

BEST Vocabulary

Overview

The following are terms that are typically used by all hubs or in reference to common BEST events or areas.

Awards and Judging Committee – a committee under the Board of Directors that defines the standards by which all competition awards are judged at both the hub and championship competitions. These standards vary only slightly between hubs and championships.

BEST Award – the highest possible award within the BEST Robotics competition. It is comprised of five components, some of which are optional for hubs to include: engineering notebook (mandatory); marketing presentation (optional); team exhibit and interviews (optional); spirit and sportsmanship (mandatory); and robot performance (mandatory).

BEST Award Scoring Tool – provided by the Awards and Judging Committee, this scoring tool is Excel-based to assist the head judge with accumulating all the scores and feedback from judges for the BEST Award. It is mandatory that all hubs use this scoring tool for calculating BEST Award results.

BEST Competition Rules – A conglomeration of the standardized rules all teams must follow for the fall robotics competition. This includes rules covering the entire competition including robot construction, kit usage, game specific rules, awards criteria and assessment, etc.

Board – the Board of Directors chaired by BRI’s Executive Director and comprised of members from business/industry and academia, some of whom also play a role in both hub and championship competitions.

BRI – the acronym for BEST Robotics, Inc.

Bylaws – the official document that establishes duties and regulations of the Board and the Executive Staff.

Championship – one of a set of championships to which winning teams from local hubs advance. Formerly called “regionals” or “regional championships”. Hubs send their top teams to the closest championship geographically to minimize the team’s travel.



Coach – a term used interchangeably with “teacher,” the primary adult team representative, typically a school teacher. Sometimes industry mentors are also referred to as coaches.

Competition Awards – the mandatory and optional awards given out on Game Day.

Compliance Check – the process by which the hub validates that teams have used only the equipment and materials provided to them at Kick Off Day in the construction of their robots and that they have followed all rules related to robot construction. It is typically conducted in the Pit by the Pit crew prior to the actual competition (often the evening before). The robots must meet all of the requirements stated in the rules.

Consumables (Kit) – the kit of raw materials provided to teams from which they must build their machine. Teams are limited to using only these items, plus a small number of defined, optional items they can provide on their own. The Consumables Kit is distributed to each team on Kick Off Day.

Consumables Kit Coordinator(s) – one or more individuals within a hub who coordinate the procurement of materials and assembly of the kits. Assembling the kits takes place over the summer – as soon as the list of “Consumables,” as it is typically called, is announced by BEST Robotics.

Driver – the member of the robotics team that steers the robot (via radio control) during the match.

Drivers List – provided by each team to the Pit Boss/Crew the morning of Game Day (or earlier if requested) – prior to the actual head-to-head matches begin - so that drivers’ names can be checked to ensure that teams rotate drivers per match as required by the rules. The driver rotation is required so that no single (i.e., likely the most proficient) driver is doing the majority of driving, thus having an unfair advantage over other teams that consistently rotate drivers. The required minimum number of drivers is specified in the BEST Competition Rules.

Drivers Meeting – typically held on the morning of Game Day for representatives from each team. The purpose of the meeting is to clarify how drivers will rotate and teams will stage their robotics during the head-to-head competition. The meeting may also cover specific rules, how penalties may be assessed, how drivers should communicate with referees, etc.

E-Field (Electronic Field) – the portion of the game field that records scores electronically via switch closures or other sensors tied to an electronic scoring system.

Engineering Notebook – provided by each team and preferably judged by technical professionals or engineers, the notebook documents the process the team



used to design, build, and test their robot. In addition to a robot, all teams must submit an engineering notebook in order to compete on game day.

Floor Boss – a member of the hub crew that oversees the overall operations that take place in the head-to-head competition on Game Day. These operations include scorekeeping, the Pit, staging, and the matches themselves. Many hubs use the Floor Boss as the “go-to” person or mediator for teams wishing to voice complaints or ask questions.

Game – the robotics challenge, which changes annually. The game is educational in nature and has a theme with ties to an industry or an industry problem. Part of the competition includes research related to the game theme itself.

Game Committee – committee reporting to the Director of Operations that designs the annual game (i.e., robotics challenge) and establishes its rules. The committee comes out with draft versions of the rules in early summer and issue a final version in early August.

Game Day – held on the sixth weekend of the program and includes both the robotics and BEST Award competitions.

Game Phases – on Game Day, the robotics competition is run as a seeding phase (often extending past lunch), which is followed by a wildcard match, a semi-final phase, and then a finals phase. At the conclusion of the seeding phase, teams are ranked top (most points scored) to bottom (least). The top eight or sixteen teams will advance to compete in the semi-final phase, depending on the size of the competition (number of teams). The wildcard match is used to determine the final team(s) that will advance to the semi-final phase. Teams that participate in the wildcard match are determined by their engineering notebook scores. The top four teams from the semi-finals phase will advance to the finals phase.

Game Rounds – In the head-to-head competition, a “round” refers to the point of time in the schedule when all teams have completed 1 match. For example, the seeding schedule may be setup to have all teams play in at least 8 total matches each. So, there are 8 “rounds” in this seeding phase. After all teams have completed their first match, round 1 is complete. After all teams have completed their second match, round 2 is complete. And so on. Rounds are used when a hub may choose to end the competition early due to time constraints, etc. The scoring software will always end on a completed “round” so that all teams have played the same number of matches.

Game Specific Rules –The rules that are specific to the game challenge and govern the gameplay and scoring rules associated with the challenge. The rules are kept secret from teams until Kick Off Day, where they are initially introduced.



General/Generic Rules – a set of rules regarding machine design and performance that generally do not change from year-to-year.

Generic Kit Notes – a document provided to teams along with the BEST Competition Rules at Kick Off Day that describes how to properly use various items in the BEST kit.

Hub – the local organization (i.e., steering team or committee) that hosts an annual program.

Hub Director – the primary point-of-contact for disseminating information to the hub and gathering information from the hub. The hub director also is expected to be the primary person for ensuring that all BEST hub operations policies, competition rules, and other policies/procedures are followed.

Hub Operations Policy Manual – The official set of standards by which hubs are sanctioned and required to operate.

Hub Steering Team/Committee – the core group of local hub organizers that typically is comprised of individuals who are responsible for kits (Returnables and Consumables), event coordination, technical coordination, school/team coordination, volunteer recruitment, and awards and judging. Hubs are free to define how many members it needs for this group as well as each member's area(s) of responsibility.

Judges Interview – a part of the Team Exhibit in the BEST Award, judges (typically three separate individuals) stop by the team exhibit at different times of the day and, through talking to team members, assess the team's enthusiasm and learning experience, the student population of the team (diversity being a preference), level of student participation in designing and building the robot, and their community outreach efforts.

Kit Committee – a committee that determines the items on both kit lists – Consumables and Returnables – and releases the lists to the hubs in conjunction with the release of the annual game rules.

Kit Coordinator – typically an individual on the hub's steering team/committee who is ultimately responsible for insuring that both the Consumables and Returnables kits are assembled as required and, in the case of the Returnables, in peak operating condition.

Kick Off Day – traditionally held on a Saturday in September each fall, it is the event at which teams assemble to get the first look at the year's game as well receive the game rules and kits. There are 3 possible Kickoff dates for hubs, the first 3 weekends in September. Hubs are allowed to move the Kickoff forward or backward by a few days so long as they maintain the overall 6-week competition period between Kickoff and Game Day.



License Fee – a required payment that must be made to BRI prior to a hub receiving the year’s game rules, playing field schematics, approval to use BRI copyrighted materials and logos, etc. The amount is established by the Board and payment is typically expected prior to April 1st of each year.

Mall Day – Mall Day (also called Practice Day) is conducted at a public venue (often a local mall) to allow teams to practice drive their machines on the actual playing field that will be used on Game Day. Typically held on the fifth weekend of the six-week program, this event is also a great way for hubs to promote the upcoming Game Day event. Some hubs refer to this as “Practice Day” or “Demonstration (Demo) Day” if it is held at an alternative location.

Matches – in the head-to-head robotics competition, the competition is implemented as a series of matches that are typically three minutes-long, with four teams competing against each other in each match.

Marketing Presentation – as part of the BEST Award, each team must make a 15-20-minute presentation before a panel of judges in which they provide information about their team, the engineering that was incorporated in the design and construction of the robot, and why their team’s robot is the best one is good. Other aspects of the team’s progress can be included. The presentations are optional at the hub level, but mandatory at championships.

Mentors – serving as guides or advisors that shepherd the robotics team through the six weeks of machine design and construction, these adults can be engineers, technical professionals, parents, or others – no technical is required, but is obviously preferred. The role of mentors is clear: advise, not design or build.

Motion Kit – mechanical components (pulleys, belts, bearings, etc.) that are part of the Returnable Kit.

New Hub Workshop – an event held to provide interested groups or organizations with an overview of how BEST functions. It is mandatory for anyone wanting to start a hub and is typically held in conjunction with one of BEST’s championships so the group or organization can see how a game day event is conducted.

Pit – the NASCAR-like area near the playing fields where teams work on their robots between matches. Each team typically is provided with a six- or eight-foot table. Some hubs provide power at each table for tools; other hubs have a common repair station only at which teams can use power tools.

Pit Boss – responsible for all Pit functions, including: staffing the Pit Crew; setting up the Pit prior to the competition; Compliance Check-in; ensuring that passes are used properly and that mentors are only assisting in work on the machines; and breaking down the Pit after the competition.



Pit Crew – the team of individuals that assist the Pit Boss in running the Pit on Game Day.

Pit Passes – provided to the robotics team prior to the actual competition, the passes are used to control the number of individuals working at each table. The Pit Crew – sometimes called “Pit Police” – check for passes throughout the day. It is desired that there are more students with passes than mentors. If the event venue is large enough, these passes certainly do not have to be used.

Playing Field – designed by the Game Committee, it is what its name suggests: the field on which the robots play the game. It is typically made of plywood, PVC, and lumber and is set up on regular indoor carpet. Although the game changes annually, the playing field tends to be 24’ square or something similar due to space constraints in gyms or other venues used for Game Day. Some pieces of the playing field are recycled for use in future games. The carpet is used every year.

Prototype Game – held in April and typically the location of the year’s game designers, this event is the final testing of the year’s game and its rules before release. It is mandatory for hubs to provide representation at the Prototype Game. The weekend provides training for hubs as well as giving them a much better understanding of the nuances of the game and construction of the playing field.

Prototype Kick Off – typically held in March each year at the same location as the Prototype Game, this event heralds the first look at the year’s game. It primarily serves as a problem-solving session for hubs to provide feedback to the Game Committee on the construction of the field, specific game rules, etc. It is an optional event for hubs.

Returnables (Kit) – often preferred to as “Returnables,” this set of equipment is provided (i.e., loaned) to each team at Kick Off Day and includes such items as large and small motors, r/c units, speed controllers (or DSP cards, as the case may be), batteries, battery charger, and other items. The equipment is purchased by the hub and belongs to the hub.

Returnable Kit Coordinator(s) – one or more individuals within a hub who coordinate the assembly and maintenance/refurbishment of the kits. Assembling the kits takes place over the summer – as soon as the list of “Returnables,” as it is typically called, is announced by the Game Committee. The items in the kit typically stay the same year-to-year.

Scoring Manager Software – provided by the Game Committee, this software is standardized for use by both hubs and championships for scoring the head-to-head robotics competition. Hubs are required to use this software for the game.



Servo – an electro-mechanical component in the Returnable Kit that provides rotary motion in proportion to output from an R/C channel.

Spirit and Sportsmanship – as a mandatory part of the BEST Award, this is an observation by judges of the spirit promoted by the team during the competition rounds as well as the team’s conduct throughout the day in the seating area, at the (optional) Team Exhibit, on the playing field, and in the Pit.

Sponsor – this refers to sponsors of hubs and championships and not to team sponsors.

Spotter – this team member guides the driver during the match; he/she is positioned appropriate to the task on the playing field.

“Squeaky” – the very first prototype robot built in 1992 by Ted Mahler, one of the two founders of BEST. Squeaky often appears in the story line of the annual game. He (it?) definitely shows up each year at the Prototype Game. What Squeaky actually is (mouse robot?) remains a mystery.

Staging – the area between the Pit and the Playing Fields where teams “stage” their machines in advance of the next, upcoming match. While four teams are competing in a match, the next matches teams are “waiting in the wings” to go on.

Team Exhibit – an optional category within the BEST Award. Each team competing in this category is given an assigned space (8’ x 8’). The exhibits are judged on the team’s community relations, outreach and publicity activities within the community related to BEST.

Technical Coordinator – an individual or team of people who have sufficient knowledge of electronics and, particularly, r/c units, and who ensure that the electronics involved in both the playing field and the r/c units function properly on Game Day. An associated role is that of advising teams throughout the six weeks competition on various problems encountered in wiring and running their machines.