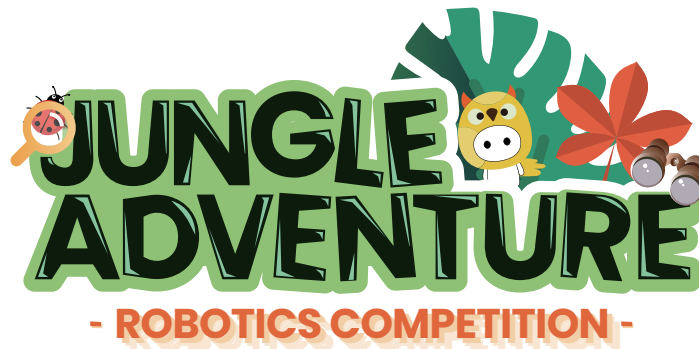


MatataWorld Robotics Competition



Rulebook V1.3

Prepared by
MatataWorld Robotics Competition Organizing Committee
December 2020

Update log

Date	Version	Updates
January 1, 2020	V 1.0	Jungle Adventure Competition rules released for the first time.
March 1, 2020	V 1.1	Map of competition venue optimized, details of rules changed.
May 1, 2020	V 1.2	Competition IP added, rule descriptions improved.
December 1, 2020	V 1.3	<p>1.2.1 Elementary Schooler Category added.</p> <p>1.2.3 Detailed grouping rules for Elementary Schooler Category added.</p> <p>2.3.9 Time for changing competition area revised.</p> <p>2.4.4 Scores for Creative Modification mission revised.</p> <p>※ Other details revised and improved.</p>

Table of Contents

1.Competition Introduction.....	1
1.1 Competition Overview.....	1
1.2 Participating Team Requirements.....	1
1.3 Robot Requirements.....	1
2.Competition Rules and Venue Props.....	2
2.1 Rules Overview.....	2
2.2 Map and Prop Description.....	2
2.3 Task Description.....	5
2.4 Competition Mechanism and Scoring.....	6
2.5 Violation Determination and Penalties.....	8
3.Competition Procedure.....	9
3.1 Competition Schedule.....	9
3.2 Registration.....	9
3.3 Pre-competition.....	10
3.4 In Competition.....	10
3.5 Participating Team Requirements.....	10
3.6 Emergency Management.....	11
4.Awards Setting.....	12
5.Rule Updates and FAQs.....	12
5.1 FAQ Platform.....	12
5.2 Rule Updates.....	12
5.3 Contact Methods.....	13
5.4 FAQs.....	13

1.Competition Introduction

1.1.Competition Overview

“Jungle Adventure” is a game-based MatataWorld Robotics Competition designed to develop preschoolers' skills in creative design, coding, teamwork, and problem-solving. The competition is based on jungle stories, and requires participants to turn their robots into jungle animals (Creative Modification), navigate the jungle's obstacles (Breaking Through), and finally compete with other animals for the title of King of the Jungle (Taking the Crown). The competition is divided into three sections: Creative Modification, Breaking Through, and Taking the Crown. The focus is to help preschoolers develop problem-solving skills, such as task analysis, pattern recognition, abstract thinking, and algorithmic thinking through the gamified STEAM competition. In the process, children are expected to gain knowledge and skills while improving their ability to solve complex, real-life problems.

1.2.Participating Team Requirements

1.2.1.This is a team competition divided into two categories: Pre-Schoolers and Elementary Schoolers. Each participating team consists of two robots, one coding set, two participants, and 1-2 instructors. One instructor is able to supervise more than one participating team.

1.2.2.Pre-Schoolers: Participants should be 4 to 6 years old (as of September 1 in the year in which the competition is held), and the participating team must have at least one instructor who is over 18 years old (as of September 1 in the year in which the competition is held).

1.2.3.Elementary Schoolers: One participant should be 6 to 8 years old (as

of September 1 in the year in which the competition is held), the other one should be 4 to 8 years old (as of September 1 in the year in which the competition is held), and the participating team must have at least one instructor who is over 18 years old (as of September 1 in the year in which the competition is held).

1.3.Robot Requirements

1.3.1.The only robots allowed to be used are Matatalab coding robots and related expansion packs produced by Matatalab. Modifications may only be made using the modification materials specified by the Organizing Committee.

1.3.2.Robot size: Robot size after modification must not exceed 120mm*120mm. Height is not limited.

1.3.3.Robot weight: Robot weight after modification must be $\leq 250\text{g}$.

1.3.4.Participants must calibrate the robot's motor before the competition. No calibration time is provided during the competition. If a team's score is affected by a robot's placement angle or an uncalibrated motor, appeals for such issues will not be accepted.

2.Competition Rules and Venue Props

2.1.Rules Overview

2.1.1.This is a team competition. The two robots are Robot #1 and Robot #2, and the two participants are Player #1 and Player #2. The Creative Modification stage is completed cooperatively by both Players, the Breaking Through stage is completed independently by Player #1, and the Taking the Crown stage is completed by Player #2.

2.1.2.The first stage is Creative Modification. Before the competition, players need to turn their team's two robots into jungle animals, which will be used in the subsequent competition, and submit photos of the modified robots to the Organizing Committee in advance. They also need to consider if the modification will help them gain an advantage in the Taking the Crown stage. This mission focuses on the creative design skills of the participants.

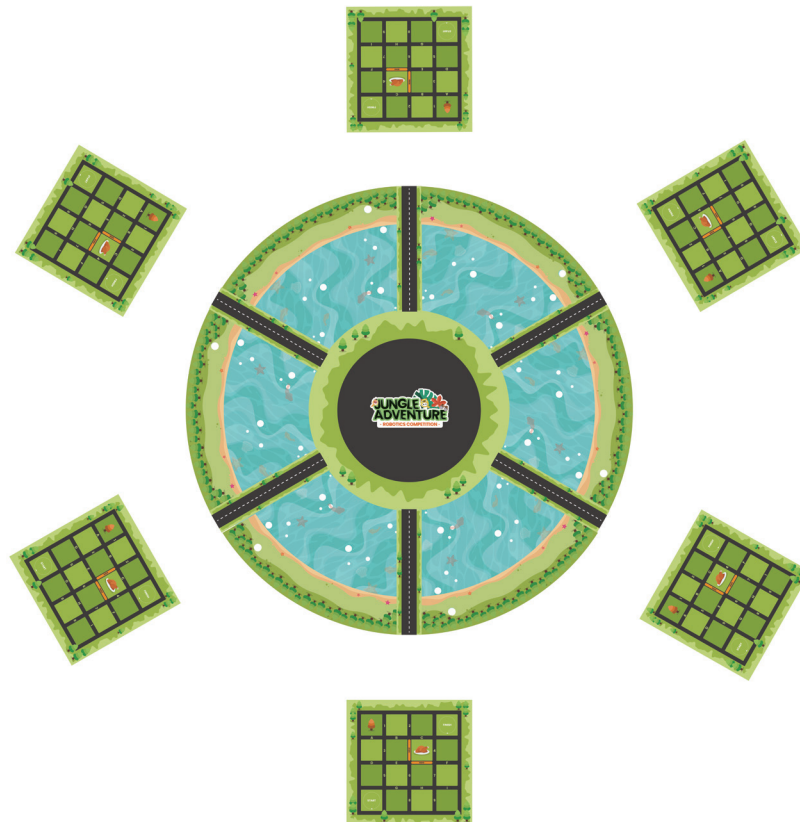
2.1.3.The second stage, Breaking Through, primarily examines the participants' skills in observation, path planning, coding and general problem solving. Through hands-on coding in the designated area, Team Player 1 is expected to make Robot 1 move from the starting point to the endpoint through the jungle's many difficulties. Scores earned and time they use will be recorded.

2.1.4.The third stage is Taking the Crown, which takes 3 minutes. Team Player #2 is expected to control Robot #2 with the remote control mode in the designated area to force the other 5 teams' robots out of the playing area. The team is considered to win if the opponent's robots are pushed out or fall out of the battle zone.

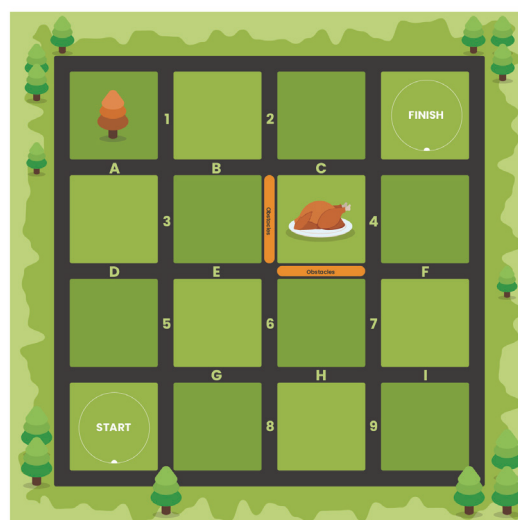
2.1.5.The combined score of the three stages will determine the final ranking.

2.2.Map and Prop Description

2.2.1.The competition's venue map consists of 6 jungle maps, 6 pontoon bridges, and an arena. It can accommodate up to six teams playing simultaneously, as shown in the picture below.



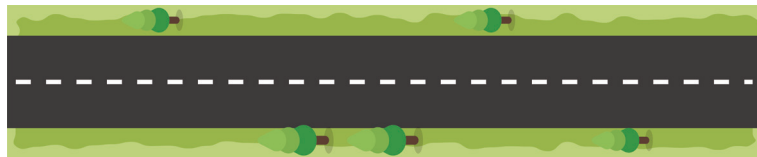
2.2.2. The Breaking Through mission map consists of 10cm*10cm small grid. The map size is $(47\text{cm} \pm 3\text{cm}) \times (47\text{cm} \pm 3\text{cm})$, as shown in the picture below.



2.2.3. Obstacles are plastic props with the size of 10cm (length) x 1cm (width) x 3cm (height), as shown in the picture below.



2.2.4. The size of the lifting pontoon bridge is $(50\text{cm} \pm 2\text{cm}) \times (10\text{cm} \pm 2\text{cm})$. It is connected to the arena from the left, as shown in the picture below.



2.2.5. The arena is a circle with a radius of 40cm, and there are gaps on the edge to connect with the pontoon bridges, as shown in the picture below.



2.3.Task Description

2.3.1.The Creative Modification mission is not completed at the competition site. Participants need to submit photos of modified robots to the Organizing Committee for review in advance. After the review, they only need to bring the modified robots to the venue for inspection at the designated time. Permitted modification materials are: clay, Lego blocks, cardboard, and adhesives. Materials other than those specified above are not permitted. The modified robot must meet the requirements specified in sections 1.3.1, 1.3.2 and 1.3.3.

2.3.2.Time and method for submitting photos of modified robots in the Creative Modification stage are specified by the Organizing Committee before the competition.

2.3.3.Before the Breaking Through stage, 2 obstacles will be placed at designated locations on the map, while the coordinates of 2 more obstacles will be designated randomly by the referee. The gaps between the grids of the 4x4 map are marked alphabetically (A-H) in the horizontal direction and in Arabic numerals (1-10) in the vertical direction. There are a total of 18 random obstacle placement areas. If a task point is fully enclosed, the fourth task point will be redrawn until a task point that is not fully enclosed is drawn.

2.3.4.Within 3 minutes before the competition begins, participants should place their equipment in the designated area. Robot #1 should be placed at the starting point of the Breaking Through mission map (the front of the robot must be facing the direction indicated by the map label), Robot #2 should be placed at the starting point of the pontoon bridge, and the coding platform and blocks should be placed in the coding area. During the competition, coding in areas outside the coding area is prohibited.

2.3.5. At the Breaking Through stage, the timer begins once the referee announces the start of the match. The player should code the robot to travel from the jungle's starting point to the endpoint. Extra points may be earned for completing specific missions midway. When the robot reaches the endpoint, the timer stops.

2.3.6. The Breaking Through stage consists of two point-scoring missions:

A. Travel from the jungle's starting point to endpoint through correct path planning;

B. Reach the task points or food supply point. A song will be played when the robot reaches a task point.

2.3.7. If the robot pushes, bumps, or otherwise attempts to displace the obstacle to complete the mission, it must return to the starting point and restart. If the robot lightly touches the obstacle as it navigates the correct path, this is considered normal and does not affect the game. Teams must complete the Breaking Through mission and reach the hand-over area before they can proceed to the Taking the Crown mission.

2.3.8. When Robot #1 completes the Breaking Through mission and reaches the endpoint, player #1 should press the control button to start the Taking the Crown mission. At this time, the gate in front of Robot #2 will open, through which the robot can enter the battle zone.

2.3.9. Upon the first team's entry into the "Taking the Crown" battle zone, a 3-minute countdown will take place. Once the countdown is complete, the competition is over and there will be no timeouts.

During the Taking the Crown stage, your team is considered eliminated:

A.If your robot fails to enter the arena before the arena rises.

B.Your robot is forced to fall out of the arena by the opponent' s robot.

C.Your robot falls out of the arena.

Competition area changes:

A.During the first 90 seconds of Taking the Crown stage, the competition area is the arena and 6 pontoon bridges.

B.During the second 90 seconds of Taking the Crown stage, the competition area is the arena, and the arena will rise.

2.3.10.If there is no single winner within the specified time, the teams that finally stay in the arena will be co-winners for the Taking the Crown stage. Both win the first prize.

2.4.Competition Mechanism and Scoring

2.4.1.The competition adopts an elimination mechanism. Participating teams determine their opponents within the same group by random draw. Every six teams form an elimination group. Elimination is conducted in two rounds, with one team advancing in each round. The first elimination round begins at the same time for all six teams, and a winning team is ultimately produced. In the second elimination round, the remaining five teams start the game at the same time, and a winning team is ultimately produced. When there are less than six teams in the group, referees can determine the promotion quota based on the actual number of teams in the group. After the elimination rounds, four finalists are determined, who compete in the final round for first, second, third, and fourth place.

2.4.2.Ranking Rules

A.In the Breaking Through stage, scores are gained by completing tasks.

B.In the Taking the Crown stage, match results are ranked based on the order of elimination. The earlier the team is eliminated, the lower the ranking will be. Finally, the corresponding points are awarded based on ranking.

C.Match ranking is based primarily on total points for the match. The higher the total points, the higher the ranking. Where two teams' total points are the same, ranking depends on the time used to complete the Breaking Through mission, team with shorter time is ranked higher.

2.4.3.Timing rules: The Breaking Through and Taking the Crown missions are timed separately. For the Breaking Through mission, time taken to complete the mission is counted. While the competition time for the Taking the Crown mission is 3 minutes, starting from when the first team enters the arena.

2.4.4.Scoring Rules

Creative Modification Scoring

Whether modified works meet the theme requirements	1-5 points
Workload and completeness	1-3 points
Creativity	1-2 points

Breaking Through Scoring

Travel from the starting point to the endpoint	10 points
Complete specified action when passing task points	10 points

Taking the Crown Scoring

First place	10 points
Second place	8 points
Third place	6 points
Fourth place	4 points
Fifth place	2 points
Sixth place	1 points

2.5.Violation Determination and Penalties

2.5.1.In Creative Modification stage, participants are not allowed to use any materials other than the specified modification materials. Those who violate this regulation will not be eligible to participate in the competition.

2.5.2.During a mission, no part, remote control, and so on may be replaced or added to the robot, and no items may be received from outside the competition field where a team is located, including the viewing area, other team' s competition field, practice area and debugging area, etc., otherwise it will be deemed a violation, and the team will be disqualified.

2.5.3.Except in special circumstances, a team that does not arrive at the inspection area within the specified time will automatically be declared the loser of the mission. The chief inspector and the chief referee may make determinations based on actual situation.

2.5.4.In a single mission, if one team abstains, that team's score for the mission is forfeit.

2.5.5.In the Traversing the Jungle stage, once the entire body of a robot is outside the map, it is deemed to have failed. The player must move the robot to the starting point and restart, but the timer will not be reset.

2.5.6.During the Breaking Through stage, if a robot touches obstacles 3 times during its journey, it must return to the starting point and restart. If a robot moves the obstacle by a push, a drag or other actions, the robot must return to the starting point and restart after the obstacles are repositioned.

2.5.7.During the competition, without referee' s approval, participants may not touch the robot anytime in any way, otherwise the robot's competition score will be invalidated.

2.5.8.During the competition, a mission officially starts or end when the referee blows whistle. Players must not operate the robot before hearing the start whistle, and must stop operating the robot after hearing the final whistle. If a serious violation of this rule occurs, the team's competition score will be invalidated.

2.5.9.If a team proposes to stop or terminate the competition with an inappropriate reason, that team will be immediately disqualified.

3.Competition Procedure

3.1.Competition Schedule

Competition timeline will be published in the competition programme issued by the Organizing Committee before the competition.

3.2.Registration

3.2.1.All teams that have confirmed their participation through the registration system and have been notified of their qualification must report to the venue, receive the competition materials (competition programme, rulebook and entry permit card), and undergo pre-inspection on the registration date. Participants who pass the pre-inspection will be recorded as “passed” , while participants who fail must modify the robot so that it meets the requirements and undergo the pre-inspection again.

Pre-inspection requirements:

- 1)The robot is undamaged and functions normally.
- 2)The robot has no illegal modifications.

3.2.2.If conditions permit, the Organizing Committee will arrange practice competitions before the competition so that teams can get familiar with the venue. Only participants who have passed pre-inspection can take part in the practice competitions. Referees will be present at the practice venue to simulate the official competition. Participating teams will have to voluntarily queue for the practice venue. During the practice competitions, participants must follow the staff’ s instructions, and the Organizing Committee will announce the competition schedule automatically gen-

erated by the system in electronic or paper form on electronic displays, televisions, and in players' debugging and rest areas. Specific announcement areas will be publicized in the competition programme issued by the Organizing Committee before the competition and be subject to notifications at the service counters.

3.2.3. Based on the number of participating teams, the Organizing Committee will announce the schedule and team number before the competition. Please refer to the competition programme for details.

3.3. Pre-competition

3.3.1. To ensure that the robots of all participating teams comply with the standard specifications, participating teams must arrive at the inspection area 15 minutes before the start of the competition for pre-competition inspection of their robots. Once inspection is completed, the corresponding team number will be affixed to the robot. For example: Team A's two robots are numbered A1 and A2. If participants fail inspection, they must adjust their robots within 2 minutes, and will be allowed to compete only after the referee determines that the modified robot meets the requirements. If a robot that fails inspection is not adjusted within 2 minutes, it will be disqualified from the competition.

3.3.2. Players from competing parties should check the venue and props to ensure conformance to specifications. If there are objections, they may ask the referee to re-check and make adjustments.

3.4. In Competition

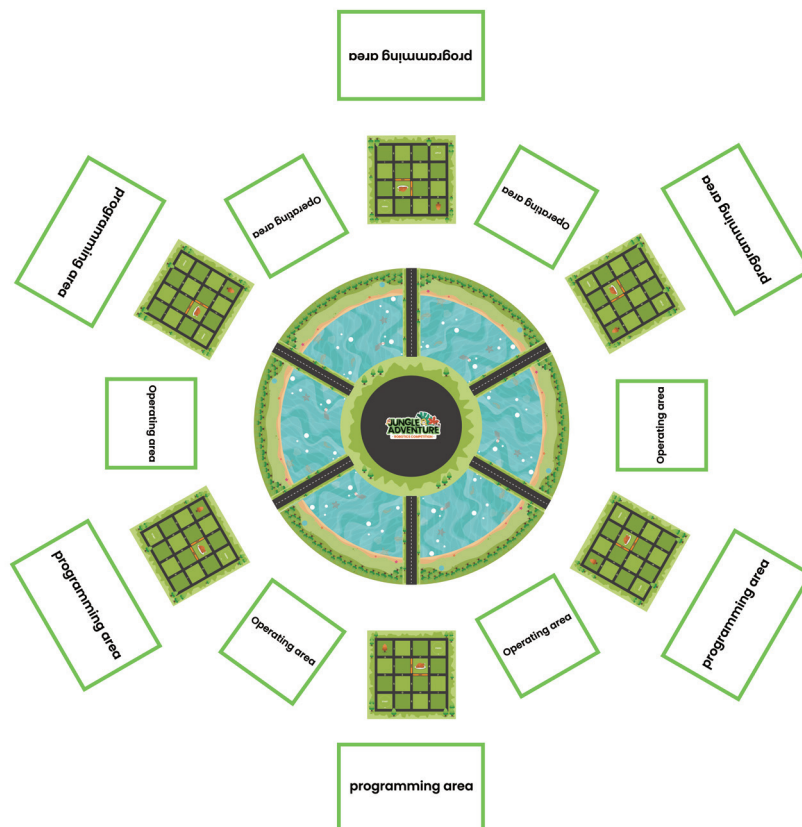
3.4.1. Competition starts

3.4.2. Each team's leader should confirm the scores of their own team and the competing teams and should sign the score record sheet on behalf of their team. If there are any objections, they should inform the referee of the objection, the referee will then record it in the objection section of the score sheet.

3.4.3. When the two knockout matches within a group are over, the referee will announce on the spot the list of teams that will advance to the next match. Under normal circumstances, the next match will start 5 minutes after the last round of a match.

3.5. Participating Team Requirements

3.5.1. Participants must operate their robots in the designated area, as shown in the picture below. If this rule is violated, the team's competition score will be invalidated.



3.5.2. Participating teams should abide by the competition spirit, and must not quarrel with or insult others, instigate physical conflict, or sabotage or steal other teams' robots or other items. Penalties for failing to abide by the rules of conduct in the arena shall correspond to the severity of the violation.

3.6. Emergency Management

3.6.1. In case of a serious safety hazard or abnormal situation at the venue (battery explosion, power outage in the venue, etc.), once discovered and confirmed by the chief referee, the results of the round will be invalidated. The round will restart after the hazard or situation is resolved.

3.6.2. During the competition, if props are moderately damaged but do not affect the progress, the competition should proceed as normal. If props are structurally damaged (such as a damaged map, which affects the robot movement), once discovered and confirmed by the referee, the results of the match will be invalidated. The match will restart after repairs are finished by the venue technicians.

3.6.3. If the fairness of a match is affected by the malfunction of or structural damage to the key props in the field, and the referee fails to promptly confirm it and end the match, thereby allowing a match that should have ended to continue and receive a winning or losing outcome, after being verified by the chief referee, the result of the round should be invalidated and the round should be held again.

3.6.4. In a single match, if one of a team's members fails to arrive at the venue within the specified time due to reasons such as lateness or failure to pass inspection, the team's present member can play IVS2 after explaining the situation to the referee.

4.Awards Setting

Normally, there will be one first place winner, one second place winner, one third place winner, and a number of Excellence Awards. Specific awards setting depends on the actual situation. Please refer to the competition programme for details.

5.Rule Updates and FAQs

5.1.FAQ Platform

If you have any questions about the competition, you can send your inquiries to the following official channels, and the staff will reply within 1-3 working days.

Official email: mwrc@matatalab.com

Official website: matatalab.com/mwrc

5.2.Rule Updates

Depending on the actual situation during preparations and competitions, the Organizing Committee may update the rules in the following areas:

- (1) Rules, penalties, and adjustments to the competition mechanism.
- (2) Small adjustments to the map and props.
- (3) Additional penalties or corrections to be imposed on actions that cause imbalance in the competition.
- (4) Minor changes to contents that are unrelated to the rules (such as competition registration, competition time, etc.).

(5)FAQs are regularly updated and compiled in the rulebook.

All rulebook updates will include a version number, and the latest version will be published and prominently featured on the official website, forums, and other designated channels. Referees' standards of judgment during competitions shall be based on the latest rulebook version.

5.3.Contact Methods

Official email: mwrc@matatalab.com

Official website: matatalab.com/mwrc

5.4.FAQs

Questions about competition registration:

Q1: Do I register for the competition as an individual or as a school?

A1: There is no restriction. You can register as an individual or as a school.

Q2: Where can I purchase the competition map and props?

A2: The competition map and related props and materials are uniformly included in the competition expansion package.

Q3: Is the competition divided by specific age groups?

A3: Specific grouping rules will be issued to participating teams via relevant forums or email after the registration deadline.

Q4: How can I get the competition map and props?

A4: We will uniformly provide purchase channels for the competition expansion package.

Q5: Can instructors assist in the robot inspection (if the players are too young).

A5: Instructors are allowed to preside over the inspection.