. Storytelling will be an important tool that can add personality to your brand and create a stronger connection with your client.

Your presentation must close with a call to action for your client and mutually agreed upon next steps. The call to action can be a sale, another meeting, invitation to tour the plant or visit the team exhibit. Your "call to action" dialogue should prompt the client to do something. Example dialogue could be "Would you like to talk about delivery details in a follow-up call next week?", "Would you like to visit our factory for a behind the scenes look at how the product is made?", "Would you like to pre-order today to become an early adopter and get ahead of your competition?". Be creative with the dialogue.

Refer to the Glossary for further explanation of terms and concepts you might be unfamiliar with.

TEAM EXHIBIT

- Electric power usage (2019 Off The Grid)

Because the 2019 challenge involves rebuilding our power grid resources following a catastrophe, teams are asked to fully grasp the cost of such resources and our dependence on them. Teams are asked to estimate/calculate the electrical energy consumption for their Team Exhibit. You can provide estimations based on the equipment/apparatus within your exhibit that consumes electrical power. For example, research how much power each item uses, total power for the exhibit, extrapolate how much power is consumed during the time the exhibit is in use, etc.

Judges will be looking to see that you attempted to estimate the power used and that your math/logic is sound. There is no expectation for actual measurements (unless you are ambitious) or verification on the accuracy of the estimates. However, estimates should be based on reality and not just made up numbers.

- Conveying your company's brand through tone and language

Consider the brand as a personality. Students should describe the brand/product from the company's perspective of how your company envisions the brand. This is important during the "elevator speech" about the brand/product. Everything said here should complement how the brand is portrayed and described elsewhere (in print/advertising, in other interviews, in actions you have taken in the community, etc.). For example, did you mention the brand promise and how that translates into the way you do business?

- Communicating the brand personality

Communicate the brand personality through storytelling. Judges will be listening for how you connect the abstract with a story that illustrates your points.

- Social Responsibility

Social responsibility is about accepting an obligation to act in a manner that benefits society. It is about solving societal issues, in addition to building the company's financial health and reputation.

What is the actual problem being solved and why does your company believe it's important to contribute your efforts to help solve the problem within your community?

- Outreach and Outcomes

What actual actions did you take and what tangible impact did those actions have?

Judges are looking for you to explain what outreach you did in your school and community related to the BEST Robotics program, your team, and the annual game-related problems you are solving.

Here is one example: "Our country is facing a critical shortage of talent in the field of electrical engineering. If we don't act now to engage more students in studying this, our country's industries will be left behind unable to innovate. We at XXX company are already realizing a disadvantage in finding enough candidates for the jobs we have. We work closely with BEST Robotics to help engage more students in STEM activities and ultimately, inspire them to pursue degrees, training, and careers in the field of electrical engineering. Here's how our efforts made a difference: During the past year, we went to 4 schools and engaged 150 students in hands-on activities. We helped to connect those 4 schools to their local BEST Robotics hub and to other local STEM enrichment programs. As a result, 3 of those 4 schools now offer the BEST Robotics program for free to more than 224 students."

JUDGES INFORMAL INTERVIEWS

Informal interviews can be tricky. What will I be asked? Do I know the answers? How long do I talk?

Remember it is just a conversation. Be yourself but be prepared. Don't memorize answers, know the answer or where/how to get it. Start with your elevator speech. Share personal testimonials or testimonials from others.

- What is an Elevator Speech?

It is a brief, persuasive speech (pitch) that you use to spark interest in what your organization does.

Your pitch should be a short recap of who you are and what you do. You need to be persuasive. Even though it's a short pitch, your elevator speech should be compelling enough to spark the listener's interest in your idea, organization, or background. Share your skills.

A good elevator pitch should last no longer than a short elevator ride of 20 to 30 seconds, hence the name. It should be interesting, memorable, and succinct.

- What is a Testimonial?

A testimonial consists of a person's written or spoken statement extolling the virtue of a product, an organization's mission, or a person's character.

A testimonial should make a point, often addressing a sticking point (question, concern, issue, hesitation) that a prospect might arrive at.

Use real language (written or verbal). It should not be a formal statement.

It should be from the heart and convey belief; you cannot fake it (it will be obvious).

It should be specific.

SPIRIT AND SPORTSMANSHIP

The spirit and sportsmanship award is about team advocacy, sportsmanship, grace, cooperation, assistance, and attitude.

- Advocacy/Spirit

Advocacy is defined as any action that speaks in favor of, recommends, argues for a cause, supports or defends, or pleads on behalf of others. You show advocacy for your team/company and for BEST Robotics. You show it by your actions, through your dress, signs, posters, props, mascots, bands and your supporters. Your attitude and enthusiasm are key elements of showing advocacy and team spirit.

- Sportsmanship

Sportsmanship is a fair and generous behavior or treatment of others, especially in a sports-like competition, like BEST Robotics. It is defined as ethical, appropriate, polite and fair behavior while participating in a game or athletic event. When a basketball player plays by the rules, is fair to his opponent and is gracious when he loses, this is an example of sportsmanship.

In BEST, we strive for a level playing field among teams and a fairness across the program. Playing by the rules is important. A core value of BEST is that students take ownership and are the primary designers, builders and pit crew on game day, not the adult mentors.

Good sportsmanship encompasses many aspects of a man's character, the most fundamental being respect. The good sportsman respects both his teammates and his opponents as equals. He plays with integrity and plays by the rules.

ROBOT PERFORMANCE

The Robot Performance is exactly what it sounds like. How your product performs under actual use conditions is a key factor in decisions for investors or buyers. Often companies that provide a demonstration or benchmarking of their product and its capabilities. The head-to-head competition is analogous to such a demonstration. How you fare in the head-to-head competition may affect how you are ranked against other industry competitors.

Glossary

1. Active Listening:

Active listening is a technique that requires that the **listener** fully concentrate, understand, respond and then remember what is being said. **There are five key active listening techniques you can use to help you become a more effective listener:**

No. 1: Pay attention. One goal of active listening is to set a comfortable tone and allow time and opportunity for the other person to think and speak. Pay attention to your frame of mind as well as your body language. Be focused on the moment and operate from a place of respect.

No. 2: Withhold judgment. Active listening requires an open mind. As a listener and a leader, you need to be open to new ideas, new perspectives and new possibilities. Even when good listeners have strong views, they suspend judgment, hold their criticism and avoid arguing or selling their point right away.

No. 3: Reflect. Learn to mirror the other person's information and emotions by paraphrasing key points. Don't assume that you understand correctly or that the other person knows you've heard him. Reflecting is a way to indicate that you and your counterpart are on the same page.

No. 4: Clarify. Don't be shy to ask questions about any issue that is ambiguous or unclear. Open-ended, clarifying and probing questions are important tools. They draw people out and encourage them to expand their ideas, while inviting reflection and thoughtful response.

No. 5: Summarize. Restating key themes as the conversation proceeds confirms and solidifies your grasp of the other person's point of view. It also helps both parties to be clear on mutual responsibilities and follow-up. Briefly summarize what you have understood as you listened and ask the other person to do the same.

No. 6: Share. Active listening is first about understanding the other person, then about being understood. As you gain a clearer understanding of the other person's perspective, you can then introduce your ideas, feelings and suggestions. You might talk about a similar experience you had or share an idea that was triggered by a comment made previously in the conversation.

Learn more about the subject:

- <https://www.ccl.org/multimedia/podcast/the-big-6-an-active-listening-skill-set/>
- <https://www.oxfordlearning.com/improve-active-listening-skills/>
- <https://courses.lumenlearning.com/vccs-cst100-17fa/chapter/chapter-4-three-as-of-active-listening/>

2. Advocacy:

Advocacy is defined as any action that speaks in favor of, recommends, argues for a cause, supports or defends, or pleads on behalf of others. In BEST, you advocate for your team or “company” and your cause.

3. Brand Promise:

A **brand promise** is a unique value or experience a company's customers can expect to receive every single time they interact with that company. The more a company can deliver on that **promise**, the stronger the **brand** value in the mind of customers and employees.

Ten tips on branding

To build a successful brand you should:

- Focus on what your business achieves for its customers. Your brand is no good to you if it isn't delivering what customers want.
- Take ownership of your brand. Pay attention to customers' needs, but you should still control what you want your brand to mean to them.
- Be honest. If you don't believe in your brand, no one else will.
- Keep your brand simple by focusing on a small number of key brand values.
- Be consistent. Every aspect of your business should make customers feel the same way about you.
- Be thorough. Look at all your systems to make sure they help to support your brand.
- Involve employees. Make sure they understand your brand and believe in it.
- Communicate your brand. Make sure every advertisement, brochure and letter help reinforce the same message. If you have a logo, use it everywhere, but make sure the quality is consistent.
- Meet and exceed what your brand promises. Failing, just once, will damage your brand.
- Manage your brand. Continually look for opportunities to make improvements. And don't be afraid to make changes to reflect shifts in the way you do business or new trends in your market.

Learn more about the subject:

- <https://edwardlowe.org/how-to-identify-your-brand/>
- <https://www.powerreviews.com/blog/brand-promise-examples/>
- <https://www.infoentrepreneurs.org/en/guides/branding---the-basics/>

4. Elevator Speech

An elevator pitch, elevator speech, or elevator statement is a short description of an idea, product or company that explains the concept in a way such that any listener can understand it in a short period of time.

5. (Social) Impact:

Impact is the result of the actions, or output, of the organization. In the context of nonprofits, impact refers to a measurable difference that is realized by the community as a result of carrying out the nonprofit's mission. The University of Michigan defined social impact as "a significant, positive change that addresses a pressing social challenge. Having a social impact is the result of a deliberate set of activities."

Learn more about the subject:

- <https://donorbox.org/nonprofit-blog/measuring-nonprofit-social-impact/>
- <https://www.councilofnonprofits.org/tools-resources/evaluation-and-measurement-of-outcomes>

6. Mission:

Every **nonprofit** is on a **mission**. A **mission** statement describes an organization's fundamental, unique purpose. It communicates the value the **nonprofit** delivers, and what groups it serves and how. Therefore, the best **nonprofit mission** statements are a succinct encapsulation of: Why your **nonprofit** exists and whom it serves.

The BEST Robotics Mission: To engaging, excite and inspire students to pursue degrees and careers in engineering, science, and technology.

7. Product Benefit/Value Proposition:

A value proposition is a promise of value to be delivered, communicated, and acknowledged. It is also a belief from the customer about how value will be delivered, experienced and acquired. A value proposition can apply to an entire organization, or parts thereof, or customer accounts, or products or services.

How to Write a Value Proposition

1. Identify all the benefits your product offers.
2. Describe what makes these benefits valuable.

3. Identify your customer's main problem.
4. Connect this value to your buyer's problem.
5. Differentiate yourself as the preferred provider of this value.

Learn more about the subject:

- https://en.wikipedia.org/wiki/Value_proposition
- <https://blog.hubspot.com/marketing/write-value-proposition>
- <https://optinmonster.com/32-value-propositions-that-are-impossible-to-resist/>

8. Professional Attire:

Business **professional** is like business formal but does not necessarily mean you have to break out your best shoes and suit. ... Women can wear a pants suit, dress or skirt while men may wear a blazer or suit jacket, button down shirt, suit pants, a tie and dress shoes.

For the BEST Robotics presentation, the expectation is that the students' appearance is neat and appropriate for any business meeting. Even in corporate cultures where casual attire is the norm in the office, staff adapt for meetings with outside clients and ditch the jeans for their initial meetings with new and prospective clients.

For this presentation, males should wear dress pants and a button-down shirt. Jackets and ties are optional. Females may wear pants, skirts or dresses. Hem length should be at or below the knee. Tank tops and tops that expose bra straps are inappropriate. Clothing with lace, shear fabrics, and sequins are not considered professional and should be avoided. Evening wear, skirts or dresses with revealing slits and tops that reveal any cleavage are also inappropriate. Sneakers, boots, or sandals are not considered professional attire for students.

Learn more about the subject:

- <https://smallbusiness.chron.com/definition-appropriate-business-attire-25688.html>

9. (Corporate) Social Responsibility:

Social responsibility (or, corporate social responsibility) is a theory that asserts that businesses, in addition to maximizing shareholder value, have an obligation to act in a manner that benefits society. The [International Organization for Standardization](#) (ISO) emphasizes that a business's ability to maintain a balance between pursuing economic performance and adhering to societal and environmental issues is a critical factor in operating efficiently and effectively.

Learn more about the subject:

- <https://www.investopedia.com/terms/s/socialresponsibility.asp>
- <https://bizfluent.com/info-8117691-four-types-corporate-social-responsibility.html>
- <https://www.businessnewsdaily.com/4679-corporate-social-responsibility.html>

10. Storytelling:

Storytelling is a tool that demonstrates the organization's impact at a personal level. By defining how the organization's work has made a difference in a person's life helps your audience to connect with the mission and to build a better understanding of why the work is important, which helps to validate the need and compel support.

When thinking about your stories and answering the included story prompts, keep in mind the following 4 C's of Nonprofit Storytelling:

CONNECTION: Connection is the bridge between the audience and your organization. The most common connections are our basic needs, wants and desires: a roof over our head, food on the table, a clean environment to live in, safe neighborhoods, access to education...

CHARACTERS: There are usually two main characters in a nonprofit story. The main character is the person, animal, place, or entity that has been improved by your organization. The second character is your organization and/or the donors who make the improvement possible.

CONFLICT: Conflict is what holds the main character back from achieving their basic needs, wants, and/or desires.

External conflict - the obvious physical barriers relating to health, finances, environment

Internal conflicts – the unseen barriers relating to thoughts, beliefs, and feelings

CONQUEST: The outcome of the main characters situation. How the character's problem has been solved and/or life has been improved (with the help of your organization)

Learn more about the subject:

- <https://nonprofithub.org/nonprofit-marketing/the-art-of-nonprofit-storytelling/>
- https://www.nten.org/article/15-ways-harness-power-nonprofit-storytelling-advocacy/?gclid=CjwKCAjw7anqBRALEiwAgvGgm-HOA2hgZF4iQsOx8dKeJiu-d3NUSA_EpJS92reajJFw8w27YS9ZfxoCIYUQAvD_BwE
- https://static.scs.georgetown.edu/upload/kb_file/csic-storiesworthtelling-infographic1.jpg
- https://trust.guidestar.org/2015/05/21/datas-role-in-your-nonprofit-storytelling-strategy/?utm_term=&utm_campaign=Blog&utm_source=adwords&utm_medium=ppc&hsa_src=g&hsa_ad=330089356768&hsa_grp=55798044226&hsa_cam=1424738301&hsa_ver=3&hsa_net=adwords&hsa_mt=b&hsa_acc=7800317649&hsa_kw=&hsa_tgt=dsa-

In promotion and of advertising, a testimonial consists of a person's written or spoken statement extolling the virtue of a product. The term "testimonial" most commonly applies to the sales-pitches attributed to ordinary citizens, whereas the word "endorsement" usually applies to pitches by celebrities.