



Your challenge - to design a robot (or team of robots) to perform to a sound track for a minimum of one minute and not more than two minutes.

RoboCup Junior (New Zealand) THEATRE RULES 2017

Your task is to use your programming, engineering and creative skills together to entertain, delight and thrill the audience. We expect your robot to be designed and decorated to match your theme. The challenge is intended to be as open ended as you choose to make it.

Students should participate in one of two divisions, 'Junior' or 'Senior.' Junior is for students up to and including Year 8, and Senior is for Year 9 and above.

1. The Robot

- 1.1 Robots can be of any size, number of motors, microprocessors or sensors.
- 1.2 The competition is open to any platform you wish.(LEGO, Arduino, Picaxe, Vex, Fischer Technic, TBot, basic stamp etc)
- 1.3 A maximum number of **4** robots may be used in the performance. A robot is defined as an autonomous construction which is running a program.
- 1.4 The construction of the robot should be well-considered, and where appropriate should use mechanisms such as gears, pulleys, levers and linkages to achieve the movements desired.
- 1.5 Teams are encouraged to use sensors on each robot to receive useful information about its environment.

2. The Stage and Performance

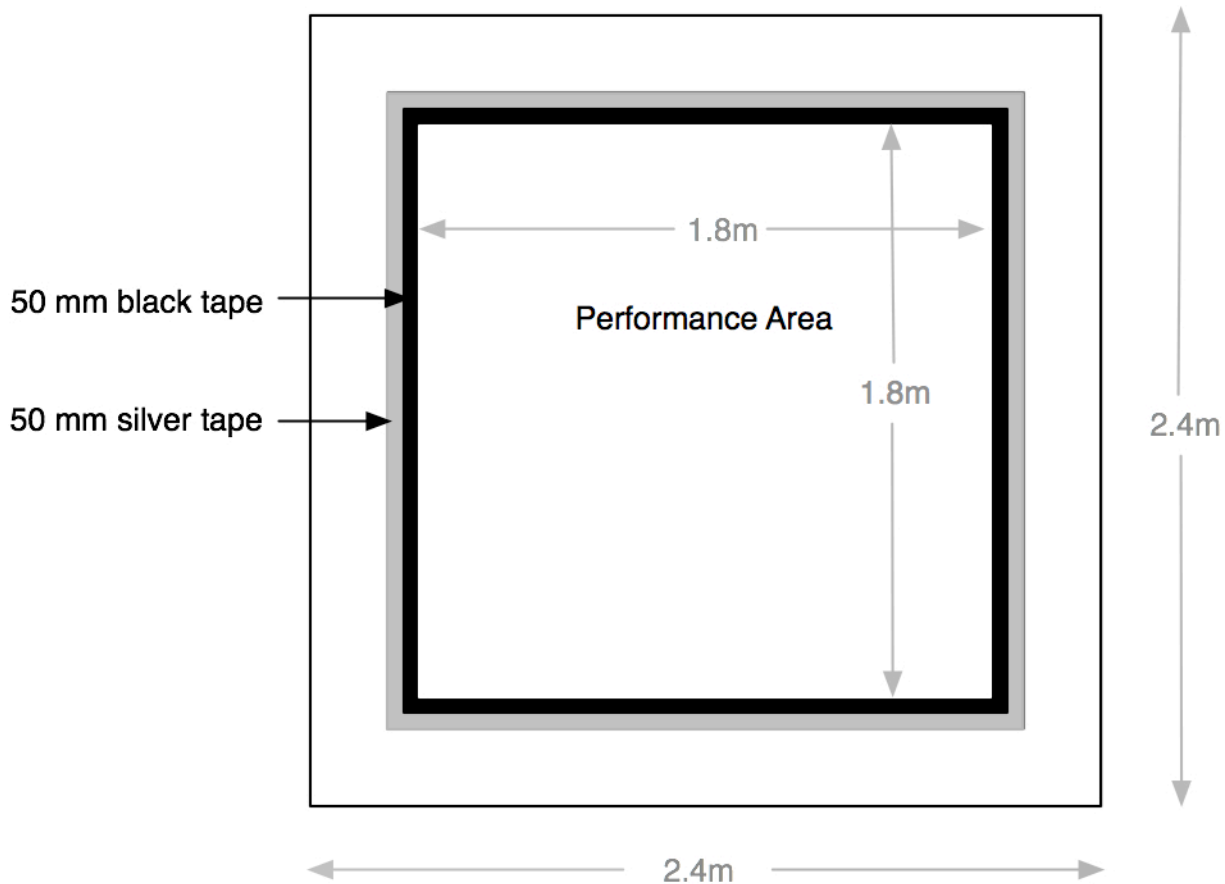
- 2.1 The performance must be longer than one minute but less than two minutes. The sound track will be stopped after two minutes.
- 2.2 The total performance time allowed per team is 6 minutes. This includes prop and robot set-up time, the performance of 1 to 2 minutes, and any re-starts (see section 9). Judges will not mark any performance after the six minutes has passed, and will score based on what was seen before that time expired. Marks will be deducted for going overtime.
- 2.3 The stage will be a square of unpainted **MDF** measuring 2.4 x 2.4 metres. A 1.8 x 1.8 metre performance area will be marked centrally inside the 2.4 x 2.4 floor using a line of 50mm black duct tape.

Immediately outside the square of black tape will be a square of 50mm silver duct tape. This will allow robots to tell which direction they have approached the boundary line from.
- 2.4 There should be no significant dark marks within the performance area. Competitors and officials must not walk across the performance area in shoes. Socks are preferred to bare feet. Teams are welcome to cover any mark on the performance area with white masking

tape. This tape may be left in place after their performance. Taping is not part of the 6 minutes performance time.

- 2.5 While every effort will be made to provide a flat, smooth surface, a team's robots should be prepared to cope with variations up to 3mm in height. Any join between mdf sheets will be covered with white masking tape.
- 2.6 Teams may provide their own Performance Area floor surface, as long as such flooring fits within the 1.8 x 1.8 m boundary. This surface may be marked or decorated.
- 2.7 Teams may request 2 minutes for light reading / calibration immediately prior to their performance. This is not part of the 6 minutes performance time.
- 2.8 Teams are encouraged to use sensors or other devices to prevent their robot from leaving the performance area. A robot will be considered to be 'out' if **all parts** of the robot have crossed the **inside** edge of the **black** tape line. Penalties will apply for each time a robot leaves the performance area.
- 2.9 Teams will be penalized (see Judges' Performance score sheet) for any contact made with their robots once the performance has begun, unless this is an intended part of the choreography.
- 2.8 Members of the team may dance/interact either inside or outside the designated area. Any human interaction will be considered as props.

RoboCupJunior NZ Stage Plan for Theatre Competition



3. Lighting, props and special effects- (see also 5.1)

- 3.1 This will only be permitted if the equipment is operated by a team member.
- 3.2 Equipment should have been assembled/ developed by team members. Judges will reward more highly a team who uses self-built props and equipment, over a team who uses 'off-the-shelf' items.
- 3.3 Scenery and props are permitted.
- 3.4 Set-up time is part of the six minutes allowed per team for the total performance (see 9.4)

4. The costume

- 4.1 The costuming and/or decoration of robots is encouraged, and will be rewarded in scoring.
- 4.2 Commercial elements such as dolls, soft- toys, commercial costuming are permitted. However, higher marks will be allocated to teams whose robots feature student made / assembled elements.
- 4.3 Any costume should be in keeping with the theme, enhancing the robot's appearance or performance.
- 4.4 Costumes are to be mainly the students' own work.

5. Team T- Shirts + Costumes

- 5.1 If costumes or Team-designed T-shirts are worn, they will be considered as props and will be rewarded in scoring.

6. Sound track

- 6.1 The sound track should not be longer than 120 seconds. MP3 is the preferred format for RCJNZ events
- 6.2 The sound track should be delivered to the organisers one week before the competition or as indicated by the event organisers. Competitors should also bring a copy of their sound track with them to the event.
- 6.3 The sound track must be labelled with the team name.
- 6.4 In the case of a malfunction see **section 9: Restarts**
- 6.5 No part of the sound track may be of a suggestive, offensive or violent nature, vulgar, discriminatory or prejudicial as decided by the judges. Any team whose sound track breaches this requirement will not be allowed to perform to that sound track.
- 6.6 Teams are advised to start the sound track first, and then synchronise the robot/s start/s.

7. Mechanical Malfunction

- 7.1 Robots which lose parts, become stuck, fall over or mechanically malfunction may be righted and quickly repaired by a team member. (A penalty is incurred for each malfunction – see judges' performance score sheet.)

8. Programming-Computers

- 8.1 Robots are not to be controlled by remote-control devices, but robot-to-robot communication is encouraged.
- 8.2 In the case of a complete malfunction in their program, the Team Leader indicates to the performance judge that the program has malfunctioned and may request a re-start. The following team must be ready to take the stage while the malfunction is fixed. A penalty will be incurred by the team with the malfunction. See re-starts

9. Re-Starts

- 9.1 If the robot experiences a mechanical or programming malfunction, the team leader must request a re-start immediately by signalling **clearly** to the judges. The team leader must choose whether to immediately have another go, or try again later in the day.
- 9.2 Another team may be permitted to perform while the previous team cures their malfunction.
- 9.3 A total performance should not take longer than 6 minutes in total: this includes initial set-up, re-starting music and /or re-starting robots.
- 9.4 If more than 2 restarts are necessary, the team leader should talk to the judge about the best course of action
- 9.5 The competition organisers will do their best to assist teams get good performance conditions, and organisers should be alerted if any issues are arising BUT competitors need to remember that robots cannot control their environment, and a well-programmed robot will cope with a variety of conditions.
- 9.6 In the spirit of the competition, and if time permits, any team which has experienced difficulties getting a good performance within their 6 minutes may be offered further opportunities to perform for the audience rather than the judges.

10. Behaviour/Sportsmanship

- 10.1 It is expected that all participants, students and mentors will respect the aims and ideals of RoboCup Junior. In turn, the volunteers, referees and officials will act within the spirit of the event to ensure the competition is competitive, fair and most importantly fun.
- 10.2 Competitors not adhering to these rules may incur loss of points from their interview score. This is at the sole discretion of the Judges/ Theatre Co-ordinator.
- 10.3 It is not whether you win or lose, but how much you learn that counts.

11. Protests

- 11.1 Only the adult in charge of the team may lodge a protest with the organisers.
- 11.2 The protest must be made in writing not more than 30 minutes after the performance, and should be lodged with the Theatre Co-ordinator and referred to the judges for action.
- 11.3 The written protest must include all relevant facts and corroborative evidence.
- 11.4 The protest will only be heard if it alleges breach of the rules: please indicate the rule/s that you believe have been breached.
- 11.5 Whilst every effort will be made to resolve the protest on the day, it must be understood that some protests may take longer and will not necessarily result in a changed outcome.

12. Scheduling

- 12.1 Every effort will be made to adhere to the pre-advertised running schedule, however due to late entries and un-foreseen circumstances there may be some variation. Teams must be available for interview/performance up to 30 minutes prior to, or after, the advertised times.
- 12.2 It is expected that all teams will be in attendance throughout competition day to support all performances.

13. Areas

- 13.1 Various areas are provided for different activities: teams should take care to be in the correct area at the appropriate time.
- 13.2 Each team will be provided with a space, and access to a power outlet. This area will be referred to as "The Team Area".
- 13.3 An 'Assembly Area' will be designated. This is where teams should move to while waiting for their performance. An additional Assembly Area may be designated near the Interview Area for team members to wait to be invited in for their interview.
- 13.4 Parents, supporters and mentors are *not* permitted in the Assembly Area(s) or Pits. Breaches of this rule will result in the team receiving a yellow card. A further breach may result in the team receiving a red card, and being excluded from the competition.
- 13.5 Teams who are not ready in the assembly area for either interview or performance may be eliminated from the competition by the Theatre Coordinator. The full team must be present.

14. Team Interviews

- 14.1 The full team must present for the interview. The Team Manager is not required.
- 14.2 The interview will take about 10 minutes.
- 14.3 The robot/s must accompany the team.
- 14.4 The robot must be functioning and in performance condition.
- 14.5 The team should bring a clear print-out of the program they will use in their performance. Alternatively, the team may have their lap-top **on and displaying their program** in readiness for their interview.
- 14.6 All team members are invited to answer in the interview, not just the Team Leader, though the Team Leader may like to co-ordinate the interview.
- 14.7 Points will be given for those teams able to provide some form of learning journal, that shows the evolution of their entry and confirms it as being their own work. Refer to the judging criteria.

15. Parental / Mentor Assistance

- 15.1 Only the team is permitted in the Teams' Assembly Area, Interview Area, or on the stage. See 13.4.

16. Awards

- 16.1 In the interest of economics, prizes and certificates have been allocated on the basis of 4 members in a team. Additional items may be required to be sent at the discretion of organisers after the event.
- 16.2 Any other awards or prizes are at the organizers' discretion.
- 16.3 Whilst not a rule, all competitors are encouraged to stay for the finals and awards ceremony to acknowledge the achievements of other teams, the work of the organizers and the contribution of sponsors; thus encouraging good sportsmanship.

17. Scoring and Exhibition of Excellence

- 17.1 Scoring of teams will be made according to the criteria on the judges' score sheets (see separate file).
- 17.2 Teams will be placed on the basis of their scores in both the performance AND interview judging.
- 17.3 Performances will contribute 60% of a team's total score, and interview 40%. These proportions will be determined by the totals for each of the performance and interview score sheets.
- 17.4 Selected teams may be invited to present a 'Demonstration of Theatre Excellence' as part of the other league Finals. These will be selected on the basis of quality of performance, the number of entries, all at the discretion of the organisers. They will not contribute towards any scoring.