



# 2019-2020 TCEA Robotics Inventions Contest Rules



In the Inventions Contest, teams will create and develop a unique robotic invention that will solve a problem. Student teams will need to approach their problem, working together like real team of engineers, to solve a common challenge using the Engineering Design Process. The Engineering Design Process is a particular course of action and sequence of operations intended to achieve a result or produce an outcome. The Engineering Design Process consists of the following steps:

- **Research**
- **Plan**
- **Prototype**
- **Document and Test**
- **Commercialize**

All teams will be responsible for keeping a logbook where they record notes each time the team meets. The logbook should describe each step of the Engineering Design Process during the creation of their robotic invention. Judging criteria will be based on student teams presenting their step-by-step process, as well as documentation in their logbook. Students should use the Inventions Scoring Rubric as a guide for planning their project and presentation and for providing talking points for their presentation to the judges.

## **Inventions Specific Rules:**

- Each team will have a 6 ft. table to conduct their presentation on and will be limited to a 10 ft. by 10 ft. area, which will include the table. Teams are not required to use the table.
- Presentation time is limited to 6 minutes. Teams will be notified as they approach the 5-minute mark as well as the 6-minute mark. Judges are encouraged to hold questions to the end of the presentation, but it is not required.
- Teams final scores are averaged together for their rank at the area level and totaled at the state level.
- In the event of a tie, the log book is the tie breaker.
- Parents, sponsors, and spectators may not be in the Inventions area during a competition.
- Sponsors/parents may help transport heavy equipment before and after each contest, but they must immediately leave the pit or contest area after delivering the items. No lingering or further assistance from the sponsors/parents will be allowed. If further help is necessary, please communicate your needs to contest personnel. Example: parents/sponsors cannot use power tools to help construct the project onsite. If power tools are needed and the students are unable to use them, then the team needs to come up with a different plan/invention.
- Bluetooth is acceptable to control robots in the Inventions category only.
- The following robotic platforms are accepted for Inventions category: EV3, NXT, SPIKE Prime, and RCX.
- If any of the above rules are not followed, the final score may not reflect the 20 additional points for the “Compliance of Rules” or may lead to the disqualification of the team.

## **Team/General Rules:**

- Teams are led by at least ONE (1) team sponsor and are composed of at most FOUR (4) students. Students are not allowed to participate on more than one team.
- Teams may only compete in ONE (1) division (Advanced Arena, Intermediate Arena, Advanced Inventions, or Intermediate Inventions).



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- The team sponsor must have an active TCEA membership for the duration of the contest season. <[www.tcea.org/membership](http://www.tcea.org/membership)>
- All teams are required to have a team name that meets common school standards.
- Only registered students are allowed to touch the robot and the computer used to program it. The only exception is when technical problems with the computer occur. Live student problem solving is part of the spirit of this competition.
- Only registered students will be allowed in the team's work /competition area.
- Teams must designate ONE (1) student member to be the TEAM CAPTAIN. The team captain is the only person from a team who can review and/or initial score sheets or dispute field setup with the referees.
- Each team must have its own robot.
- Each robot, for both Arena and Inventions, should be a unique design for each team.
- Students in third grade and below cannot compete in TCEA contests.
- Students in grades 4-5 may ONLY compete in the Intermediate divisions.
- Students in grades 6-8 may compete in either Intermediate or Advanced divisions.
- Students in grades 9-12 may ONLY compete in the Advanced division.
- Teams must compete in their designated Area unless there are not enough teams in that Area to hold a contest. Contact your Area Director with questions.
- For the Area contests, each school may enter no more than THREE (3) teams per division without special permission from the Area Director. If space allows, the Area Director may allow schools to register more than THREE (3) teams.
- Wildcard teams will be selected for remaining spaces at the State Competition. Wildcard teams are selected by comparing all Area results. The top scorers who did not place first or second at the Area contests will receive invitations (depending on the number of spaces available).
- A maximum of TWO (2) Arena and/or Inventions teams from each school per division may advance to the State Competition.
- No more than THREE (3) wildcard teams per division from each Area can advance to the State Competition.
- If changes to the advancing team makeup need to be made due to conflicts with schedules or grades, the decision to fill the spot is up to the team sponsor and the school's principal.
- NO registrations past the deadline will be allowed at the Area or State Contests.
- Every effort to provide wireless Internet access will be made, but it cannot be guaranteed; please plan accordingly.
- Laser pointers are NOT allowed at contests.
- Parents, sponsors, and spectators may not be on the Arena competition floor, the pit, or the Inventions Contest location during the competition. These areas will be clearly defined at the competition.
- During the competition, students may not communicate with anyone except other registered students and competition staff; all forms of communication are prohibited, including, but not limited to, live and electronic communication (talking, texting, videos, etc.). Students should request assistance from competition staff if any communication with parents or sponsors is necessary.
- Any filming of the competition must be done from the designated spectator area (Arena) or by a team member who is in the competition area (Arena/Inventions). Students are allowed to videotape with a video camera and not with an Internet or Bluetooth accessible device (i.e. cell phone, tablet).
- If any of the above rules are not followed, the final score may not reflect the 20 additional points for the "Compliance of Rules" or may lead to the disqualification of the team.