

# YOUTH ROBOTICS CHALLENGE

– Superintendent

– Assistant Superintendent

**ENTRY DEADLINE – February 15, 2022**

**ENTRY FEE - \$40 per project**

## SCHEDULE:

Registration .....	Monday, March 14, 9:00 – 10:00 a.m.
Orientation.....	Monday, March 14, 10:00 – 10:30 a.m.
Build Time (10-minute Coach Time).....	Monday, March 14, 10:30 – 12:00 a.m.
Robot Challenge Pre-Lims .....	Monday, March 14, 12:00 p.m.
Robot Challenge Finals .....	Monday, March 14, Following Challenge
Awards Ceremony.....	Monday, March 14, Following Finals

**CONTEST DESCRIPTION:** This is a challenge-based robotics contest. Some known challenges will be released prior to the contest, and the remaining challenges will be revealed on contest day. Teams build and program their robot for known challenges prior to the contest. Teams will be given time to build and program the robot to account for the newly revealed challenges.

The known challenges will be posted at this link: <https://texas4-h.tamu.edu/projects/robotics/>.

## SPECIAL RULES:

- 1. Eligibility:** Participation is limited to Texas resident students. Contestants must be enrolled in and attending public, private or home school elementary or secondary schools in Texas. Students must be between the ages of 9 and 18 on or before August 31, year prior to Show (Exception: students in the 3<sup>rd</sup> grade become eligible on their 8<sup>th</sup> birthday). open to Texas 4-H and FFA members, and Texas students currently enrolled in an accredited Texas school or homeschool (with proof of enrollment). Three (3) to six (6) students may constitute a team in this contest and teams may be Texas 4-H Club Members, Texas FFA Chapter Members, or a school team. Students are not allowed to compete on more than one team. Students will not be allowed to compete on both a 4-H and/or FFA team and a school team. All students must be from the same school, or club/chapter.

**Junior Division:** Participants must be at least eight (8) years old and in the third grade, but no more than eight grade.

**Senior Division:** Participants must be in at least the ninth grade, but not older than nineteen (19) years old and in the twelfth grade.

This is an invitational contest; Rodeo Austin reserves the right to extend or withhold an invitation to any contestant or team.

Junior Exhibitors and Participants suspended under **Texas Education Code 33.081 “No Pass, No Play”** are ineligible to participate in any Rodeo Austin Junior activity, event or competition. Any animal or project owned by an ineligible Exhibitor is ineligible for competition.

All Texas Students are considered to be eligible by Rodeo Austin to participate in the Junior Show at the time entries are received from the AST/CEA/School Officials. Any AST/CEA/School Official who has a member in his/her program who becomes ineligible to participate in the Junior Show according to Texas Education Code must provide written and signed notification to the appropriate Superintendent of the Show at least 24 hours prior to judging. If such notification is not received at least 24 hours prior to the beginning of competition, Rodeo Austin will consider the Exhibitor as eligible to participate.

2. **Entry:** Application must be made through the online entry procedures located at [www.RodeoAustin.com](http://www.RodeoAustin.com) on or before February 15. An entry of \$40.00 per team will be charged for this event. Payment with entry authorization signatures must be submitted to: **Rodeo Austin Attn: Competitive Events, 9100 Decker Lake Rd., Austin, TX 78724**. Payment with entry authorization signature must be postmarked February 15, for all Robotics entries made payable to Rodeo Austin. Late entries will be accepted at contest check-in for an additional late entry fee of \$25/contestant. Show Management reserves the right to reject entirely or accept conditionally any entry.

If the bank for any reason should return the check accompanying entries, the entry will be cancelled and returned. There will be a \$50.00 service charge on all returned checks.

3. **Refunds:**

- a. Rodeo Austin will take place rain or shine. No refunds will be issued for inclement weather or even logistics changes.
- b. There will be no refund of fees. In the event of a cancellation of a specific contest/show, refunds may be offered in-part or in-full, and will be determined solely by Rodeo Austin

4. **COVID-19:** All Exhibitors, their family members and other related persons participating in Rodeo Austin shall comply with all health and safety orders, rules and guidelines related to COVID-19 promulgated by the State of Texas, County of Travis, City of Austin, CDC and Rodeo Austin. All health and safety protocols must be followed in strict compliance with local health regulations and ordinances.

- a. **Safety Information:** Because COVID-19 is extremely contagious and is spread mainly from person-to-person contact, Rodeo Austin cannot guarantee that its participants, volunteers, partners or others in attendance will not become infected with COVID-19. In light of the ongoing spread of COVID-19, individuals who fall within any of the categories below should not engage in Rodeo Austin events. By attending a Rodeo Austin event, you certify that you do not fall into any of the following categories:
  - i. Individuals who currently or within the past fourteen (14) days have experienced any symptoms associated with COVID-19, which include fever, cough and shortness of breath among others
  - ii. Individuals who believe that they may have been exposed to a confirmed or suspected case of COVID-19 or have been diagnosed with COVID-19 and are not yet cleared as non-contagious by state or local public health authorities or the health care team responsible for their treatment
- b. **Duty to Self-Monitor:** Participants agree to self-monitor for signs and symptoms of COVID-19 (symptoms typically include fever, cough, and shortness of breath) and contact Rodeo Austin if he/she experiences symptoms of COVID-19 within 14 days after participating at Rodeo Austin.
- c. **Assumption of the Risk:** I acknowledge and understand the following:
  - i. Participation includes possible exposure to and illness from infectious diseases including but not limited to COVID-19. While particular rules and personal discipline may reduce this risk, the risk of serious illness and death does exist
  - ii. I knowingly and freely assume all such risks related to illness and infectious diseases, such as COVID-19, even if arising from the negligence or fault of the Released Parties
  - iii. I hereby knowingly assume the risk of injury, harm and loss associated with the Activity, including any injury, harm and loss caused by the negligence, fault or conduct of any kind on the part of the Released Parties.

5. **Pets:** No pets including dogs are allowed on the Show Grounds.

6. **Passes:** Passes will be mailed to the coach prior to Show. Each team will receive one (1) parking pass and Show Grounds passes if entered online by the deadline.

7. **Notice to Parents or Guardians of Participants and Participants:** Rodeo Austin, at its election, may choose to use photographs, videos and other likenesses of Participants in future publications including but not limited to, newspapers, magazines, television, promotional literature, World Wide Web (Internet) and Rodeo Austin programs. By allowing your child or ward to enter events of Rodeo Austin, you are deemed to have consented to such uses of photographs, videos and other likenesses of your child or ward.

**Signatures:** All Contestants must have the required signatures (Exhibitor, AST/CEA/School Official and Parent or Guardian) on each Certification of Entry.

**8. Contest Format/Rules of Play:**

- a. Teams must pre-build and program a robot prior to the competition.
- b. Teams will report to the designated location for check in and submit their robot and additional pieces/equipment for inspection.
- c. Each team will be directed to a team pit (one 6' or 8' table and chairs). Each pit will have access to electricity to power laptops and robot batteries.
- d. An orientation will be provided for all participants where show management will review the challenge, rules and scoring.
- e. The design of the game and designated number of challenges will be released in advance of the contest. There will be 3 to 4 additional unknown challenges revealed contest day, during orientation.
- f. Each team will have 1.5 hours for additional designing, building, programming, and testing of their robot.
- g. Teams will practice and compete on the same game table.
- h. If time permits, teams are allowed to make alterations to their robot design and/or program between matches.
- i. Teams must report immediately to the playing field when called.
- j. The robot must perform challenges autonomously.
- k. Only registered contestants and contest officials will be allowed in the pit Robot Challenge areas.
- l. Teams that may experience any equipment malfunction(s) may not replace the equipment with supplies outside the contest area (from leaders, volunteers, county extension agents or contest officials). Instead, team members must work together and be creative in completing preparation without the malfunctioning equipment or visit with other teams to borrow the needed part.
- m. Depending on the challenges, contest officials may provide non-Lego items that can be incorporated into the design of the robot.
- n. Coaches will be permitted to meet with their team for a 10-minute time period prior to Build Time. This time should be used to help team members develop a plan and foster positive youth development. Due to space limitations, there will not be a spectator area available until the finals.
- o. No cell phones or other types of communication devices are allowed in the pit or contest areas. Exceptions include the approved items listed in the Participant Rules. During Build Time and Robot Challenge, contestants are not allowed to communicate with anyone outside of the contest (coaches, parents, siblings, etc).
- p. A match will range between 1 and 3 minutes in length, depending upon the challenges designed for competition. The specific time limit will be noted in the game release document.
- q. Teams will have two preliminary matches in which to earn points. The sum score of the two matches plus the teamwork score will determine teams that qualify for the finals. The top 5 teams in each age division will advance to the final match. If there are fewer than 5 teams in an age division, no finals will take place. The total score from the preliminary matches (match + teamwork scores) will be used for preliminary placings.
- r. Finals will consist of two additional matches. The two match scores from the final round will be added to the total preliminary score. Finalist teams will be ranked based on their total scores. Judges' results are final.
- s. Tie-breaker procedures will be announced during orientation.
- t. Teams must clean up their pit areas prior to the awards ceremony. Teams not making the top 5 are free to leave once their pit area has been cleaned and are dismissed by contest officials.

**9. Minimum Construction Skills and Proficiency:** Competitors must be capable of designing and building a functioning Lego Mindstorm robot that includes the use of:

- a. Motors
- b. Light/color sensor
- c. Touch sensor
- d. Ultrasonic sensor
- e. Levers, arms, claws, etc.
- f. Incorporating non-Lego parts into robot design and/or function

**10. Minimum Programming Skills and Proficiency:** Competitors must be capable of programming a Lego Mindstorm robot in order for the robot to:

- a. Move
- b. Turn
- c. Lift
- d. Maneuver attachments effectively
- e. Use sensors appropriately and effectively

**11. Equipment:** Each team must supply their own equipment for the challenge. Each team may only bring the supplies listed in the table below. Any extra equipment or item that does not meet specifications will be returned to the team coach. No infrared beacons (remote) or sensors allowed.

- Lego® Mindstorm® NXT, EV3, Spike Prime, or Inventor building pieces (excludes brick, motors, and sensors) Unlimited Quantity
  - Backup rechargeable batteries or sets of AA batteries.....Unlimited Quantity
  - Lego® Mindstorm® NXT, EV3, Spike Prime, or Inventor brick/hub.....1
  - Lego® Mindstorm® NXT, EV3, Spike Prime, or Inventor motors.....3
  - Lego® Mindstorm® NXT, EV3, Spike Prime, or Inventor ultrasonic sensor.....1
  - Lego® Mindstorm® NXT, EV3, Spike Prime, or Inventor touch sensor.....1
  - Lego® Mindstorm® NXT, EV3, Spike Prime, or Inventor light or color sensor.....1
  - Lego® Mindstorm® EV3 gyro sensor.....1
  - Laptop computer or tablet with programming software (Lego® or non-Lego® is acceptable).....1 or 2
  - Power strip (3-prong, grounded)\*.....1
  - 25 ft. (max) extension cord (3 prong, grounded)\*.....1
  - USB cable connection.....1
  - Build Plans (paper or digital).....Unlimited Quantity
  - Plastic container or cardboard box for transporting robot to and from game area.....1
  - Ruler or tape measure.....1
  - Pencils and notepad with blank paper for design and note-taking purposes.....Unlimited Quantity
- \*\* NO two-prong extension or power strip plugs allowed.

**12. Scoring:** Point values for each separate challenge may vary, depending on the level of challenge difficulty. Penalties will also depend upon challenge design, but examples may include: knocking over pieces, restricted human interaction with robot or game pieces, excessive retrievals, etc. Points will be awarded or deducted for each round of match play. Additionally, a teamwork score will be assessed by a panel of judges and added to the match scores to form the preliminary team score. The preliminary team score determines qualifiers for finals. After each match, the team captain will initial the score sheet, indicating agreement to the points awarded. Once signed, the match score is final and cannot be challenged. The contest tabulator will review the score sheet and will correct any mathematical inaccuracies.

**13. Results:** The contest results, as announced, will be final.

**14. Awards:**

**Junior Division**

Champion Team – Premium, Banner, Rosettes  
Reserve Champion Team – Premium, Banner, Rosettes  
3rd – 5th Place Teams – Rosettes

**Senior Division**

Champion Team – Premium, Banner, Rosettes  
Reserve Champion Team – Premium, Banner, Rosettes  
3rd – 5th Place Teams – Rosettes