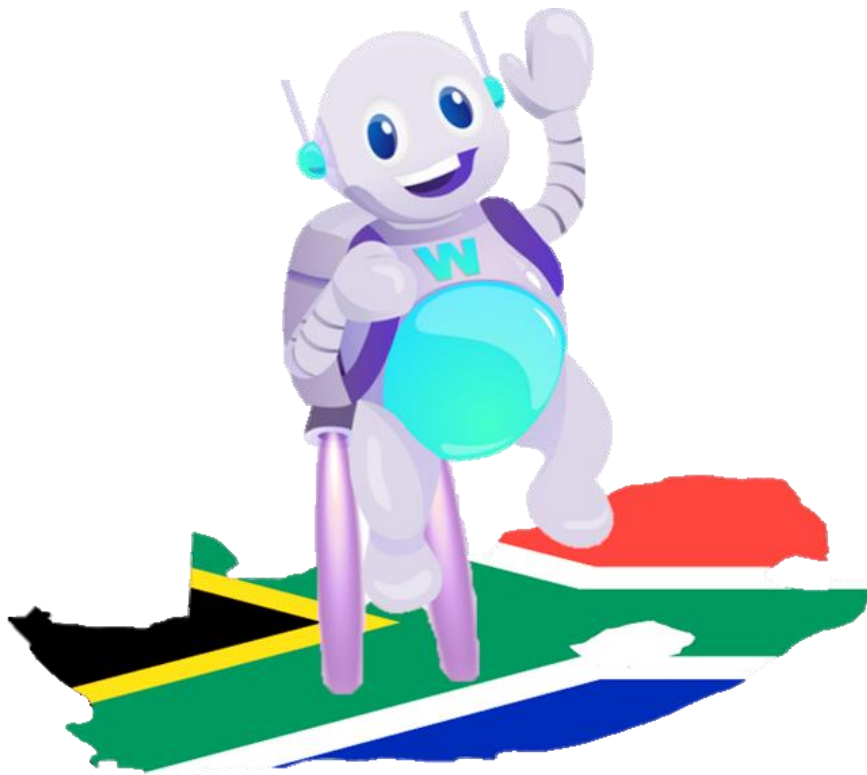


WORLD ROBOT OLYMPIAD™



SOUTH AFRICA



Beginners Guide

Introduction

Welcome to the World Robot Olympiad South Africa (WRO SA).

This document is designed for anybody wanting to compete in the World Robot Olympiad (WRO) and is designed for both new and old coaches and participants. In this document you will find useful information from what you will need for your first team to what you can expect when competing in a physical WRO SA event. The information is specific to the competition in South Africa and the competitions offered to our South African participants. We hope you find this document useful in answering any questions you may have about the WRO.

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1. What is the World Robot Olympiad?

The World Robot Olympiad (WRO) is an international competition comprising of 4 competition categories for children and young adults from the ages of 8-19 years old.

These 4 competition categories all focus on teams using a robotic solution to solve a problem based on a theme with some categories restricted to only using LEGO pieces while others are open to any hardware and programming software available. Each category may have their own age group requirements which must be adhered to. The competitions range from table-based challenges where robots need to score as many points as possible in the shortest amount of time to science fair like projects to self-driving cars and even robots playing sports!

WRO teams are made up of 2 to 3 members and must have a coach whose role is to guide the team and not to build or program for them, all work must be done by the team members themselves.

Winning teams of the WRO South Africa National final are offered a place to represent South Africa and compete against over 90 other countries in the International Final hosted by a different country each year.

2. WRO Categories

This section is broken down into two parts:

1. International WRO Categories – Categories in which teams compete for entry to the WRO International Final.
2. South Africa Only Categories – Categories without an International Component or International Final and only take place in South Africa.

2.1 International WRO Categories

2.1.1 Robo Mission Category

Robo Mission Summary

- Table Based challenges – teams program a robot to complete tasks on a competition table with competition mats
- 3 age group categories
 - Elementary 8-12 years
 - Junior 11-15 years
 - Senior 14-19 years
- Only LEGO parts are allowed to be used
- Any programming software/language may be used
- Teams arrive with a robot and program pre-built and ready to compete
- The robot must complete the task in under 2 minutes
- Maximum size of the robot is 25cm x 25cm x 25cm



Robo Mission In-Depth

The Robo Mission category is the most popular competition category in South Africa and Internationally with the highest participation. The category comprises of 3 separate age groups, all team members must meet these age group requirements to participate in an official WRO South Africa Provincial or National competition. The age groups are as follows:

- Elementary 8-12 years
- Junior 11-15 years
- Senior 14-19 years

The Age Group into which a team member falls is based on the age of the team member in that competition year, for example if a team member will be turning 13 years old in the year of the competition, the team member is only eligible to compete in the Junior Age Group category.

For the Robo Mission Category teams design, build and program a robot to complete a set of tasks on a WRO competition table and mat. There are two important competition rule documents, 1. The General Rules and 2. The Game Rules. The general rules are the most important as this rule set explains the requirements for the robot build, the rules teams must abide by and the competition format. Coaches and team members should understand these rules completely before entering the competition. The Game rules are the rule sets for the actual challenge teams need to complete, as well as the building instructions for the game elements, each age group has its own Game rules, but the general rules apply to all age groups.

To compete in the Robo Mission category teams will require a LEGO Robot Spike, EV3 or NXT. Any other LEGO elements may be used to build the robot. Teams will also need a laptop or tablet to program their robot. Teams will use the same robot throughout the year and will require a practice space and time to prepare their robot for the competition. Teams must each design, build and program their own original robot. Teams that have identical or similar robots as one another will be disqualified and not allowed to participate in a WRO Competition. Robots that are also identical or similar to designs found online will also be disqualified and not allowed to participate in the WRO competition.

The Robo Mission Category features a Randomisation and a Surprise rule. The randomisation is conducted by the head judge during the quarantine period. Randomisation is when the head judge draws randomly the placement of the game objects on the table, this randomisation will be the same for all the teams for 1 scoring round, each consecutive scoring round a new randomisation is drawn for all teams to attempt during their scoring run.

The Surprise Rule is a special rule given to teams on the day of the competition, the rule may take many forms and require teams to move a new game object or have a current game object moved to a new location. Teams do not have to attempt to complete the surprise rule, the rule must always be present on the game table.

There is a specific competition format which the Robo Mission Category follows for events.

1. Teams arrive with a pre-built robot and program.
2. The surprise rule is announced and handed to teams.
3. Teams are given time to practice and make adjustments to their robot on the competition tables.

4. Teams must place their robots into the quarantine area for their models to be checked by judges – all Bluetooth or Wi-Fi communication must be turned off.
5. The head judge will randomise the game elements during quarantine, all the competition tables will have the same randomisation for all teams for the first scoring run.
6. Teams are called one by one to their competition table by judges to run their robots for an official scoring run with the randomisation
7. Teams complete the competition run within 2 minutes and place their robot back into quarantine
8. Teams are then given another practice time and scoring rounds following the same procedure from point 3 to 7 as above.

2.1.2 Future Innovators Category

Future Innovators Summary

- Project based on a theme
- 3 Age Groups
 - Elementary 8-12 years
 - Junior 11-15 years
 - Senior 14-19 years
- Not restricted to LEGO elements
- Any programming language can be used
- Multiple robots can be used
- Teams present their projects to the judges
- Teams must present a working robot to be eligible for the National Final



Future Innovators In-Depth

The Future Innovators category focuses on teams creating robots to solve a problem they have identified within a theme. Teams must build, design, research and present a robotic solution for the problem they have identified. This category is very similar to a science fair where teams present their solution to a panel of judges who then decide the winner based on a rubric of criteria that must be completed.

The category comprises of 3 separate age groups, all team members must meet these age group requirements to participate in an official WRO South Africa Provincial or National competition. The age groups are as follows:

- Elementary 8-12 years
- Junior 11-15 years
- Senior 14-19 years

The Age Group into which a team member falls is based on the age of the team member in that competition year, for example if a team member will be turning 13 years old in the year of the competition, the team member is only eligible to compete in the Junior Age Group category. Each future innovators age group has its own judging rubric and teams must submit a portfolio and video before the provincial, national and international competitions.

Teams must prepare their project in their designated booth of 2m x 2m x 2m. Teams must display their poster, models and video within their booth and present everything to the

judges when they arrive. The presentation to judges takes up to 10 minutes in which time teams must present their project, demonstrate their working models, and answer questions from the judges.

In South Africa, teams will be given feedback on their projects to help prepare them for the National final, teams that the judging panel select will be invited to participate in the National final in their age group. The feedback from judges will help the team to improve their project and score higher, it is strongly suggested that teams follow the advice from the judges on how to improve their project.

2.1.3 Robo Sports Category

Robo Sports Summary

- Age: 11-19
- Team size: 2-3 people guided by a coach
- Hardware: LEGO® based
- Software: Free choice
- Maximum robot size: 20 x 20 x 20 cm
- Characteristics: Teams design 2 robots that compete with robots of another team.
- Current Theme: Doubles Tennis



Robo Sports In-Depth

The Robo Sports category can be a fairly difficult first time category to enter as the robot design and code required to compete competitively is quite advanced for most beginners.

The Robo Sports category introduces a fun and exciting game where two teams each have two autonomous robots on the field playing a sports game. The robot needs to be built from LEGO® materials, including controller, motors and sensors (MINDSTORMS® NXT or EV3, SPIKE PRIME or Robot Inventor). In addition, teams use a camera of their choice.

The game changes every 3 or 4 years and the current game is Double Tennis. Each year little changes are introduced to motivate the students to keep on developing their robots.

This category has a single age range from 11-19 years old in the year of the competition. Teams build and program their two robots and make sure they meet the size requirements of the category before bringing them to the WRO SA Provincial competitions. The Robo Sports category in South Africa can be run in two ways by referees depending on the sport selected for this category.

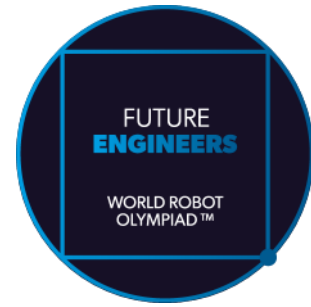
1. Round robins – Teams play one another an equal number of times, accumulating points as they win (or none if they lose). In a round robin tournament, the team with the best record is the winner.
2. Knockouts – Teams play against each other, the winning team moves on to the next competition round.

If you would like to compete in this competition category please read the rules very carefully for information on what is allowed within the category and what is not allowed.

2.1.4 Future Engineers Category

Future Engineers Summary

- Age: 14-19
- Team size: 2-3 students guided by a coach
- Hardware: Free choice
- Software: Free choice
- Maximum robot size: 30 x 20 x 30 cm
- Characteristics: Advanced robotics following current research trends.



Future Innovators In-Depth

Future Engineers is an exciting category for older students. Designed to bring the current research challenge into schools and teach students an engineering workflow by solving real-world-problems. Teams can use any robot, controller and materials that are in line with the regulations.

The game changes every 3 or 4 years and the current game is all about autonomous driving. The challenge is to build a robot with a steering drive that can drive around a track autonomously. Each year little changes are introduced to motivate the students to keep on developing their robots.

The future engineers category is the most advanced and smallest category in South Africa, few teams participate due to the resources, time and level required to compete competitively. There is one age range for this competition category 14-19 years old in the year of the competition.

The WRO Provincial competition is dependent on the number of entries into the category. Due to the small number of participants there is often no provincial event for this category, instead teams can arrive as a showcase and display their work as well as receive feedback and input from judges within the category. Teams can then further receive expert assistance for their projects through the WRO SA National Organiser who will put them in touch with experts in the field of mechatronics and robotics, these are often people working in the industry or lecturers from universities.

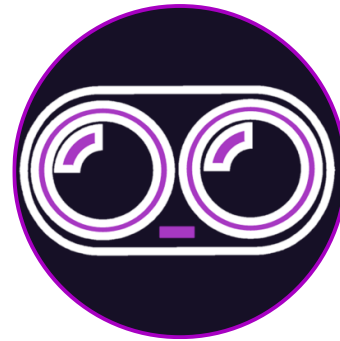
To enter the National competition and be eligible for the international competition teams must meet the requirements and expectations of the WRO SA experts who will review the teams work and robot and put team names forward for possible entry to the international final.

2.2 South Africa Only WRO Categories

2.2.1 Explorer Category

Explorer Category Summary

- Explorer Category
- 2 Age Groups
- Age: Lite 8-12 years | Prime 11-16 years
- Team size: 2-3 people guided by a coach
- Hardware: LEGO® based
- Software: Free choice
- Maximum robot size: 25 x 25 x 25 cm
- Characteristics: Entry level challenge. Teams design a robot to complete basic challenges on the Robo Mission Elementary mat.
- Participants in this category are only allowed to compete once per age group.



Explorer Category In-Depth

The Explorer Category is a South African designed challenge with no international final component. There are two Explorer competitions, Explorer and Explorer In-House this section will discuss the Explorer competition. The challenge is designed for teams new to Robotics or the WRO competition. Teams build and program a robot to complete tasks on a game field. Teams arrive at the competition with a prebuilt LEGO robot and need to reprogram their robot on the day of the competition.

There are two age group categories:

Explorer Lite – 8-12 years (Simplified rules and scoring, game elements only need to be partially inside scoring zones to score points)

Explorer Prime – 11-16 years (game elements must be completely inside scoring areas for teams to score full points)

The Explorer category is the perfect beginner category and offers teams and coaches an opportunity to participate in a robotics competition which is designed around fun and personal achievement rather than the competitiveness of the official WRO Categories. The robotics challenge requires teams to complete basic tasks on a competition table, using sensors motors and strategy to score as many points as possible. Teams are scored differently in explorer where instead of having a set scoring round, teams decide themselves when they would like to score by informing the judge assigned to their table. Teams have between 3 to 4 scoring opportunities and must score higher than their previous score for the judge to record the run on their score sheet. For example a team in their first scoring run scores 120 points, they then ask the judge to score a second run where they score 80 points, the judge will not record this score as their previous run was higher and not using the teams 2nd scoring slot.

For the Explorer category the teams with the highest score will be invited to participate in the National final.

2.2.2 Explorer In-House Category

Explorer In-House Category Summary

- 2 Age Groups
- Age: Lite 8-12 years | Prime 11-16 years
- Team size: 2-3 people guided by a coach
- Hardware: Free choice
- Software: Free choice
- Maximum robot size: 25 x 25 x 25 cm
- Characteristics: Challenge run by coaches, teachers and parents in their own training space. Teams submit scores to the WROSA website and receive certificates based on their highest score.



Explorer In-House Category In-Depth

The Explorer In-House competition uses the same explorer competition mat and game rules however the general rules and competition style are different. For the Explorer In-House competition there is no hosted physical event by WRO SA and no National Final. Instead teams compete in their own club or school and are scored by their coach whom submits their scores to the WRO SA website to receive certificates of achievement based on their teams highest score achieved. The Explorer In-House category is also open to any hardware and program meaning even non-LEGO robots can be used to participate. This category allows teams around the country to participate in a competition without having to travel to events.

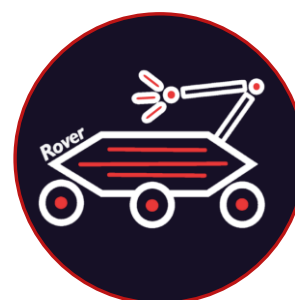
This competition runs for a week in the year where coaches can submit their teams scores to the WRO SA website. Two weeks before the competition starts a special rule document is released with a surprise element to be added to the table to encourage critical thinking and problem solving and ultimately to make the competition more fun. This special element could not be made from LEGO but an everyday object such as a can, ball or bottle.

Teams receive a certificate of achievement based on the score the team achieved.

2.2.3 Rover In-House Category

Rover In-House Category Summary

- Age: 6-10 years
- Team size: 2-3 students guided by a coach
- Hardware: Free choice
- Software: Free choice
- Maximum size: 25 x 25 x 25 cm
- Characteristics: The Rover Challenge requires teams to complete basic tasks on the game mat using their LEGO WeDo or LEGO Spike Essential Robot.



Rover In-House Category In-Depth

The Rover Challenge is an in-house only challenge without a national or international component. Teams compete in their own school / learning environment and submit only their team scores to the WRO SA website. Teams then receive a certificate of achievement based on their highest score achieved during the competition time.

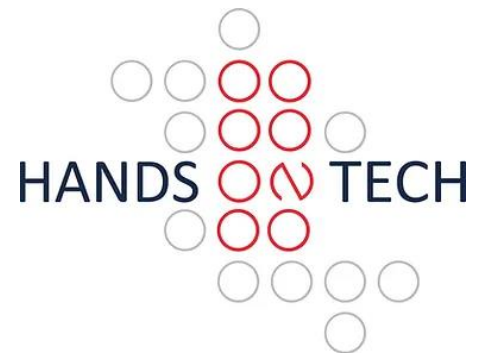
The Rover In-House challenge is very basic and designed for younger competitors to compete and have fun. The emphasis for this challenge is on learning and to encourage teams to achieve and to make robotics fun and interactive for the young competitors.

3. WRO Equipment

Some of the WRO competition categories require specialised resources or equipment to participate in the category, for example in the Robo Mission category you will require a mat and elements to practice and compete successfully.

All WRO resources and LEGO Robotics equipment can be purchased through Hands on Technologies the official LEGO Education provider for Southern Africa. Hands on Technologies will be able to assist you with advice on what is needed to start in the WRO as well as advise you on what products are best suited for the competition. They also offer teacher training in LEGO Robotics and other LEGO Education resources.

Visit Hands on Technologies website www.handsontech.co.za or email info@handsontech.co.za for more information.



4. Registration and Fees

4.1 WRO Registration Process

For teams to compete at a WRO SA Provincial competition or the WRO SA In-House competition teams need to be registered with WRO SA.

Team registration in South Africa normally opens on the 1st of April in the competition year and closes the 30th of June the same competition year. An online link will become available on the WRO SA website (www.wrosa.co.za) when registration opens. Coaches must register their teams during this time as when the registration deadline closes teams will have to wait for the next year to compete in the WRO SA competitions. It is best to register a team early as some provincial event venues may become full and the National Organiser may start assigning teams to different venues to cope with the overflow.

4.2 What you will need to register a team.

To complete the online team registration, you will need to have some information available about your team members and the category you are entering:

1. **Category Name** – You will be required to select your teams category, this is the competition you are entering your team into, for example the Robo Mission category. Some competition categories may have competition dates different to other categories, for example in Gauteng the Explorer Provincial competition usually takes place on a Friday while the other WRO events take place on the Saturday.
2. **Age Group** – You will then need to select the appropriate age group for your team members, this is based on the age the participant is turning in the year of the competition, for example a team member who is turning 13 years old can only compete in the Junior age group category.
3. **Team Name** – This is the team's identity and how they will be referred to during the competition as well as the name that appears on the Provincial and National ranking lists. It is best if each team comes up with their own unique team name as this creates a unique team identity, fosters unity and is a fun component of the WRO

competition. This is also a name that is often carried from one year to the next by the team members. Team names are restricted to a maximum of 25 characters including spaces.

4. **Birth Dates** – You will be required to provide each team members date of birth, this is to ensure the team meets the category age group requirements. Teams must participate in the correct age group.
5. **Invoice Information** – This is information specific to the generation of a team invoice. You will need the below information to complete the registration form. Invoices are sent directly to the coach's email address.
 - i. School/Club Name
 - ii. Physical Address
 - iii. Postal Address
 - iv. VAT Number (if required by your schools accounts department)
 - v. Order Number (if required by your schools accounts department)

4.3 Fees and Invoices

4.3.1 Fees

To participate in the WRO SA Provincial events teams are required to pay a registration / entry fee. This fee amount depends on the competition you are entering and the number of team members in a team.

For all official WRO Provincial events the fee is charged per team member, there is a maximum of 3 team members allowed per team. For example if the fee to register a team member is R300 and your team consists of three (3) team members you will be charged R900 to enter your team into the WRO Provincial competition.

For the In-House competitions there is a single registration fee for your school or club. This means the school or club registers and pays a single registration fee to enter an unlimited number of teams into the In-House competition. **NB!** In-House competitions have no National Final and no physical events. Coaches run their own competition in their school/club environment and submit scores to the WRO SA website during the scoring week.

If teams qualify for the National Final, there may be a smaller registration fee to participate in this event and compete for a place in the WRO International Final.

4.3.2 Invoices

Once you have registered your team you will receive an automatic invoice specific to the team you registered. This means if you register 3 teams you will receive 3 invoices sent to the coach's email provided on the registration form. WRO SA can provide a more concise/consolidated invoice of all the teams you have entered to make payment/admin easier. This consolidated invoice can be requested by emailing wro@handsonetch.co.za once you have registered all your teams. Please provide the following information when requesting this invoice.

1. Coaches full name and surname that was used to register the teams.
2. Coaches email address
3. School/Club Name
4. Number of team members entered into the competition.

All Invoices must be paid electronically no later than two (2) weeks (14 days) before your chosen competition date. Teams that have not paid the invoiced amounts by this time may

not be allowed to enter the competition venue and compete unless by prior arrangement with the WRO SA National Organiser.

Please use the invoice number found on the invoice as the reference number when making a payment to WRO SA.

4.4 Mistakes with Registration

Sometimes we all make mistakes. If you have made a mistake with your registration, please email wro@handsontech.co.za and give as much information as possible about the mistake. Please see some common mistakes below:

1. Entered the wrong team details – misspelled names, wrong birth dates.
2. Entered the wrong category.
3. Entered the wrong event/provincial.

5. Entering your first WRO Competition

Entering your first WRO SA competition can be quite daunting. In this section we will cover what you need to prepare with your teams to give you and your teams the best possible WRO competition experience.

5.1 Before the WRO Event

Before the WRO event you are attending you will need to make sure a few things are packed and ready. For ease we have created a checklist of common items that you will need to compete at any WRO event from the Provincial event all the way to the International Final. We strongly advise labelling all your items with the school/club's name.

No.	Item	Description	Check
1	Teams Robot	Fully built and battery fully charged	
2	Programming Device	Laptop, PC, Notebook, Tablet	
3	Device Password	The team must know the password to access the programming device	
4	Download Cable	Cable to transfer program from device to the robot	
5	Robot Battery	A fully charged battery	
6	Extra Robot Battery	A full charged extra battery	
7	Team Name	The team must know their team name	
8	Extra Pieces	You may require extra pieces, motors and sensors	
9	Battery Charger	A charger to charge the robot battery when not in use	
10	Multiplug	Your own multiplug to plug in your programming device and robot charger	
11	Device Charger	The charging cable for your programming device.	
12	Teams Research	If Future Innovators bring your poster, and research portfolio to the event	

5.2 The WRO Event Day

When you arrive at a WRO SA event there are a few things that need to be completed before you can sit down and watch your teams perform in the competition.

1. Complete the sign in at the WRO SA registration table. When you arrive with your team/teams you must go to the WRO SA registration table and sign your teams in, this helps to inform the organiser if any teams are missing or if there are any team irregularities.

2. Check the seating guide and make sure teams know their seating position. Each team is allocated seats at the WRO event. This is where the team must sit during the competition and the table the team must participate on if Explorer, Robo Mission, Robo Sports or Future Engineers. Future Innovators teams are allocated a “booth”, this is usually a table with poster board behind for teams to display their projects. Seats are usually assigned using a basic format of a letter and number. The letter refers to the row the team sits in, and the number is the position within that row. At most WRO SA events tables have been marked to identify the row and table number. Only once the competition area is opened will teams be allowed to place their equipment in the competition area.
3. Snacks and Refreshments. Most WRO SA competitions have a lunch/refreshment break. During this time, it is advised that teams have time to eat something and relax before continuing in the competition. Some venues will have food stalls available where coaches and teams may purchase food for their teams, some venues may offer pre-purchasing of food for their teams, this is usually done directly through the competition venue and not through WRO SA. During the break all teams leave the competition area this puts pressure on the food stalls, WRO SA strongly advises either bringing your own food items, pre-ordering food or purchasing food from food stalls before the competition break to avoid a rush. No food or drink items are allowed at competition tables, the WRO SA organisers will have food or drink tables set up for teams to place their items on if they may need something to eat or drink in the competition area.
4. Teams with team members that require medication or are feeling unwell must make themselves known to the judges on their table and the age group head judge of the competition category, this is so judges are aware and may assist with making sure the team member is looked after and given any special attention if needed.
5. During the competition coaches and spectators are not allowed to communicate with their teams, any communication that must happen must be done directly through the age group head judge and the teams coach, not through the judges or the teams. Teams communicating may be investigated and possibly disqualified if found in breach of the WRO rules and ethics.
6. No flash photography. Using a flash or light will affect the robots’ sensors. WRO SA strongly advises that spectators do not use a flash or light as this could cause the teams robot to malfunction.
7. Be available for your team. In some cases, the judges may request to speak to you. Please make sure you are available in these cases.
8. Enjoy the competition. A WRO SA event is an opportunity for teams to showcase what they have been working on in the months leading to the WRO SA Event. WRO SA encourages all spectators and coaches to celebrate the achievements of not only their own teams but all teams in the venue. The teams participating are under a great amount of pressure and creating a fun, friendly atmosphere will help to alleviate these pressures. As a coach have fun, there is nothing more you can do to assist your team and now they are on their own, let them perform and have fun.

6. WRO Officials and Judging

All WRO SA events will have several WRO Officials and Judges. All of these people are volunteers and assist WRO SA because of the passion they have for robotics and the WRO competition, without these amazing individuals this competition would not be possible.

6.1 The role of a WRO Judge

A judge in the WRO performs a vital role in the running of the competition and is the first point of contact for your teams. Each competition table will have two or more judges assigned to the table. These judges work together to score the teams assigned to their table row. The judges will not only score the teams but must also look after and organise the teams on their rows. WRO SA encourages all judges to be friendly, thoughtful and welcoming to all teams to provide the team with the best possible WRO experience we further encourage all of our judges to celebrate all teams' successes and encourage teams that are struggling to keep going and recognise their strengths.

6.2 Judging process

Robo Mission, Future Engineers & Explorer

During the competition teams will be called to their competition table during the scoring rounds where they will collect their robot from quarantine and place it on the competition table following the judge's instructions. When ready the team runs their robot and when the robot stops, or the time expires the judge will score the final position of the elements. Teams must touch the robot to indicate that their program has finished, teams must also not lift the robot off of the table until the judge gives them permission to do so.

The judges will score the position of the competition elements together, once scoring is complete the team must sign the score sheet to indicate they accept the score. Teams that disagree with the scoring must respectfully tell their judges and not sign the score sheet. In this case the head judge will be called, they will then make a ruling on the table. The judges and Head Judges rulings are final.

Coaches that disagree with a score or complaints about judges must speak directly to the Age Group Head judge and not with the table judges while the team is being scored. Again, the Judges and Head Judges ruling is final.

Future Innovators and Robo Sports

These two categories have different scoring methods from the above. For Robo Sports teams compete against each other on the same competition table. For Future Innovators teams present their projects to a judging panel who will then give them feedback to better prepare and improve on their projects.

There are three (3) judging titles at all WRO SA events.

1. Table Judges – these are judges who work directly with teams on the competition tables, they are responsible for scoring a teams scoring run and ensuring the team is looked after.
2. Age Group Head Judges – These are individuals in charge of organising the table judges. Their role is to direct their age group category judges and provide a communication point between coaches, judges and teams. The Age Group Head Judges decision can over-ride any table judges decisions.

3. The Category Head Judge – This individual directs all of the Head Judges and Table Judges in a category. Their role is to ensure everything runs smoothly and in accordance with the official WRO rules. The category Head Judge is the only judge that may officially disqualify a team after consultation with the appropriate Age Group Head Judge and the table judges assigned to that team. The Head Judges decisions are final and will always be in consultation with the Age Group Head Judge. The Head Judge is also a communication point between coaches, teams and judges.

6.3 Becoming A WRO SA Judge

4. WRO SA prides itself on the calibre and expertise of all South African judges, producing some of the best and most well-trained judges in the world with multiple years of experience judging in the WRO international final. We encourage anyone new to the competition coaches specially to register as a Judge and experience the competition from a judging perspective. This will not only provide you with knowledge of the judging experience but also what issues teams have on tables, what pressure teams and judges are under and an opportunity to learn from teams. This will better help you to prepare your own teams for future WRO competitions.
5. All judges undergo a training process and new judges are purposefully paired with a judge with International or many years of National experience to learn the judging process. Judges assist one another on their competition table and take direction from the Age Group Head Judge and Category Head Judge. If a judge is not sure of their decision or what to score, they speak to the Age Group Head Judge who will help to direct and make a final decision.
6. To register as a judge, you must have some knowledge of the competition rules for that year in the category you select and be available for all meetings and trainings. You must also arrive at the competition venue early and attend the Judges meeting.
7. Basic guidelines for judging:
8. Judges may never assist a team with programming or the building of their robot.
9. Judges must be fair to all teams and judge each team equally.
10. Judges must be friendly, welcoming, and understanding.
11. Judges must encourage teams, celebrate in their successes, and provide an overall positive experience to all teams.
12. Judges must listen to and respond to any team requests, complaints, or compliments. In circumstances where the judge is unsure of the answer, they must call the Age Group Head Judge or Category Head Judge for assistance.
13. Judges must adhere to all decision made by the Age Group Head Judges and Category Head Judge.
14. One table judge must always be at their competition table during the practice rounds.
15. All judges must be present for all scoring rounds and quarantine.
16. Have fun. Judging is a worthwhile and fun experience.
17. As a judge you join an elite team which prides itself on providing the best possible quality experience for all teams participating in a WRO event. You never know what impact you may have on an individual at the competition and should always respect all teams at the event. As a judge you are there for the teams not the coaches or spectators your primary responsibility is the welfare of the teams on your table.

7. Conclusion

We hope this guide has assisted you in preparing for the WRO and has provided you with some beneficial knowledge for WRO. Good luck and we wish you the best in your preparations for the WRO Event.

If you have any questions, please refer to the WRO SA website www.wrosa.co.za and view the Q&A pages. If you have any other questions or would like more information on a subject, please email wro@handsontech.co.za

Good Luck and Welcome to the World Robot Olympiad in South Africa