International Youth Robot Competition (IYRC) 2026 KOREA

RULES & REGULATIONS

Version 1.1

Overview

1. Date: 6th & 7th August 2026
2. Venue: Hanbat National University, Korea
3. Organizer: International Youth Robotics Committee (IYRA)
4. Co-organizer:
4. Participants: More than 2,000 participants from 30 countries around the world.

Competition Categories

Kinder (below 8 years old) – by birth year 2018
1. Robot Bowling (Kinder Skill)
2. Math Challenge (Kinder Skill)
3. Young Innovators

Junior (8-13 years old) – by birth year 2011
1. Animal Kingdom (Junior Coding)
2. Math Challenge (Junior Skill)
3. Push-push (Junior Skill)
4. Soccer (Junior Skill）
5. Communication Master III
6. Wandering Planet III

Senior (13-18 years old) – by birth year 2008
1. Save the forest (Senior Coding)
2. Robot Volleyball (Senior Skill)
3. Autonomous Push-push (Senior Coding Skill)
4. Wandering Planet III

Compulsory (Junior + Senior)
1. Creative Robot Design – “Jurassic Intelligence X AI Innovation”

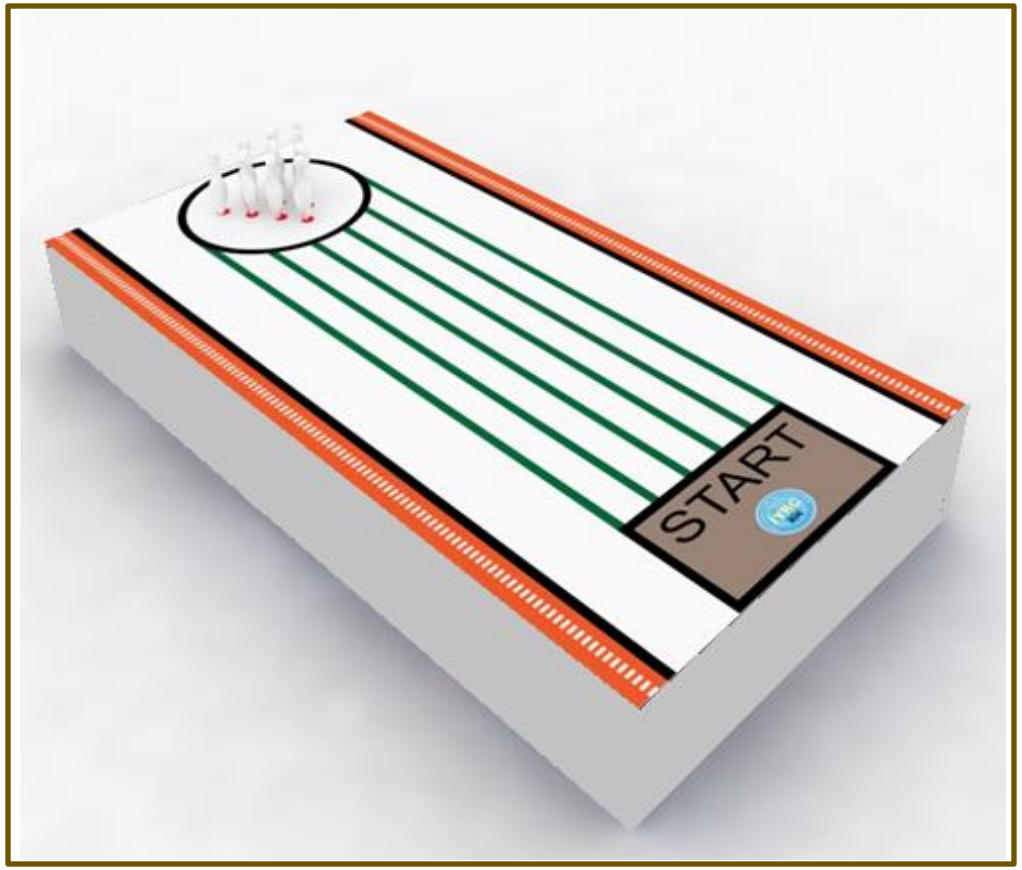
Open
1. Humanoid Robot Mission
2. Genibot Coding Mission
3. Game Maker Kit Game Challenge
4. Drone Soccer
5. Drone Mission
6. Cocomon GO

KINDER CATEGORY

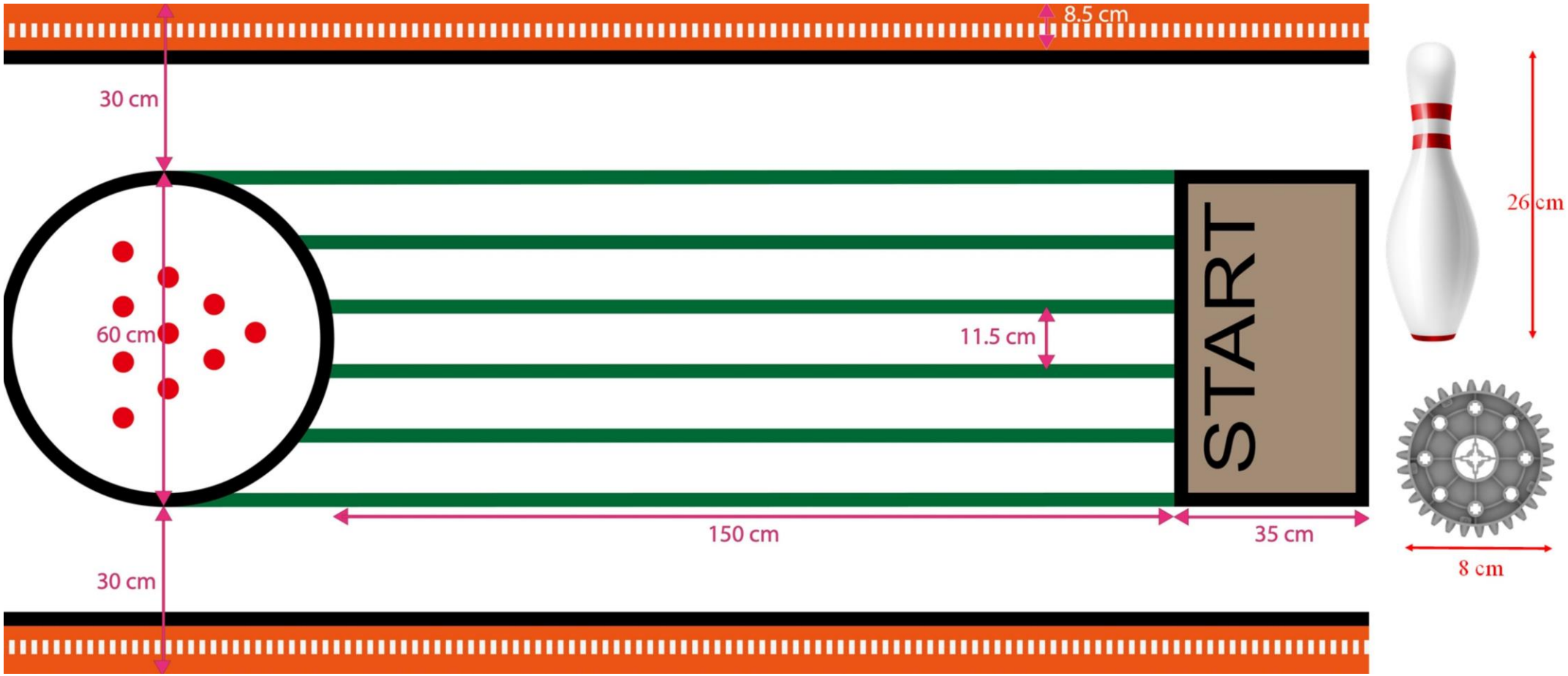
Robot Bowling
Math Challenge
Young Innovators

KINDER : ROBOT BOWLING

Age	**< 8**
Category	Individual Mission
Robot Kits Allowed	GOMA & BRAIN
Mission	Throw ball to knock down pins from start box
Robot Building	Pre-build & on the spot Card Programming



ROBOT BOWLING GAME FIELD



ROBOT BOWLING GAME RULES

Dimensions & Restrictions

- Initial size shall not exceed 35cm (H) X 35cm (W) X 35cm (L).
- Robots are allowed to expand to any size after the game starts
- Robots are **Strictly NOT ALLOWED** to have any foreign parts (including rubber band, black tape or scotch tapes) other than the parts in GOMA & BRAIN
- Robots are not allowed to have any power supply above 6V DC (Volt of Direct Current).

Game Duration

- 3 minutes is given from the point of receiving programming cards and reader from referee
- 2 rounds whereby each round will have 3 attempts to shoot, (total of 6 attempts)
- Time taken to replace the pins will not be counted within the 3 minutes given

ROBOT BOWLING GAME RULES

Scoring

- Programming : If participants are able to program the robot by themselves (10 marks)
- Programming : If participants request referee's help to program the robot (0 marks)
- Shooting : 1 point for each pin knocked down
- Reset of pins : Reset of pints only during the first attempt of each round, or when a Strike or a Spare occurs during previous attempts.
- Strike : When all 10 pins are knocked down in one attempt
- Spare : When balance of pins are knocked down in 2nd attempt

ROBOT BOWLING GAME RULES

Game Play Details

- Programming cards & card readers will be provided by organizer.
- The participant will be disqualified if batteries used does not have original voltage label indicating the battery voltage.
- Participant's Robot must always stay within the start box throughout the mission. If the robot moves out of the start box when shooting, it is a foul and no points will be given to the participant for that attempt.

Win/Lose Criteria

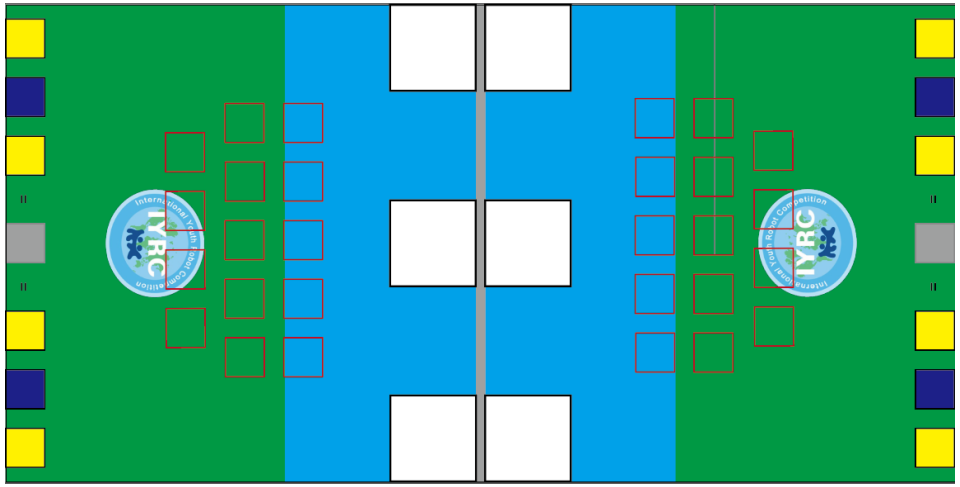
- Participant with the highest score will be the winner.
- If same points occur, the higher points from the first attempt will be compared to determine the winner, if the points are the same the second attempt would then be compared, so on and so fourth until the last attempt.
- In the case whereby all points are the same, the date of birth of the participant would be compared. The younger participant would be the winner.

ROBOT BOWLING SCORE EXAMPLE

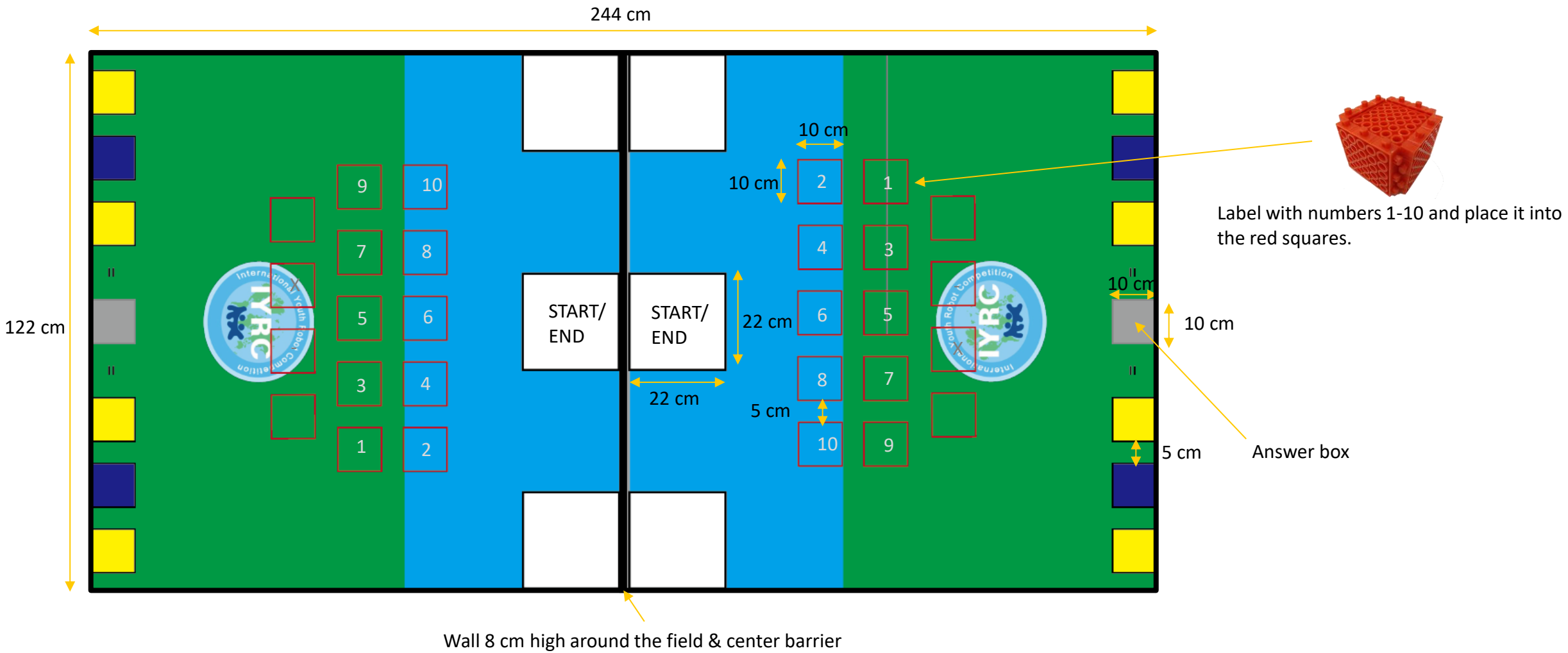
Child	1st	2nd	3rd	4th	5th	6th	Programming	Total	Ranking
A (6yo)	10	10	10	10	10	10	10	70	1
B (7yo)	10	10	10	10	10	10	10	70	2
C	10	8	2	10	7	3	0	40	3
D	8	2	10	5	3	2	10	40	4
E	4	3	1	10	5	2	10	35	5
F	4	3	1	10	4	3	10	35	6

KINDER : MATH CHALLENGE

Age	**< 8**
Category	Individual
Robot Kits Allowed	MRT Series & HUNA educational robot kit
Mission	Push answer block to the answer box.
Robot Building	Pre-build remote control robot



MATH CHALLENGE GAME FIELD



Random Pick Math Card

A stack of math cards will be shuffle and let the participant to pick.

1+1=	2+1=	2+2=	4+1=
4+2=	3+5=	3+4=	4+5=
2+8=	6-5=	9-7=	8-5=
7-3=	6-1=	10-4=	10-3=
10-2=	10-1=		

MATH CHALLENGE GAME RULES

Dimensions and Restriction

- Initial size shall not exceed 20cm (H) X 20cm (W) X 20cm (L).
- Robots are NOT allowed to expand to any size after the game starts.
- Maximum 4 DC motors and 1 mainboard.

Game Duration

- 3 minutes game.
- Solve as many math question as possible.

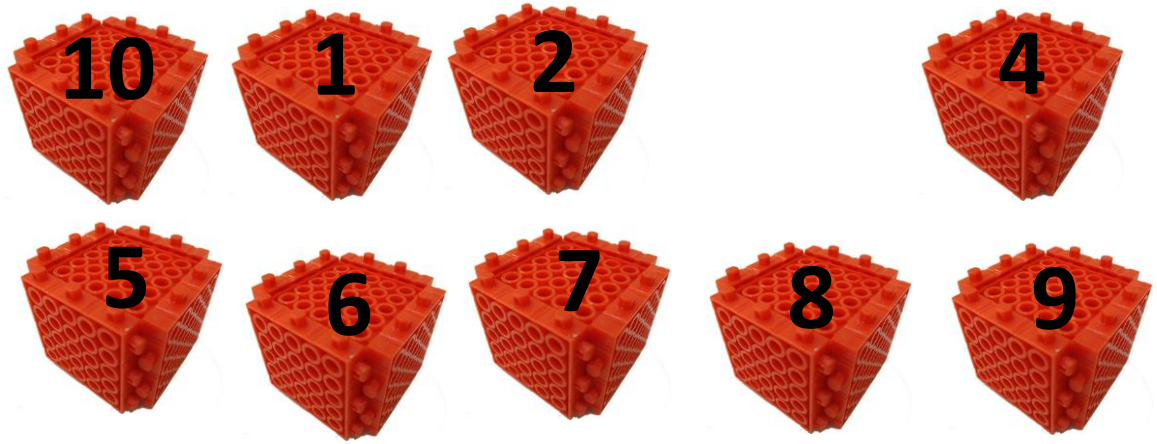
Game Play Details

- Robot should stay inside the white square and wait for referee's instruction.
- Once the match has begun, participant should pick a math card randomly form a deck of cards. Then robot must move and push the desire answer block into the grey box.
- Once it is done, robot should back to the start/end box and pick another card to solve the math problem. The answer block will also be reset.
- Solve as many math problem as possible during the 3 minutes game play.

Scoring

- Robot successfully pushes correct answer block into grey box. (10 points each)
- Robot back to Start/End box each round. (10 points each)

MATH CHALLENGE GAME EXAMPLE



2+1=

Participant pick this math card

These blocks (numbers) are to push into the answer box (grey box)

Answer for the math card

KINDER : YOUNG INNOVATOR

Age	5-8 years old (Based on year)
Category	Grouping (max 3 people in a team)
Robot Kits Allowed	MRT series product, included CodeSpark (Can combine)
Mission	Participants design robots/models to perform a storytelling presentation
Robot Building	Pre-build
Game Method	On-site presentation and demonstration
Game Duration	Total 5 minutes including Q&A

KINDER : YOUNG INNOVATORS

1. Robot Dimensions and Weight

1.1. The size and weight of the robot is not limited.

2. Theme for Junior Teenovator

Story telling based.

Theme:

<Jurassic World & Planet Care>

In this category, participants design robots or models to perform a storytelling presentation based on the theme “Jurassic World & Planet Care.” Participants may create their own original story or adapt an existing story, as long as it aligns with the theme. Participants are encouraged to feature dinosaurs as the main characters, using the robots to bring these prehistoric creatures and their world to life through movement, actions, or interactions.

KINDER : YOUNG INNOVATORS

For example:

Rex was a young dinosaur who lived in a beautiful forest. One day, the forest was in danger. Trees were falling, rivers were blocked, and many smaller dinosaurs were trapped and scared. Rex wanted to help. He led his friends to safety, planted new trees, cleared the forest, and unblocked the river so water could flow again. With courage and teamwork, Rex saved his home and showed that even a small dinosaur can make a big difference in taking care of the planet.

3. Restriction on Project Design

3.1. Only MRT / CodeSpark series products may be used as the main components to build the robot. (Examples: CodeSpark, Brain A, Newkicky, SE1)

3.2. There is no limit on the number of blocks or components used.

3.3. Participants may cross-use parts from the approved MRT / CodeSpark series within the same robot.

3.4. Robots may operate autonomously or via remote control.

3.5. Other materials may be used to enhance the model or robot (e.g. cameras, paper cups, rings, sticks, bottles, 3D-printed parts, drones, future boards, etc.), provided that the main structure and functionality are built using MRT / CodeSpark products.

KINDER : YOUNG INNOVATORS

3.6. AC (Alternating Current) power supplies are strictly prohibited for safety reasons.

3.7. No external power outlets will be provided during the competition.

3.8. Robots must not pose any danger to the arena, participants, judges, or surroundings.

3.9. Participants are responsible for protecting their robot's sensors from potential external interference, if necessary.

4. Game Rules

4.1. Participants are required to build their robot in advance. However, each group will be given 2 hours on-site to prepare and set up their robot or model.

4.2. Each group will have 5 minutes for a formal presentation to the referees, followed by a 2-minute Q&A session. However, the presentation time may be adjusted to 3 minutes, depending on the number of participants. The Q&A session will remain 2 minutes.

4.3. In addition to the formal presentation, participants may also be asked to present their robot casually to the audience or visitors at their booth.

KINDER : YOUNG INNOVATORS

4.4. Presentations need to be done in English.

4.5. Robots and models should be displayed on the assigned table. Participants are responsible for ensuring their robot/model is well taken care of during the display period, until judging is complete.

4.6. A poster describing the design/robot is also required.

4.7. The poster size and template of design must follow as in the link : ***xxxxx***.Participants also can find the example of proposal/document/summary for creative design.

4.8. 4 copies of the printed Manual (Proposal/Presentation File/Story) in English is recommended for the display and referees review, it needs to include:

- 4.8.1. Team Name, Team Member, Centre, Teacher Name
- 4.8.2. Short summary of the story
- 4.8.3. Details of the story (Scene 1 , scene 2..... and so on)
- 4.8.4. Sketch design of the prototype
  (Is something like a story book)

4.9. There will be two stages in this competition which are the Preliminary stage and Final stage.

KINDER : YOUNG INNOVATORS

4.10. In the Preliminary stage, participants are required to submit a proposal and poster of the project to the google form link. ***xxxx***.

4.11. The qualified participants to the final stages will be announced later.

4.12. Final stage presentation will be done on-site, physically.

5. Scoring

5.1. Preliminary stages judging criteria:

5.1.1. Creativity & Innovation: 20 marks

- Originality and creativity of the story or concept.
- How well the story reflects the theme "Jurassic World & Planet Care."
- Ability to communicate a meaningful environmental or sustainability message through the concept

5.1.2. Proposal completeness : 10 marks

- Clear explanation of the story background and inspiration.
- Well-structured description of the storytelling or presentation idea.
- Logical flow and clarity of the proposal.
- How clearly the story and robot concept convey the theme and environmental message.

KINDER : YOUNG INNOVATORS

5.1.3. Character sketch/diagram: 10 marks

- Visual clarity and overall design quality of the sketch or diagram.
- Effective integration of design elements such as color, shape, and form.
- How well the design supports both the appearance and storytelling functionality of the robot.

5.2. Final stages judging criteria:

5.2.1. Critical thinking & QnA : 10 marks

- Quality of responses during the Q&A session, including the ability to justify design choices and explain technical aspects of the robot.
- Openness to constructive criticism and willingness to improve the design based on questions and suggestions from judges or peers.

5.2.2. Creativity & Uniqueness: 20 marks

- Originality and inventiveness of the robot/model and story.
- How well the robot's actions and presentation bring the story to life.
- Integration of theme and environmental message in a unique and engaging way.

KINDER : YOUNG INNOVATORS

5.2.3. Teamwork : 10 marks

- Clear distribution of speaking roles and responsibilities during the presentation.
- Ability to support each other, coordinate smoothly, and communicate ideas clearly to the audience.
- Demonstrates joint effort in explaining the project, performing the robot, and engaging the judges.

5.2.4. Presentation skill : 20 marks

- Demonstrates clear and effective communication while presenting the robot.
- Shows how the robot functions as the character and brings the story to life in an understandable and engaging way.
- Ability to convey ideas, concepts, and environmental messages clearly to the audience and judges.

5.3. The participating group with the highest score is the winner **(Preliminary + final stage)** . If there are two or more groups with the same score, the group with the highest final stage presentation score will be the winner.

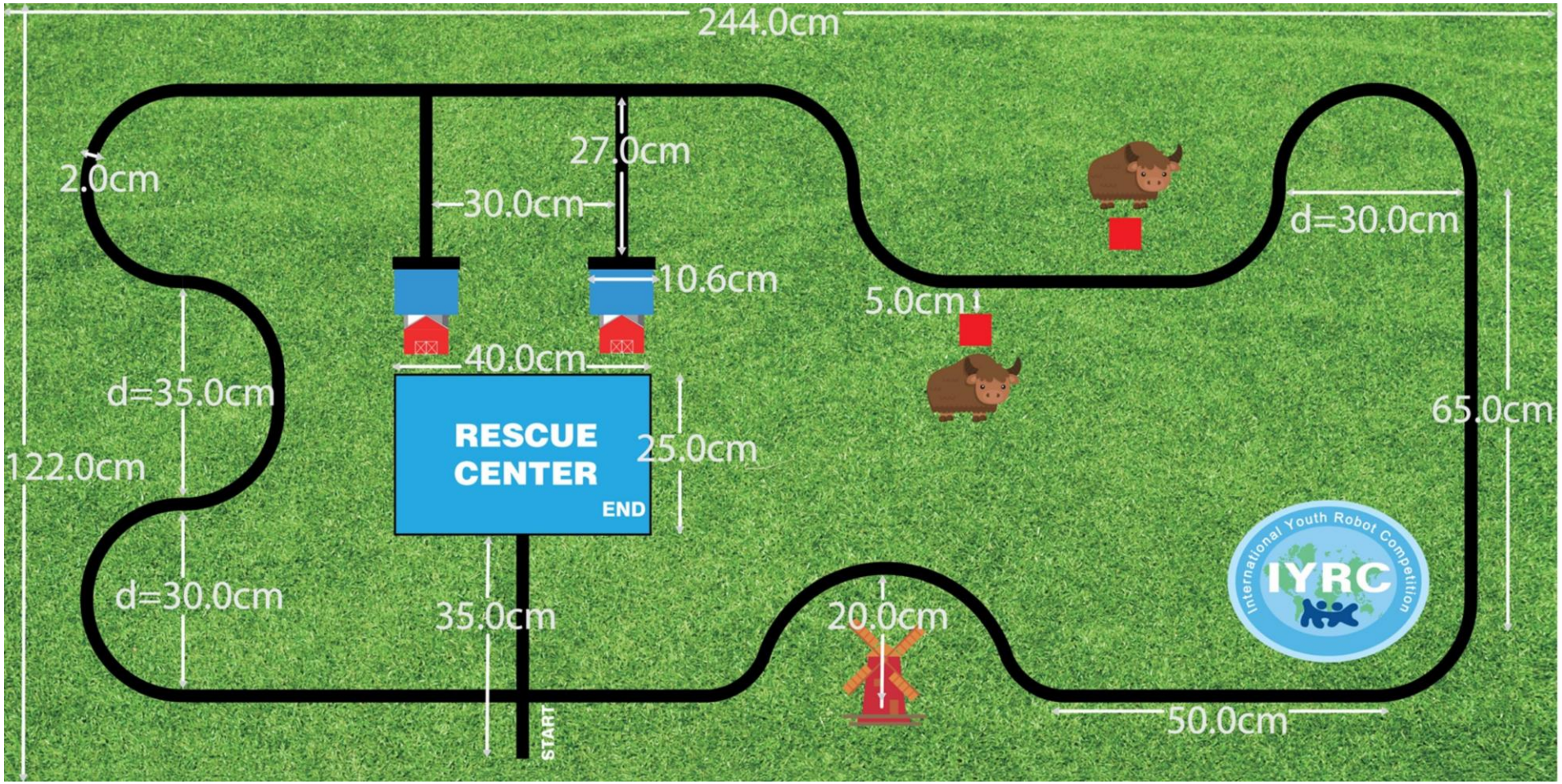
JUNIOR CATEGORY

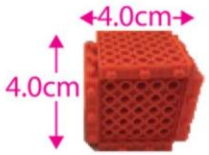
Animal Kingdom
Math Challenge
Push-Push
Robot Soccer
Communication Master III
Wandering Planet III

JUNIOR : ANIMAL KINGDOM

Age	**8-13**
Category	Individual Timed Mission
Robot Kits Allowed	MRT Series & HUNA educational robot kit
Mission	Program robot to trace line and complete the missions
Robot Building	Pre-build & pre-programmed

ANIMAL KINGDOM GAME FIELD

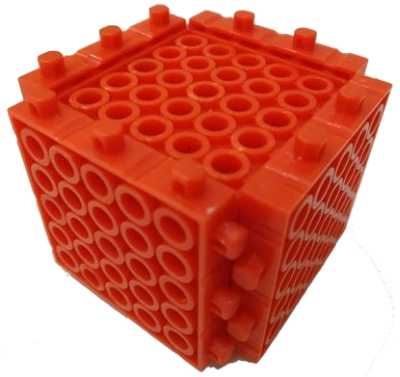




INJURED ANIMAL & FOOD

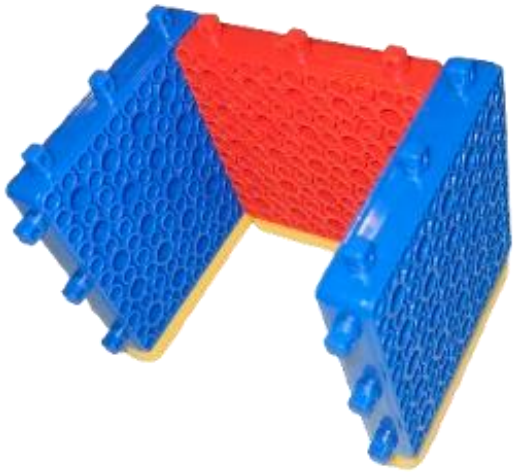
For injured animals and food, it is as picture on right it assembled with 6 pcs of 5*5 blocks.

Food will be placed on a stage like picture on the right.



ANIMAL BARN & FOOD

Horse & Cow barn as picture on the right.



Power Generator Switch:

L: 20cm, H : 7cm ,

Cube:

L : 7cm, H : 5cm , W:7cm

ANIMAL KINGDOM GAME RULES

Dimensions and Restriction

- Initial size shall not exceed 20cm (H) X 20cm (W) X 20cm (L).
- Robots are NOT allowed to expand to any size after the game starts.
- Maximum 4 DC motors, 5 IR sensors, 2 servo motors, 1 tracer sensor block and 1 mainboard.

Game Duration

- Each match is stipulated for 2 rounds with a total duration for a maximum 3 minutes.
- Game may end before 3 minutes when :
  - Completion of 2 rounds
  - Disqualification of a participant
  - When referee judges that the continuation of the match is impossible

Scoring

- Robot successfully pushes food into barn shed. (15 points each)
- Collect injured animals at the road side. (5 points each for removing them from the injured area)
- Switch the generator on by spinning the long stick at the semi-circle. (20 points)
- Successfully bringing the injured animals back to the Rescue Center. (10 points for each animal)
- Robot stops at the Rescue Center. (20 points)

ANIMAL KINGDOM GAME RULES

Game Play Details

- Robot should stay behind the starting line (distance from starting line to the Robot IR sensors not exceed 5cm) and facing west (R&R map position as the reference). Timer starts when the robot's IR sensors cross the starting line.
- Once the match has begun, the robot must move by its own to complete the following task:
  - Task 1 : Push the food into horse and cow barn.
  - Task 2 : Carry the two injured animals away from their initial location.
  - Task 3 : Switch on the power generator by passing through the semi-circle following the line and pushing the long stick, robot that does not follow the line and move to the next checkpoint would not be awarded points.
  - Task 4 : Make sure all injured animals carried by robot is placed into the Rescue Center. No points awarded if any part of the injured animals is out of the Rescue Center's black box.
  - Task 5 : Robot stops at the Rescue Center with any part of the robot's body stays inside the Rescue Center area.

Win/Lose Criteria

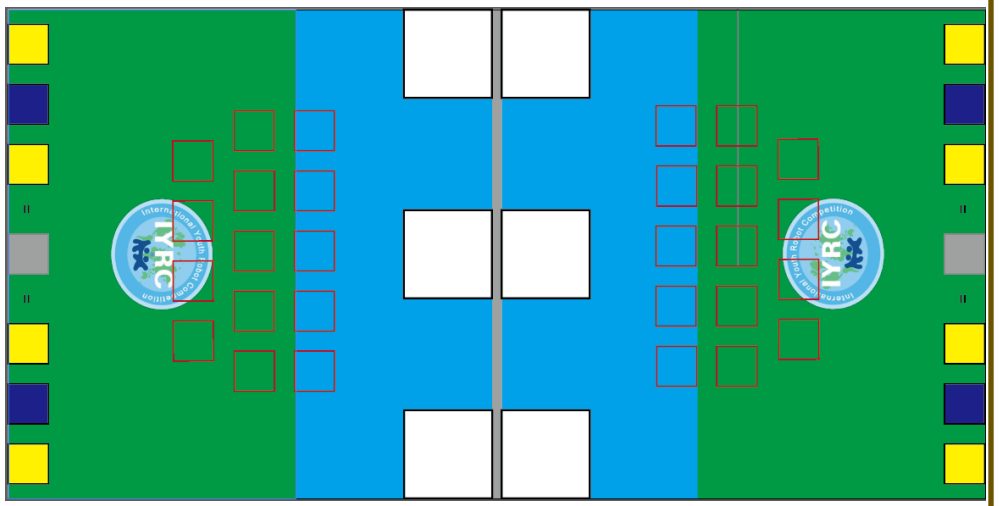
- Highest score of the two attempts will be used for ranking of winners.
- Participant with the highest score is the winner. If there are two or more participants with the same score, the lowest time recorded to finish the mission is the winner.
- If both points and time of participants are the same, the participant who is younger would be the winner.

ANIMAL KINGDOM SCORE EXAMPLE

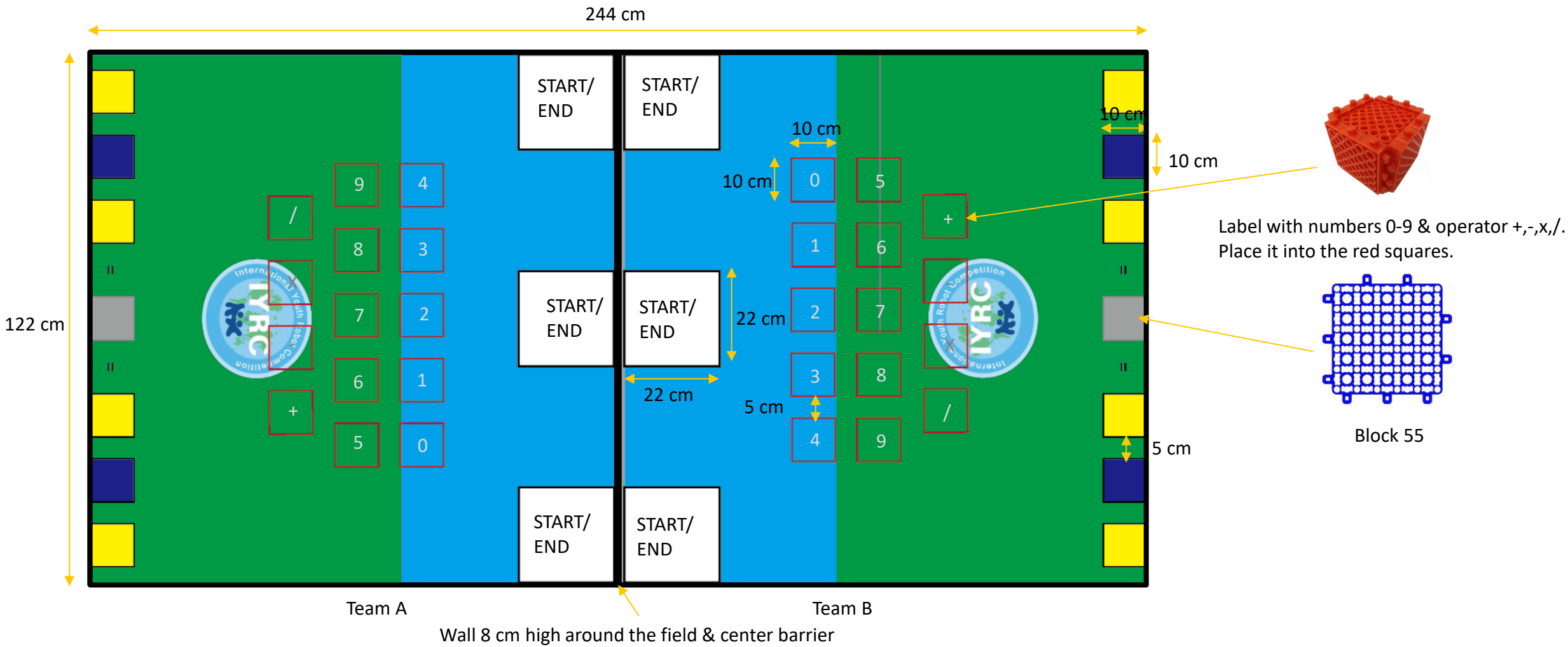
Child	Task 1	Task 2	Task 3	Task 4	Task 5	Total Points	Time Taken	Rank
A (9yo)	30	10	20	20	20	100	150	3
B (7yo)	30	10	20	20	20	100	150	2
C	30	10	20	20	20	100	130	1
D	30	10	20	20	0	80	120	4

JUNIOR : MATH CHALLENGE

Age	**8-13**
Category	Team 2 VS 2 (Tournament)
Robot Kits Allowed	MRT Series & HUNA educational robot kit
Mission	Push blocks to form equation
Robot Building	Pre-build remote control robot

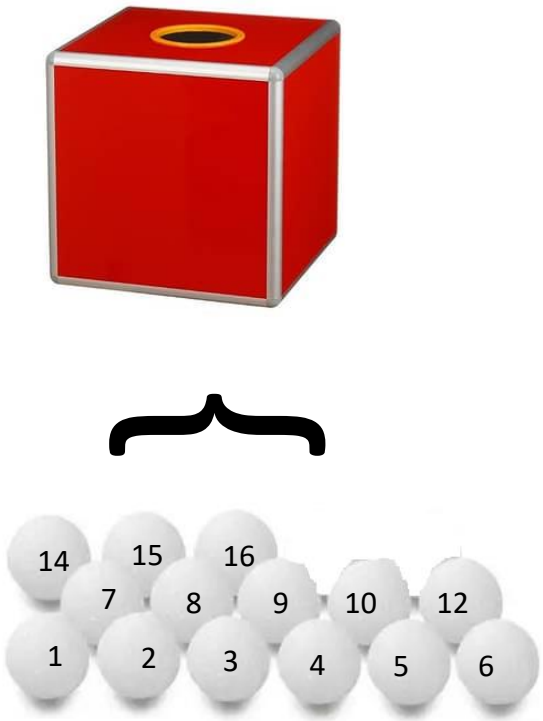


MATH CHALLENGE GAME FIELD



Random Pick Number

14 table tennis ball label with numbers put inside a lucky draw box.



MATH CHALLENGE GAME RULES

Dimensions and Restriction

- Initial size shall not exceed 20cm (H) X 20cm (W) X 20cm (L).
- Robots are NOT allowed to expand to any size after the game starts.
- Maximum 4 DC motors and 1 mainboard.

Game Duration

- 3 minutes max.

Game Play Details

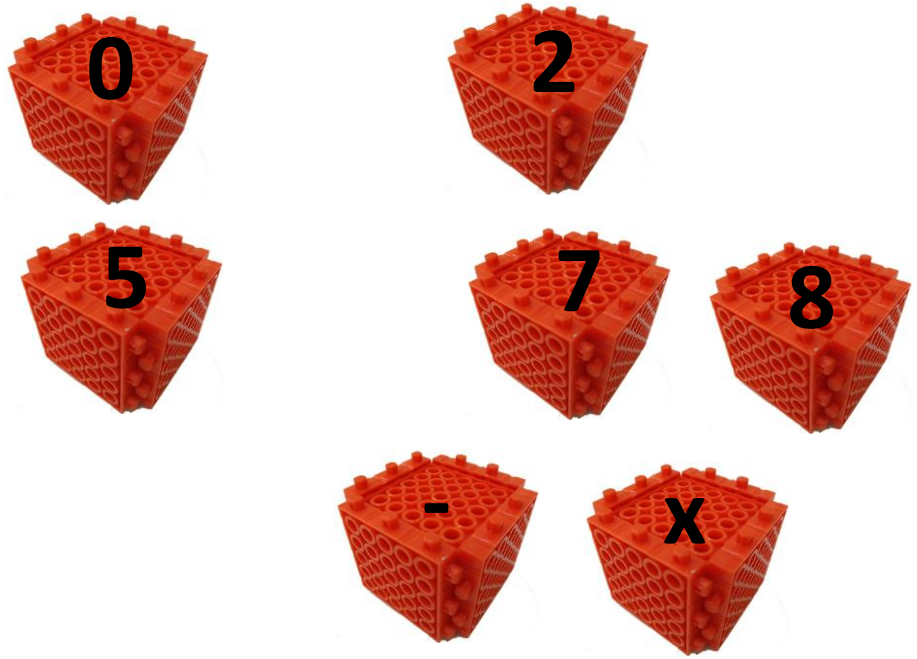
- Robots should stay inside any 2 of the Start/End box and wait for referee's instruction.
- Each participant will pick a number form the lucky draw box, so each team has 2 equation to be solved. One of the number will be place on the block 55 of their field and wait for game start.
- Once the match has begun, the robots must move and push the desire number block and operator block into the yellow and blue square to form the correct equation.
- After the correct equation is formed, both robots must return to its start box (white square) in order to declare the completion of the first game.
- After confirmed by the referee, then, referee will replace the second number on the block 55, the team can start to solve the second equation. If solved, robot should return to any of the Start/End box to declare the completion of the match.

MATH CHALLENGE GAME RULES

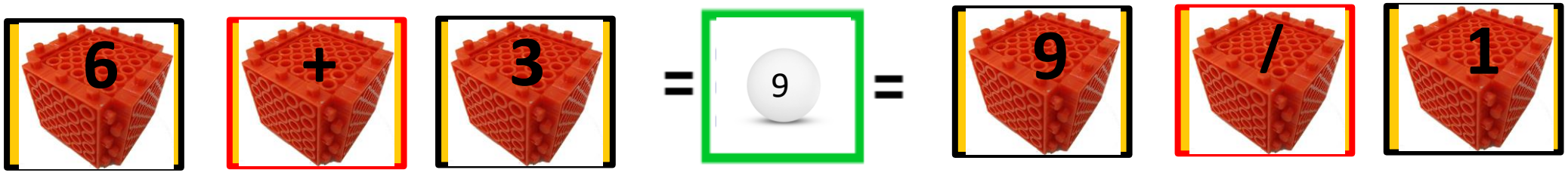
Win/Lose Criteria

- Team that finish the game earlier will be the winner.

MATH CHALLENGE GAME EXAMPLE

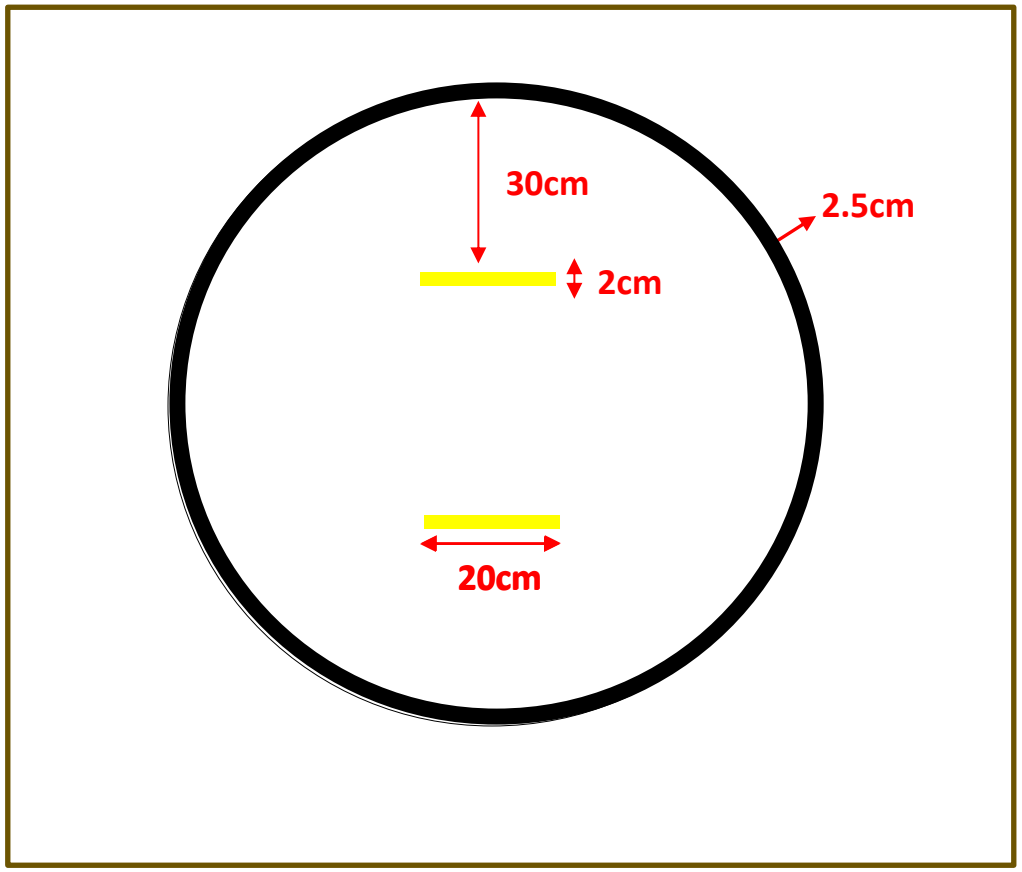


Each of these square box (numbers and operators) can only use once to form the equation.

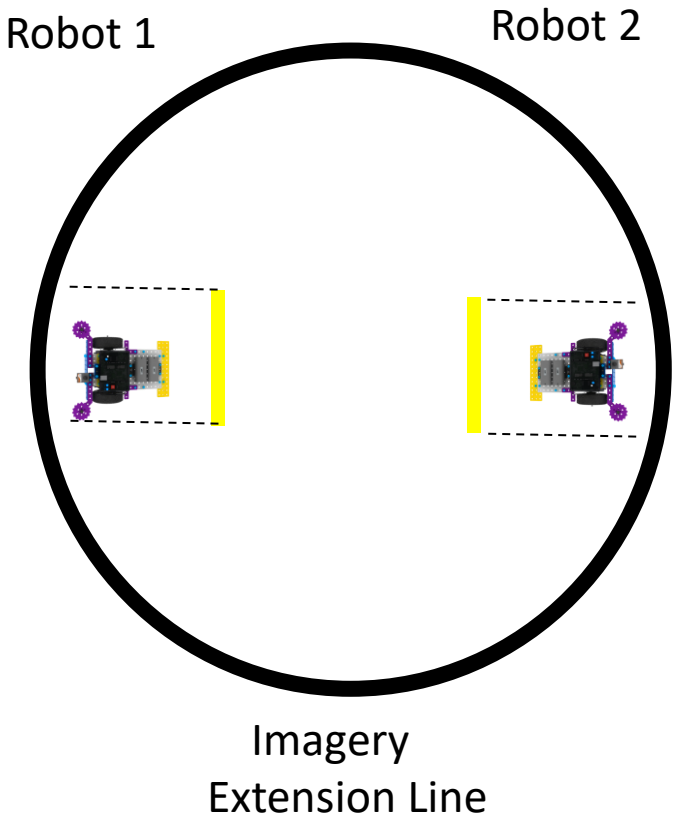


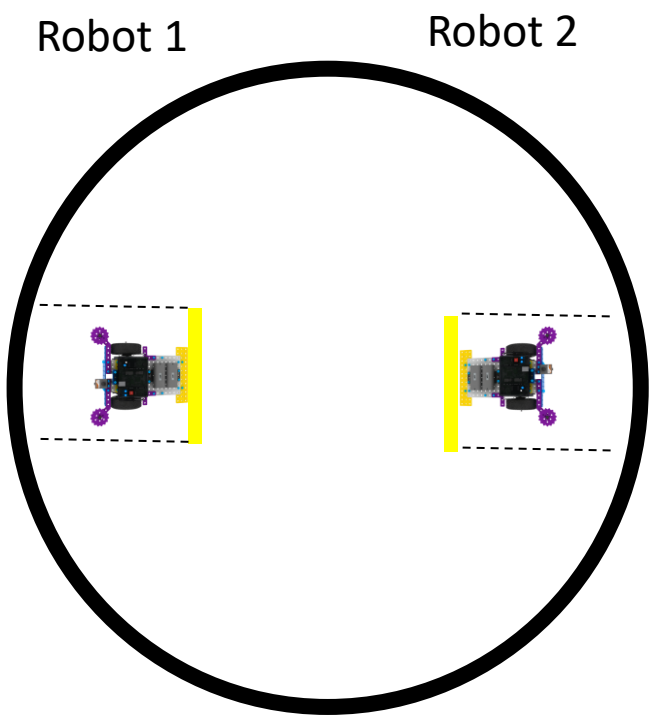
JUNIOR : PUSH-PUSH

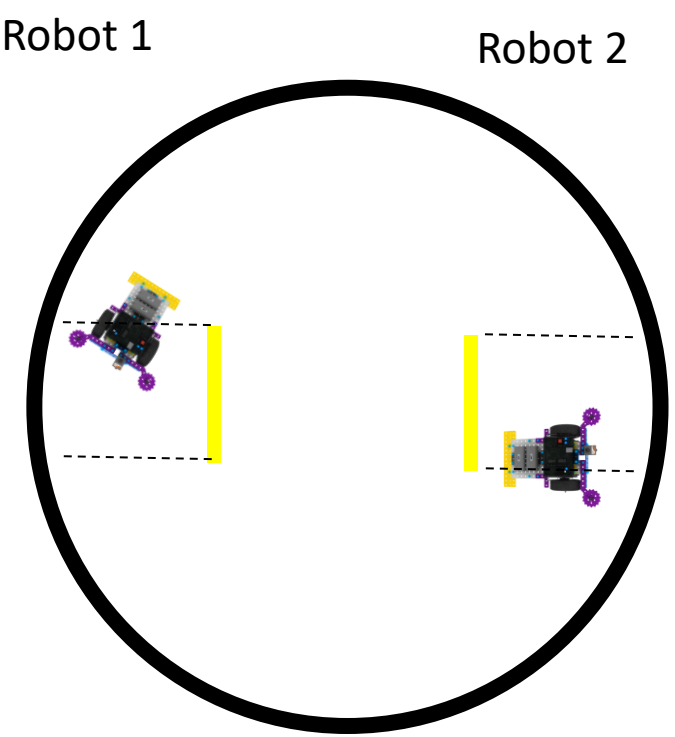
Age	8-13
Category	1 vs 1 Tournament
Robot Kits Allowed	MRT Series & HUNA educational robot kit (Exclude Kicky and Brain kit)
Mission	Remote control robot push opponent outside of the black ring
Robot Building	Pre-build remote control robot



PUSH-PUSH ROBOT PLACEMENT







Robots are allow to place in any position on the game field as long as the wheel is in the imagery extension line.

PUSH-PUSH GAME RULES

Dimensions, Weight and Restrictions

- The robot must adhere to a maximum size of 20cm (H) x 20cm (W) x 20cm (L) and may not exceed these dimensions at any point after the game has commenced.
- The robot's maximum weight, including batteries, must not exceed 1 kg.
- The robot is permitted a maximum of 4 DC motors, 2 servo motors and 1 mainboard.
- No modifications to the parts are allowed, including bending, sharpening, or altering their shape. All components must remain in their original form.

Game Duration

- Each match consists of 3 rounds, with a maximum duration of 1 minute per round.

Scoring

- Draw: If both robots are still moving and remain within the play field, each robot will be awarded 1 mark.
- Draw: If both robots fall off the play field at the same time, neither robot will receive any marks.
- Win: A robot wins if it pushes at least half of the opponent's robot out of the play field or if the opponent's robot is unable to return to the play field. The winner receives 2 marks, while the loser receives 0 marks.

AUTONOMOUS PUSH-PUSH GAME RULES

Game Play Details

- First whistle
  - Both participants place the robot at the same time on the game field according to the placement criteria, ensuring compliance with the permitted placement guidelines. Not allow to change the robot's position after the placement done. Turn on the robot and ready for remote control. Participant is require to step away 1 foot from the game field and get ready.
- Second whistle
  - The participant use remote control to control the robots and attempt to push opponent off the game field.

Win/Lose Criteria

- The robot that pushes the opponent's robot off the playfield within 1 minute will be declared the winner of the round. If both robots fall off the playfield simultaneously, the round will result in a draw.
- If more than half of the robot's body is pushed outside the playfield (as determined by the referee), or if the robot is unable to return to the ring, it will be considered a loss for the round.
- In the event of a draw after 3 rounds, the participant with the lighter robot will be considered the winner.

AUTONOMOUS PUSH-PUSH GAME RULES

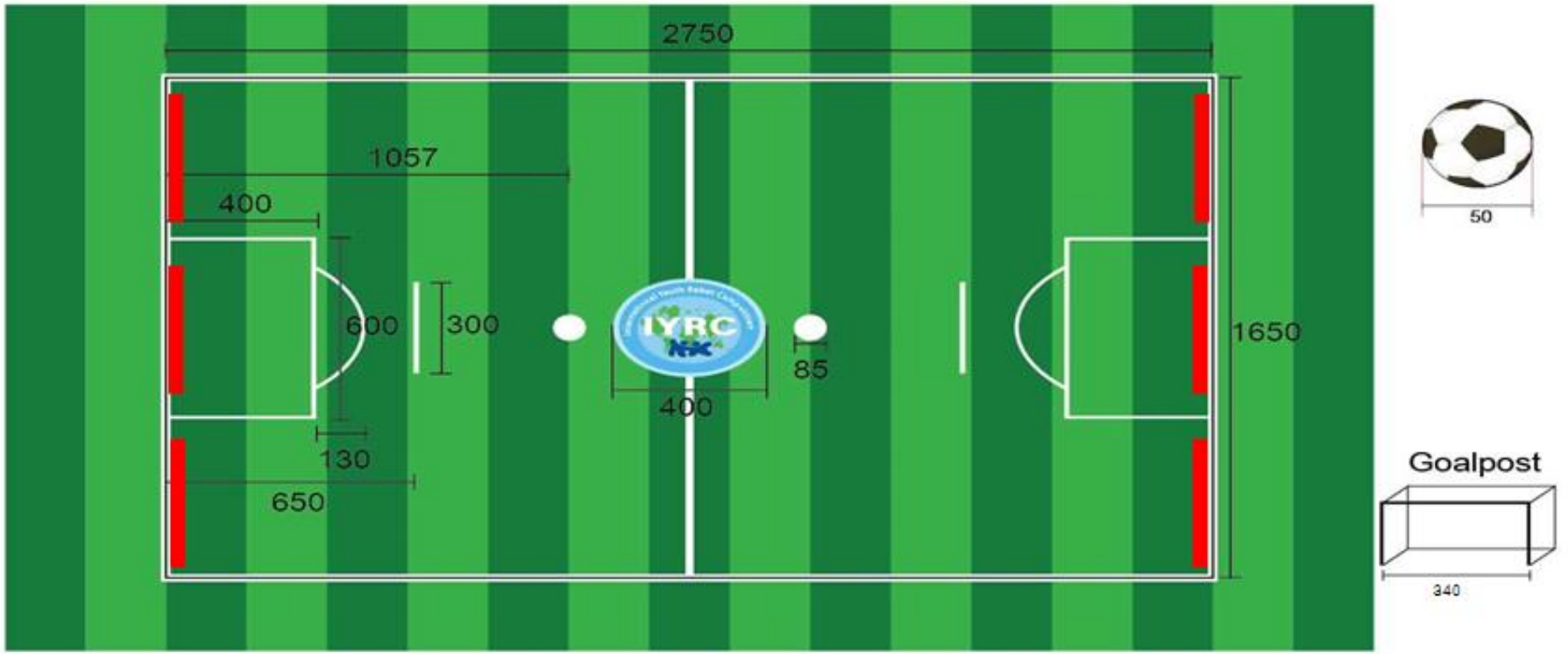
Rules Clarification

- The referee’s decision is considered as final during game play and objections to the referee’s judgement will not be entertained.
- Mentors must not be involved in any rules discussion for the game play.
- Video evidence will not be accepted.
- Once the Head Referee and the game referees have made a decision, no further discussions will be entertained.

JUNIOR : ROBOT SOCCER

Age	**8-13**
Category	Team of 3 (Tournament)
Robot Kits Allowed	MRT Series
Mission	Remote Control robot soccer game
Robot Building	Pre-build soccer robot

ROBOT SOCCER GAME FIELD



Starting position for each team

ROBOT SOCCER GAME RULES

Dimensions and Restrictions

- Initial size shall not exceed 25cm (H) X 25cm (W) X 25cm (L).
- Robots are NOT allowed to expand to any size after the game starts.
- Maximum up to 2 DC motors are allowed.
- Robot cannot be designed with a closed structure to handle the ball. The judge will check the robot structure before the competition starts.
- Participants have to bring their own laptop computer.

Game Duration

- Each game is stipulated for 3 minutes.
- Each match is stipulated for 2 rounds with each round's duration for a maximum of 1.5 minute. After the end of each round the players are to switch to the opposite side of the game field. (Only apply to Semi-final and Final game)
- Extension of rounds is only when both sides have the same score. The extension round would be for a maximum of 1 minute. At the event of the same score after the extension round penalty shoot out will commence until a winner is found.

Starting Position

- Each team will place their robot's in front of starting position as indicated in Soccer Game Field diagram before the match/round begins.

AI ROBOT SOCCER GAME RULES

Game Play Details

- Team roles :
  - 1 Defender & 2 Strikers
- Defender
  - cannot leave own area (own half of the field), therefore cannot enter opponents area.
  - allowed to enter own penalty area with non-stop movement to protect the goal, but is **Not Allowed** more than 10 continuous seconds inside the penalty area or being stationary (not moving) inside penalty area.
- Striker
  - Allowed to enter both own and opponent's area
  - Allowed to enter opponent's penalty area to score goal, but not more than 10 continuous seconds inside opponent's penalty area.
  - Not allowed to enter own penalty area.

ROBOT SOCCER GAME RULES

Game Play Details

- Fouls:
  - Any offender will be issued a yellow card. Upon receiving 2 yellow cards within a match, the player will be removed from play for 1 minute. After 1 minute the offender can re-enter the game field upon referee's approval. If an offender receives it's 4th yellow card within a match they are removed from play for the rest of the match.
  - When a goal is scored but at the same time or immediately before a foul is made by the same team who scored the goal, the goal would not be valid. (eg: when defender enters opponent's area when goal is scored)
- Type of fouls:
  - A robot that purposely block the ball against the side of the field and does not move.
  - A Defender that enters the opponent area
  - A Striker that enters own penalty area
  - A Defender or Striker that stays inside the penalty area for more than 10 continuous seconds
  - A Defender that purposely not moving in own penalty area to block the goal post
  - A participant who ignores the instruction of the referee
- Dead Ball:
  - When the ball is held by a robot and not able to move (stalemate) for more than 5 seconds.
  - Referee will blow the whistle and all robots must stop. Referee will place the ball accordingly to the situation and the game will resume with referee's instruction.
  - If this happens more than 3 consecutive times, the ball will be placed at the middle and all robots are to return to their starting position.

AI ROBOT SOCCER GAME RULES

Game Play Details

- Penalty shoot-out in the event of a draw (only apply to defender robot):
  - Ball will be placed on the white dot.
  - Robot should start its movement in the mid field circle to hit/push the ball into the goal without any part of the robot's body crossing the white line.
  - 3 attempts will be given for each team to score as many goals possible.
  - If both teams has the same score after the 3 attempts a Sudden Death will occur.
- Sudden Death:
  - Each team will send 1 representative for the sudden death round. The representative has 1 chance for a penalty shoot-out. If one team manages to score while the other did not, the scoring team will be the winner. In the event that both teams scores or misses a 1v1 match will begin.
  - The first team to score in the 1v1 match will be the winner.

Scoring

- Each goal is 1 point awarded to the scoring team.
- A goal occurs when the ball is being pushed/hit/rolled into the goal post passing the line.

Win/Lose Criteria

- The team with the most goals wins.

JUNIOR : COMMUNICATION MASTER III

Age	7 - 9 years old
Category	Individual
Robot Kits	CodeSpark 1
Mission	Remote control and autonomous
Robot Building	Pre-built robot On-site card swiping (90 minutes)
Scoring	Mission Score > Time taken
Game Duration	1 attempt: 5 minutes max Total 2 continuous attempts ~ 10 minutes max

JUNIOR : COMMUNICATION MASTER III

1. Problem Background

In this mission, robots help scientists transport dinosaur specimens between different laboratory areas. Several colored dinosaur specimens will be placed on platforms in the field. The robot must collect these specimens and bring them back to the specimen storage area.

At the beginning, participants will use remote control to move the robot to the task platforms, push the colored specimens down, and bring them back to the storage area.

After all specimens are collected, the robot will switch to automatic mode. Using color recognition, the robot must deliver each colored specimen from the storage area to the matching colored grid (laboratory area).

Each time, the robot can only transport one specimen. The robot must return to the storage area before delivering the next specimen.

On-site mission announcement:

1. The starting position of the robot.
2. Props placement position.
3. Position of the specimen storage area, where collected specimens will be stored and where the robot will start the autonomous mission.

JUNIOR : COMMUNICATION MASTER III

2. Robot Dimension and Weight

2.1. The initial size of the robot at the starting box shall not exceed 25cm (H) x 25cm (W) x 25cm (L).

2.2. Robots are ALLOWED to expand to any size after the game starts.

3. Restriction on Robot Design

3.1. Only CodeSpark educational robot kits and parts are to be used to build the robot. There is no limitation to the number of blocks used to build the robot.

3.2. Mainboard requirement:

3.2.1. Code Spark : CodeSpark 1 (Support card programming mainboard)

3.3. Programming platform: Card swiping and card reader.

3.4. Only allowed to use maximum up to 2 DC motors and 1 mainboard.

3.5. The usage of CodeSpark series sensors such as color sensor , touch sensor and so on are allowed, with no limitation, based on requirement.

3.6. Robots shall not damage any part of the field or obstacles deliberately.

3.7. Robots are only allowed to use the original battery case of the robotics kits.

3.8. Total battery voltage cannot exceed 8V.

JUNIOR : COMMUNICATION MASTER III

3.9. VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.

3.10. Participants must bring their own remote control, which must be paired with their robot before the competition date. The remote and robot should also be tested during the training phase to ensure proper functionality and no pairing issue.

4. General Game Rules

4.1. On-the-Spot Announcements and coding

4.1.1. Some mission details, such as starting positions and props placement, storage area will be announced on the spot, before the competition starts.

4.1.2. Participants will be quarantined and given a maximum of **90 minutes to program**, modify, or test their robot.

4.1.3. Participants must complete all coding in the coding zone before testing their robot. Coding at the testing field is not allowed.

4.1.4. Tables and seats will be prepared for participants.

4.1.5. Participants should bring all required tools themselves (e.g., robot, card reader, programming card etc.)

4.1.6. Participants are not allowed to use any communication devices, such as phones or walkie-talkies.

4.1.7. The use of communication applications (WhatsApp Web, Telegram, Messenger, etc.) is strictly prohibited during the coding session.

JUNIOR : CMOMMUNICATION MASTER III

4.1.8. Robot sharing is not allowed during the competition.

4.1.9. Once participants are satisfied with their robot's performance, they may pack up all belongings, including the robot, and leave the coding zone. After leaving, participants are not allowed to re-enter the coding zone.

4.2. Robot Placement and Starting

4.2.1. Upon being called, participants must place their robot completely inside the starting box.

4.2.2. The robot must remain in the starting box until the game begins.

4.2.3. Participants may place the robot in any orientation (facing up, down, left , right) according to their strategy.

4.2.4. Participants may start (switch on) the robot using a single switch, and the timer begins when the robot moves after the whistle signals the start.

4.3. The first mission is remote control.

4.3.1. Participants will freely control their robot within the competition field to complete the mission, which is to collect the dinosaur specimens and bring them to the specimen storage area.

4.4. Autonomous phase:

4.4.1. After collecting the three specimens, participants must control the robot to return to the specimen storage area.

JUNIOR : CMOMMUNICATION MASTER III

4.4.2. Participants are only allowed to touch the robot when it is inside the specimen storage area.

4.4.3. During this time, participants may place all three specimen cubes outside the specimen storage area.

4.4.4. The robot must be positioned inside the specimen storage area with only one specimen cube placed on or inside the robot.

4.4.5. Participants may then switch the robot to autonomous mode to transport the specimen cubes from the storage area to the designated laboratory grids.

4.4.6. During this phase, participants may reprogram their robot if necessary, but the competition time will continue and will not be paused.

4.4.7. Participants may choose the order of delivering the specimen cubes, but each cube must be placed in the matching colored grid (red → red grid, blue → blue grid, green → green grid).

4.4.8. The robot may transport only one specimen cube at a time.

4.4.9. A cube is considered successfully delivered when it is fully inside the matching colored box.

JUNIOR : CMOMMUNICATION MASTER III

4.5. Example of programming card

The programming cards include motion type cards, condition type cards, and timer cards. Participants must program the main controller correctly by swiping the appropriate cards according to the competition requirements in order to achieve the event objectives.

JUNIOR : CMOMMUNICATION MASTER III

4.6. Match Format

4.6.1. Each match consists of one round with 2 continuous attempts.

4.6.2. Each attempt is 5 minutes, but the match may end earlier if:

4.6.2.1. All tasks are completed and the robot successfully returns and stops at the finishing line.

4.6.2.2. Participants are disqualified.

4.6.2.3. The referee judges that continuation is impossible (e.g., robot stuck for more than 10 seconds).

4.6.2.4. Both attempts have been used.

4.6.2.5. The robot is stuck and cannot complete a mission.

4.7. Disqualification

4.7.1. Participants will be disqualified from the attempt if:

- Not show up within 2 minutes upon calling.

5. Scoring

5.1. Mission score breakdown:

5.1.1. Starting of the robot- the robot leave the starting zone completely : **10 points**

JUNIOR : CMOMMUNICATION MASTER III

5.1.2. Successfully push the specimen from the platform: **20 points / each**

5.1.3. Successfully carry the specimen from the platform: **20 points / each**

5.1.4. Successfully put the specimen to the designated color box : **20 points / each**

5.1.5. Successfully return and stop at the starting zone: **10 points**

5.2. If the robot gets stuck at a certain mission and cannot move during the game, the score will be based on the missions already completed.

5.3. The winner is based on mission completion and time taken.

5.4. Only the highest score from either of the two attempts will be considered as the final result.

5.5. If more than one participant achieves the same score, the ranking will be determined based on the time taken to achieve their highest score.

5.6. If both the score and time (from the highest-scoring attempt) are still the same, the winner will be decided based on the mission score of their other attempt.

JUNIOR : CMOMMUNICATION MASTER III

6. Game Field

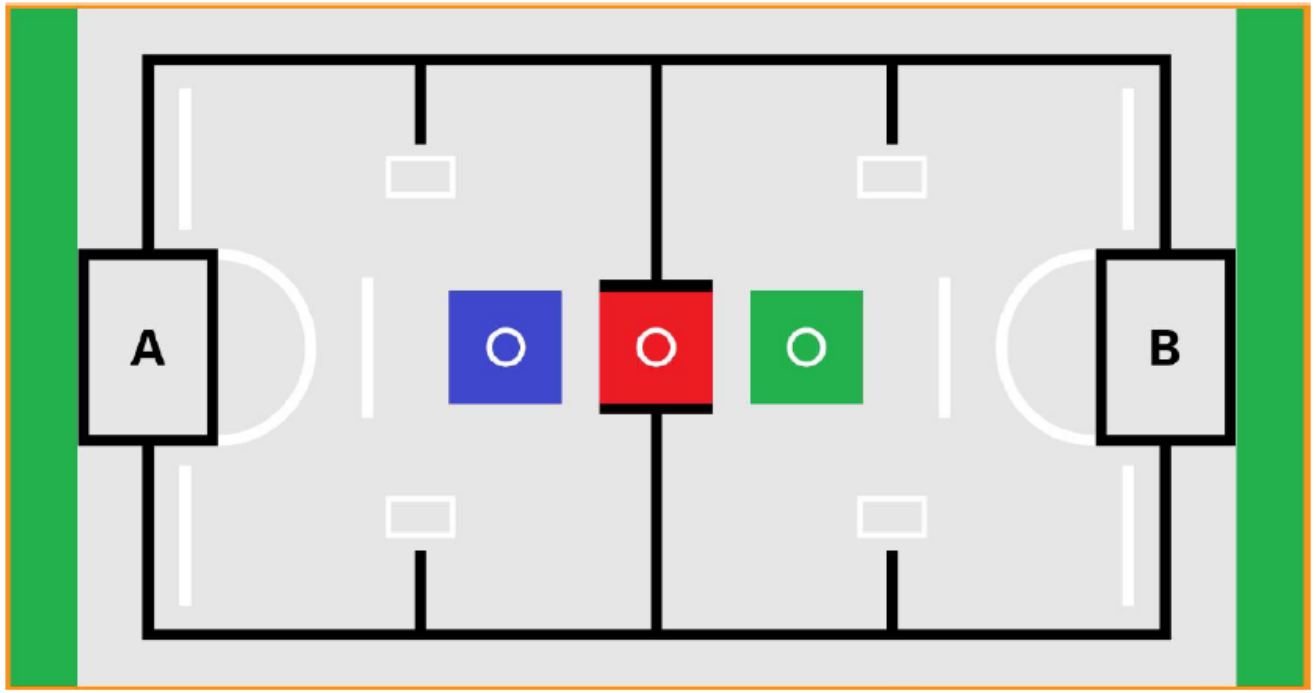
6.1. The dimension of the game field is 8ft (L) x 4ft (W).

6.2. The 4 white color boxes labelled will be the position to place the mission props, only three mission props will be placed on the game field, the position will announce on the spot.

6.3. A and B indicate the placement of the robot and also serve as the specimen storage areas.

6.4. The specimens are 5 cm × 5 cm × 5 cm in size and made of EVA foam. There are three colors: green, red, and blue.

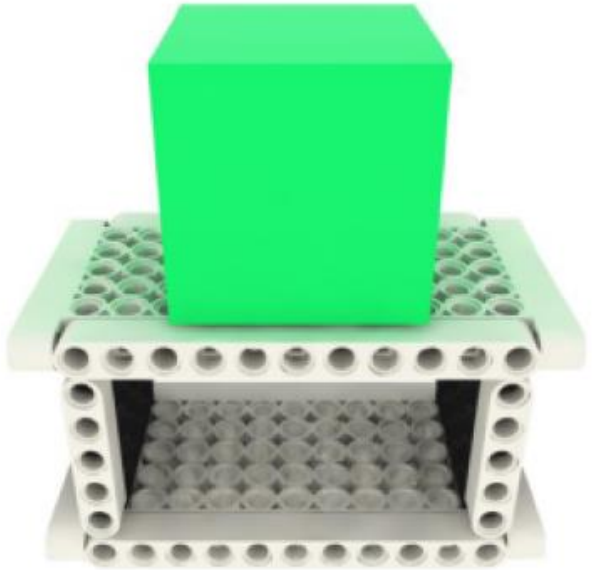
6.5. Three colored boxes (red, green, and blue) are the destination areas where the robot must deliver the cubes according to their colors.



JUNIOR : CMOMMUNICATION MASTER III

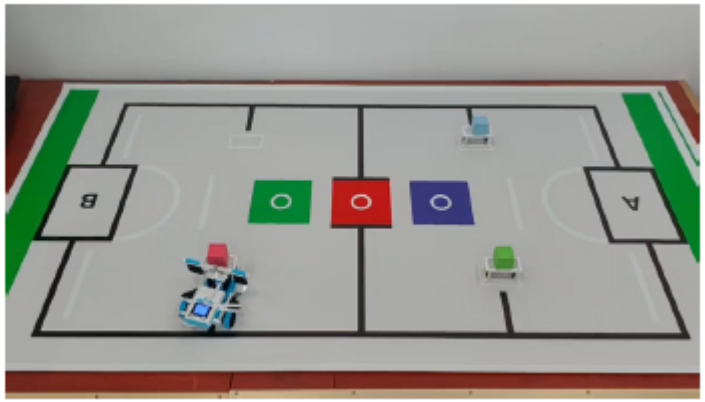
7. Props

5cm x 5cm x 5cm EVA foam



Placement of the EVA foam on the platform

JUNIOR : WANDERING PLANET III

Age	A: 9 - 12 years old (Age based on year)	
Category	Individual	
Robot Kits	CodeSpark 2/ 3	
Mission	Line tracing to complete the mission	
Robot Building	Pre-built line tracing robot On-site programming and testing (90 minutes)	
Scoring	Mission Score > Time taken	
Game Duration	1 attempt: 3 minutes max Total 2 continuous attempts ~ 6 minutes max	

JUNIOR : WANDERING PLANET III

1. Problem Background

In this mission, robots must locate and transport dinosaur specimens from a prehistoric field to the opposite laboratory. Specimens—such as fossilized bones, teeth, claws, or eggs—will be placed on the field. Scientists only require specific specimens to be collected and brought back to the laboratory for further investigation. Any specimens not required must be pushed off the platform.

Each robot will start from one laboratory (Lab A or Lab B), which will be announced at the beginning of the mission. The robot must follow the line path, identify the specimens that need to be transported, and carry them safely to the opposite laboratory, while avoiding unnecessary specimens. Once all required specimens are delivered, the robot must stop at the starting area.

This challenge tests the robot's autonomous navigation, decision-making, precision, and control, simulating the real-world task of safely transporting fragile specimens between research sites.

JUNIOR : WANDERING PLANET III

On-site mission announcement:

4. The starting position of the robot (Lab A or B)
5. The position of the specimens
6. The specimens that need to be carried back to the laboratory or pushed down from the platform.

2. Robot Dimension and Weight

2.1. The initial size of the robot at the starting box shall not exceed 25cm (H) x 25cm (W) x 25cm (L).

2.2. Robots are ALLOWED to expand to any size after the game starts.

3. Restriction on Robot Design

3.1. Only CodeSpark educational robot kits and parts are to be used to build the robot. There is no limitation to the number of blocks used to build the robot.

3.2. Mainboard requirement:

3.2.1. Code Spark : CodeSpark 2 or CodeSpark 3

3.3. Programming platform: MRT friends or Thonny

3.4. Only allowed to use maximum up to 4 DC motors, 5 IR sensors or 1 tracer board and 1 mainboard.

3.5. The usage of CodeSpark series sensors such as servo motors, color sensors and so on are allowed, with no limitation amount, based on requirement.

JUNIOR : WANDERING PLANET III

3.6. Robots shall not damage any part of the field or obstacles deliberately.

3.7. Robots are only allowed to use the original battery case of the robotics kits.

3.8. Total battery voltage cannot exceed 8V.

3.9. VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.

4. General Game Rules

4.1. On-the-Spot Announcements and coding

4.1.1. Some mission details, such as starting positions and props placement, will be announced on the spot, before the competition starts.

4.1.2. Participants will be quarantined and given a maximum of **90 minutes to program**, modify, or test their robot.

4.1.3. Participants must complete all coding in the coding zone before testing their robot. Coding at the testing field is not allowed.

4.1.4. Tables and seats will be prepared for participants.

4.1.5. Participants should bring all required tools themselves (e.g., robot, download cable,extension cable etc.)

JUNIOR : WANDERING PLANET III

4.1.6. Only MRTfriends (Version 3.3.94) or Thonny are allowed.

4.1.7. Participants are not allowed to use any communication devices, such as phones or walkie-talkies.

4.1.8. The use of communication applications (WhatsApp Web, Telegram, Messenger, etc.) is strictly prohibited during the coding session.

4.1.9. Laptop sharing is not allowed, if the participant needs a laptop, they can borrow from the organizer (advance notice to organizer required 3 weeks prior).

4.1.10. Robot sharing is not allowed during the competition.

4.1.11. Once participants are satisfied with their robot's performance, they may pack up all belongings, including the robot, and leave the coding zone. After leaving, participants are not allowed to re-enter the coding zone.

4.1.12. Participants are encouraged to bring their own laptop.

4.2. Robot Placement and Starting

4.2.1. Upon being called, participants must place their robot completely inside the starting box.

4.2.2. The robot must remain in the starting box until the game begins.

4.2.3. Participants may place the robot in any orientation (facing up or down) according to their strategy.

JUNIOR : WANDERING PLANET III

4.2.4. Participants may start (switch on) the robot using a single switch, and the timer begins when the robot moves after the whistle signals the start.

4.2.5. The robot must always be able to perform line tracing, follow the black line track. The robot must not deviate from the black line for more than 3 seconds.

4.2.6. During the game, participants are NOT ALLOWED to touch or hold the robot.

4.3. Match Format

4.3.1. Each match consists of one round with 2 continuous attempts.

4.3.2. Each attempt is 3 minutes, but the match may end earlier if:

4.3.2.1. All tasks are completed and the robot successfully returns and stops at the finishing line.

4.3.2.2. Participants are disqualified.

4.3.2.3. The referee judges that continuation is impossible (e.g., robot stuck for more than 10 seconds).

4.3.2.4. Both attempts have been used.

4.3.2.5. The robot is stuck and cannot complete a mission.

JUNIOR : WANDERING PLANET III

4.4. Disqualification

4.4.1. Participants will be disqualified from the attempt if:

- Robot not following the track.
- The robot deviated from the track for more than 3 seconds.
- Not show up within 2 minutes upon calling.

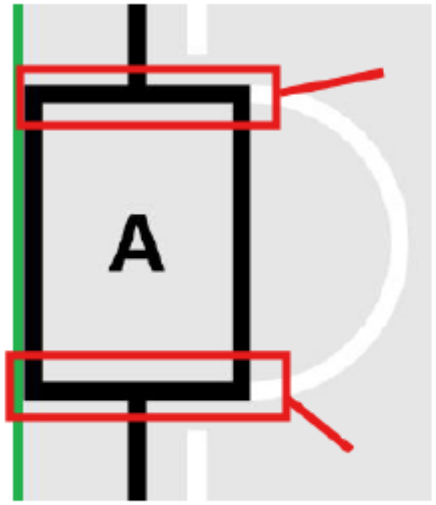
JUNIOR : WANDERING PLANET III

5. Mission break down

5.1. Group A

Age Group	9 - 12 years old
Category	Individual line tracing mission
Robot Building	CodeSpark
On-site mission	1. The starting zone (Lab A or Lab B) 2. The position of the three specimen and platform (4 white boxes choose 3) 3. The specimen that needs to be carried back (1) and pushed down (2).
Mission	1. The robot must start automatically from the starting zone, either Lab A or Lab B, and follow the line path to perform line tracing 2. The robot must push **two** specimens off the platform. 3. The robot must carry **one** specimen from the platform to the opposite laboratory (if starting from Lab A, deliver to Lab B, and vice versa). 4. During the transportation of the specimen, the specimen cannot touch the ground 5. The robot must stop at the starting zone, touching the boundary box no matter which direction.

JUNIOR : WANDERING PLANET III

	 Example of stopping position

JUNIOR : WANDERING PLANET III

6. Scoring

6.1. Mission score breakdown:

6.1.1. Starting of the robot- the robot leave the starting zone completely : **10 points**

6.1.2. Successfully push the specimen from the platform: **20 points / each**

6.1.3. Successfully carry the specimen from the platform: **20 points / each**

6.1.4. Successfully put the specimen to the designated Lab(if start at A , then put to B: **20 points / each**

6.1.5. Successfully return and stop at the starting zone: **10 points**

6.2. If the robot gets stuck at a certain mission and cannot move during the game, the score will be based on the missions already completed.

6.3. The winner is based on mission completion and time taken.

6.4. Only the highest score from either of the two attempts will be considered as the final result.

JUNIOR : WANDERING PLANET III

6.5. If more than one participant achieves the same score, the ranking will be determined based on the time taken to achieve their highest score.

6.6. If both the score and time (from the highest-scoring attempt) are still the same, the winner will be decided based on the mission score of their other attempt.

6.7. If all are still the same then, the time taken for that other attempt will be taken to determine the winner.

7. Game Field

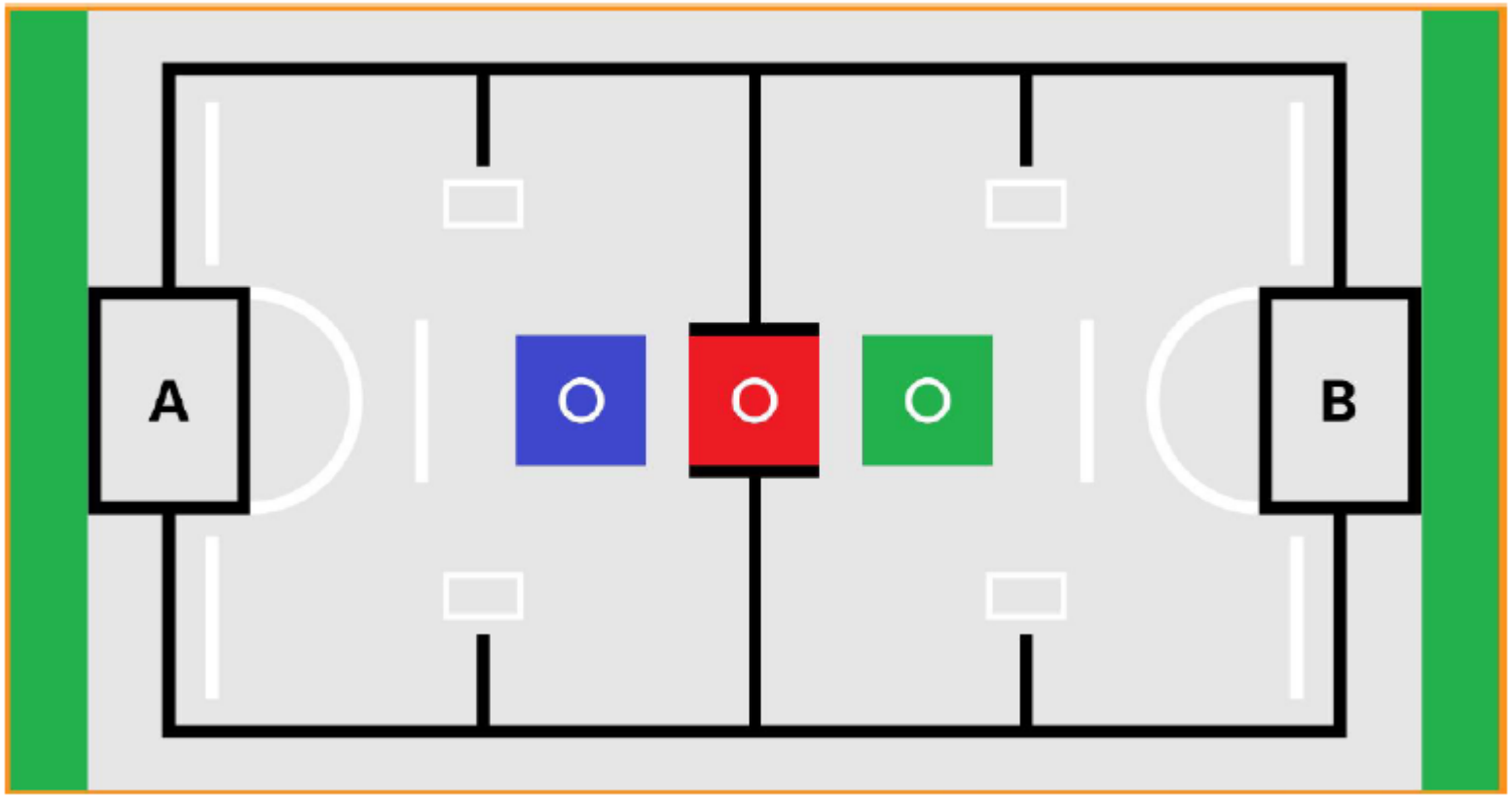
7.1. The dimension of the game field is 8ft (L) x 4ft (W).

7.2. The line tracing track is black and has a width of 2.4 cm. The white border is 4 cm located at the left and right of the black line track.

7.3. The 4 white color boxes labelled will be the position to place the mission props, only three mission props will be placed on the game field, the position will announce on the spot.

7.4. The specimens are 5 cm × 5 cm × 5 cm in size and made of EVA foam. There are three colors: green, red, and blue.

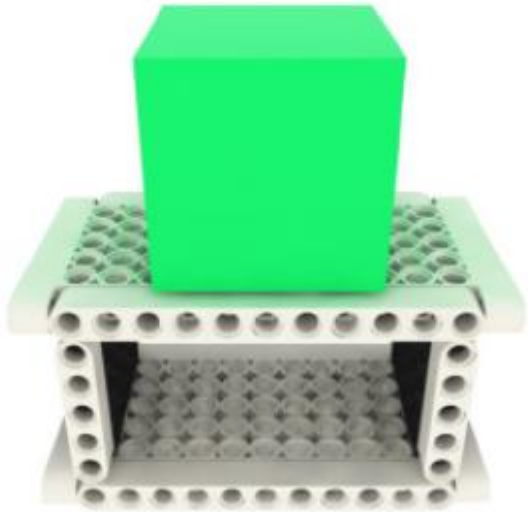
JUNIOR : WANDERING PLANET III



JUNIOR : WANDERING PLANET III

8. Props

5cm x 5cm x 5cm EVA foam



Placement of the EVA foam on the platform

SENIOR CATEGORY

Save the Forest

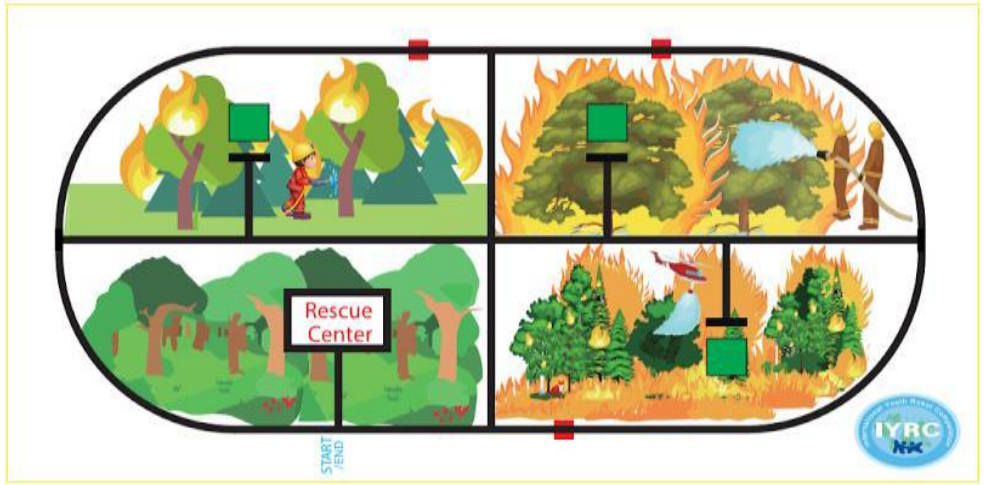
Robot Volleyball

Autonomous Push-Push

Wandering Planet III

SENIOR : SAVE THE FOREST

Age	13-18
Category	Individual Timed Mission
Robot Kits Allowed	MRT Series
Mission	Robot runs automatically to trace the black line to complete missions
Robot Building	Pre-build & on-site programming



SAVE THE FOREST GAME FIELD

Note: Maze wall height is 12cm

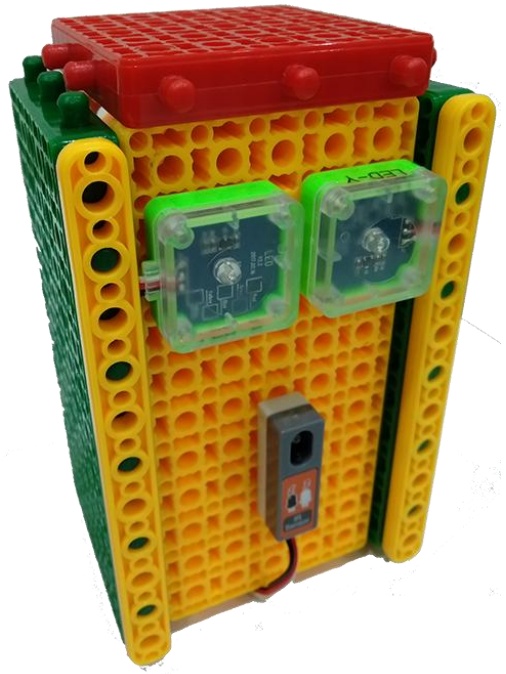
SURVIVORS

Survivor to be placed on red spots and need to carry by robot to the rescue center.

PUT OUT FIRE TRIGGER

Height of IR sensor from ground : 5.5 cm

Place on green spots. Initially Red LED on, after triggered, Green LED will be turned on.



SAVE THE FOREST GAME RULES

Dimensions and Restriction

- Initial size shall not exceed 20cm (H) X 20cm (W) X 20cm (L).
- Robots are Not allowed to expand to any size after the game starts.
- Maximum 4 DC motors, 5 IR sensors, 2 servo motors, 1 tracer sensor block and 1 mainboard.

Game Duration

- Each participant is given a maximum of 3 hours to perform the coding and testing of the robot
- Each match is stipulated for 2 rounds with a total duration for a maximum 3 minutes.
- Game may end before 3 minutes when :
    - Completion of 2 rounds
    - Disqualification of a participant
    - When referee judges that the continuation of the match is impossible

SAVE THE FOREST GAME RULES

Quarantine

- During the 3 hours given to perform the coding and testing, all participants are quarantine for said period of time.
- Participants are allowed to do testing and modify the robot during the 3 hours given.
- Once participant is satisfied with the performance of the robot, they may hand over the robot to the referee before the 3 hours is up.
- No more programming or modification is allowed once the 3 hours is up or if the participant hands over the robot to the referee earlier.
- Participants would then wait for their turn to be called for the match.

Game Play Details

- Robot should stay behind the starting line (distance from starting line to the Robot IR sensors not exceed 5cm) and facing west (R&R map position as the reference). Timer starts when the robot's IR sensors cross the starting line.
- Whistle will be blown as a sign of start of the match.
- Participant is allowed to start (switch on) the robot using single switch operation.

SAVE THE FOREST GAME RULES

Scoring

- Carry all 3 survivors to the rescue center – fully inside the rescue center box. (Each survivor 10 points)
- Put out fire means Green LED on. (Each 10 points)
- Stop at the Start/End line at the end of the game play. (20 points)

Disqualify

- Participant touch the robot or items on the game field during the game play.
- Stalemate of more than 5 sec.
- Not tracing the line for more than 5 sec.

Win/Lose Criteria

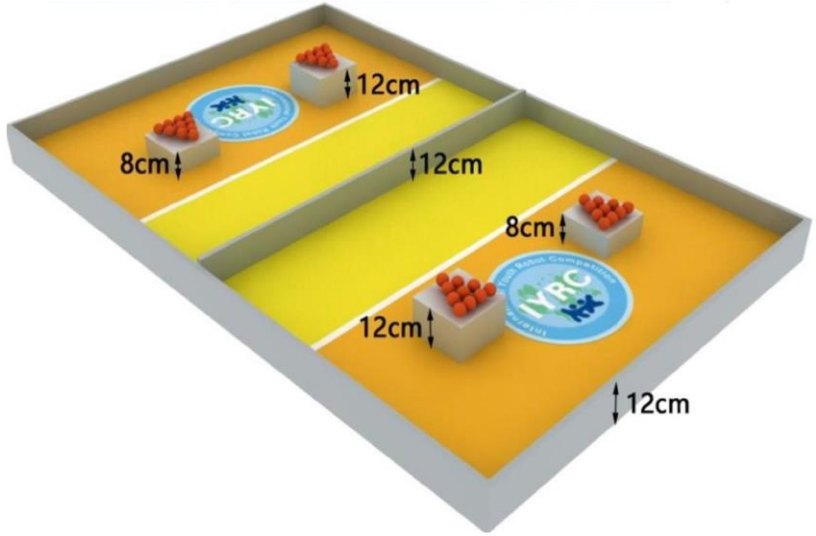
- Highest score of the two attempts will be used for ranking of winners.
- Participant with the highest score is the winner. If there are two or more participants with the same score, the lowest time recorded to finish the mission is the winner.
- If the points and time of both participants are the same, the participant who is younger would be the winner.

SAVE THE FOREST SCORE EXAMPLE

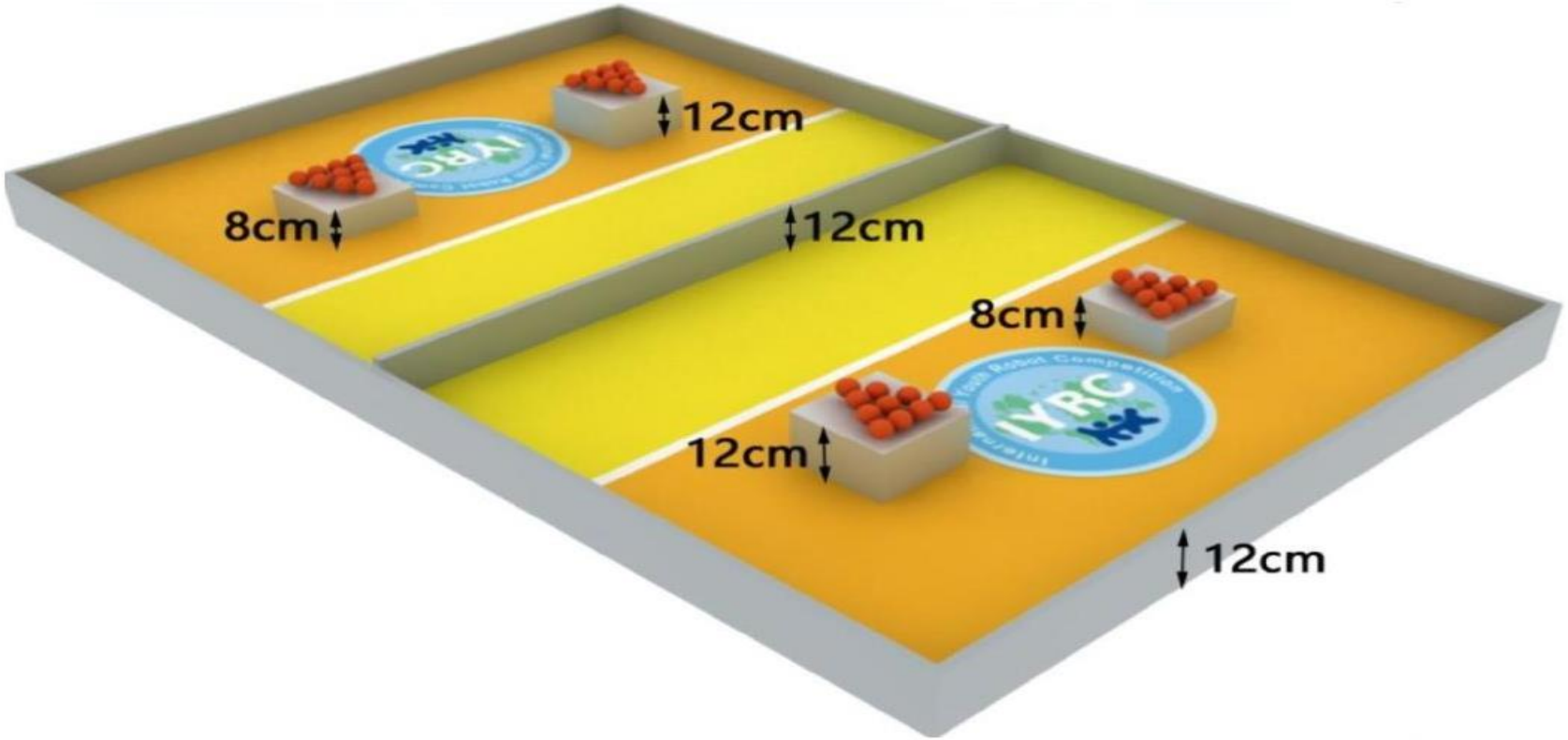
Child	Survivor rescued	Put out fire	Stop at Start/End line	Total Points	Time Taken	Rank
A (15yo)	30	20	20	70	160	2
B (13yo)	30	20	20	70	160	1
C	20	20	20	60	170	3
D	20	10	20	50	140	4

SENIOR : ROBOT VOLLEYBALL

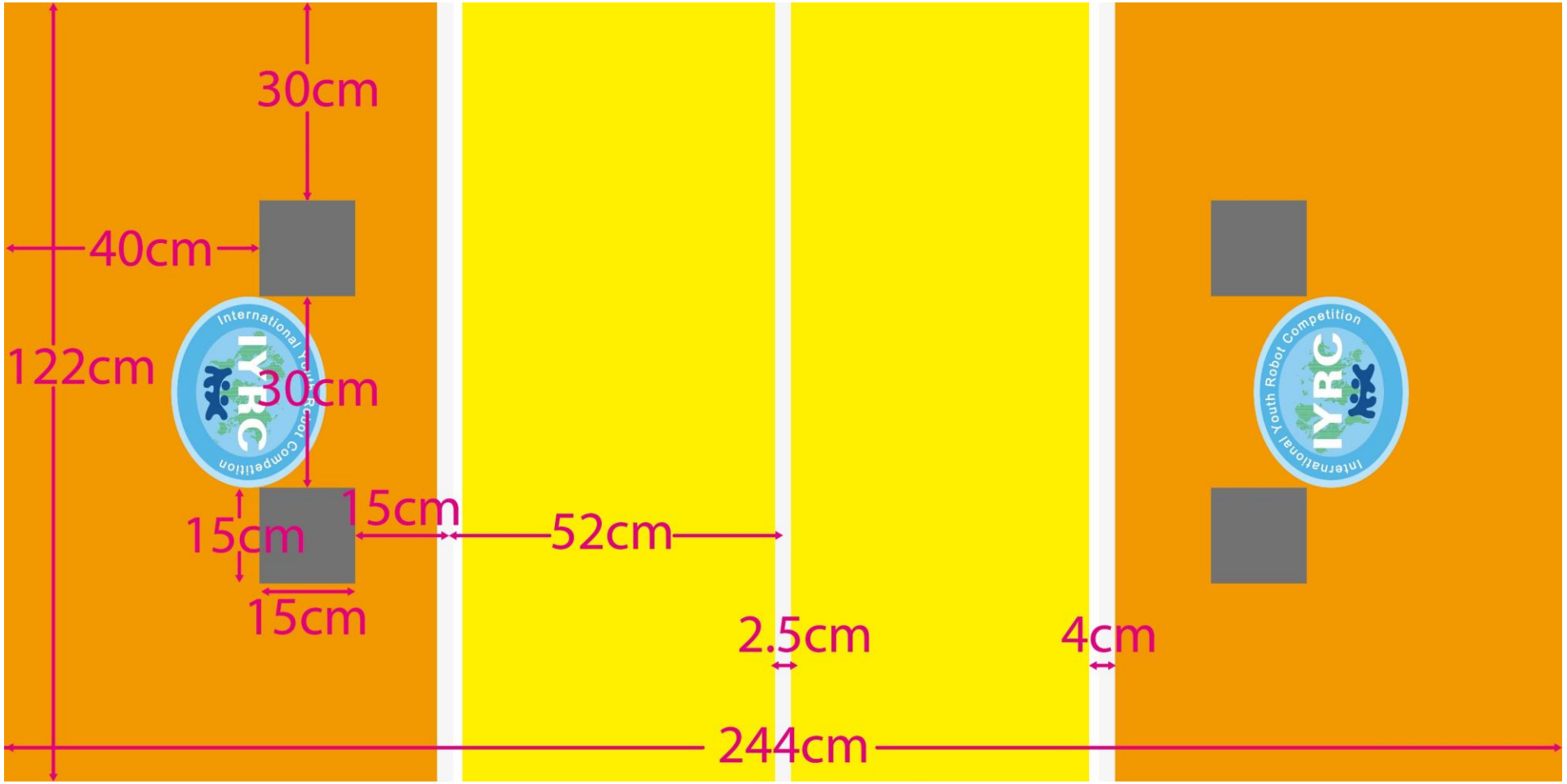
Age	**13-18**
Category	2 vs 2 Tournament
Robot Kits Allowed	MRT Series & HUNA educational robot kit
Mission	Remote control robot to transfer table tennis balls into opponent's field
Robot Building	Pre-build remote control robot



ROBOT VOLLEYBALL GAME FIELD



ROBOT VOLLEYBALL GAME FIELD



ROBOT VOLLEYBALL GAME RULES

Dimensions and Restrictions

- Initial size shall not exceed 25cm (H) X 25cm (W) X 25cm (L). However, robots are allowed to expand to any size after the game starts
- Maximum up to 2 DC motors, 2 servo motors and 1 mainboard are allowed

Game Duration

- Each match is stipulated for 1 round with a duration for a maximum of 3 minutes.
- Extension of rounds is only when both sides have the same score. Each round extension would be for a maximum of 30 seconds and 1 robot from each team will be chosen to compete in the current state of the game field to determine the final winning team.
- Game may end before 3 minutes when :
    - One team manages to throw all balls into opponent field
    - Disqualification of both participants from the same team

ROBOT VOLLEYBALL GAME RULES

Game Play Details

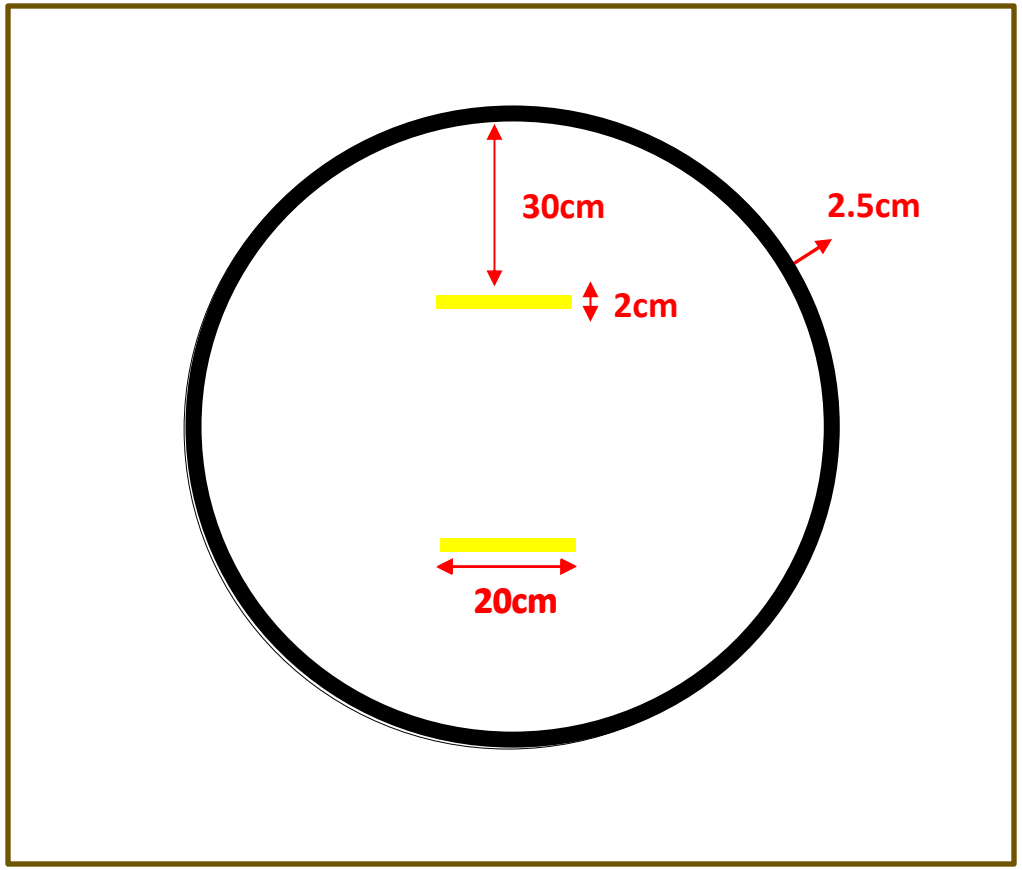
- Each team will have 20 table tennis balls placed on top of two different height towers in their own field.
- Each team can deploy any tactics or manoeuvres to grab or collect the table tennis balls from the tower and transfer them into the opponents' field.
- If the table tennis ball is thrown outside the field, the ball will be put back to the side where the ball was thrown out from by the referee.

Win/Lose Criteria

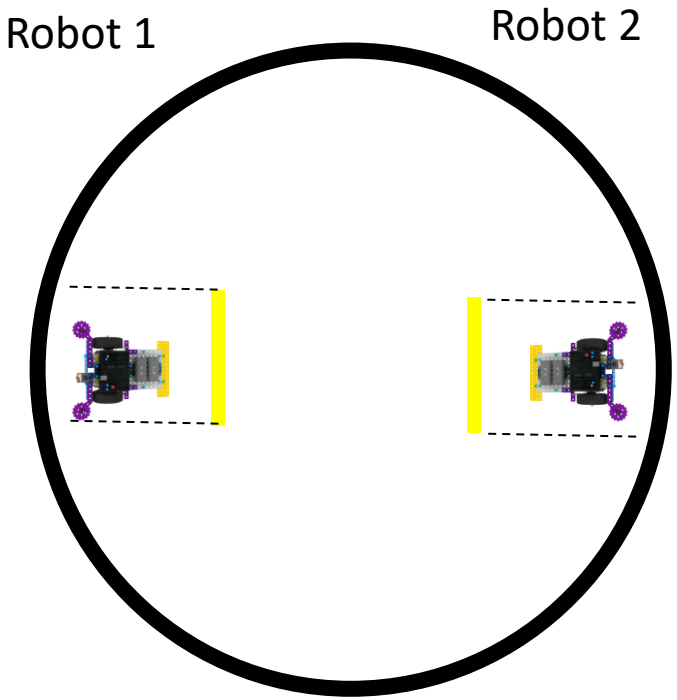
- Draw : Both sides have equal number of balls thrown to the other side.
- Win : Team which has the most number of tennis balls thrown to the opponent's side or have successfully thrown all tennis balls over to the opponent's side before the time ends.
- Lose : Team which has the least number of tennis balls thrown to the opponent's side or have all team members removed from play due to foul or disqualification.

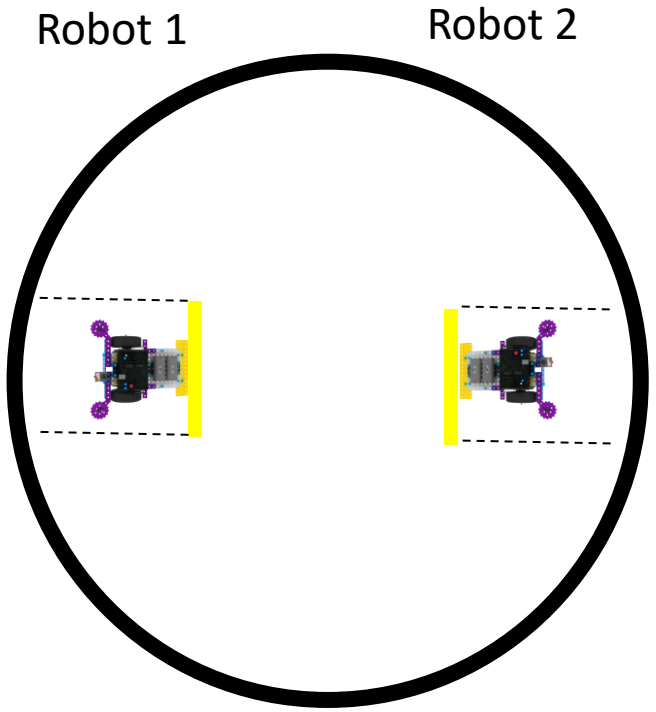
SENIOR : AUTONOMOUS PUSH PUSH

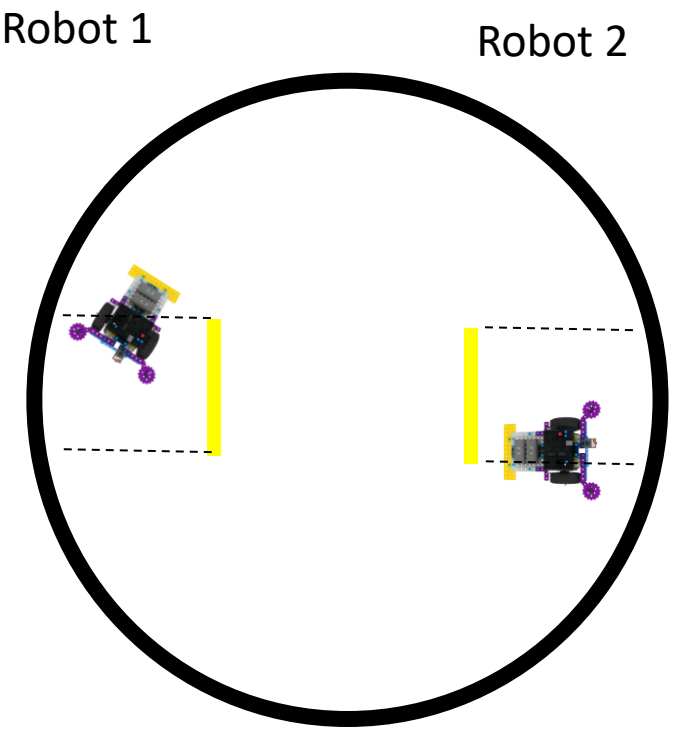
Age	**13-18**
Category	1 vs 1 Tournament
Robot Kits Allowed	MRT Series educational robot kit (Exclude Kicky and Brain kit)
Mission	Autonomous robot to push opponent out of the ring
Robot Building	Pre-build autonomous robot



AUTONOMOUS PUSH-PUSH ROBOT PLACEMENT







Robots are allow to place in any position on the game field as long as the wheel is in the imagery extension line.

AUTONOMOUS PUSH-PUSH GAME RULES

Dimensions, Weight and Restrictions

- The robot must adhere to a maximum size of 20cm (H) x 20cm (W) x 20cm (L) and may not exceed these dimensions at any point after the game has commenced.
- The robot's maximum weight, including batteries, must not exceed 1 kg.
- The robot is permitted a maximum of 4 DC motors, 3 touch sensors, 3 IR sensors, 2 servo motors, 1 ultrasonic sensor, and 1 mainboard.
- The robot can be programmed with a maximum of three strategies, each activated separately by the touch sensors. During each round, only one strategy can be activated, initiated by pressing one of the touch sensors.
- No modifications to the parts are allowed, including bending, sharpening, or altering their shape. All components must remain in their original form.

Game Duration

- Each match consists of 3 rounds, with a maximum duration of 1 minute per round.

Scoring

- Draw: If both robots are still moving and remain within the play field, each robot will be awarded 1 mark.
- Draw: If both robots fall off the play field at the same time, neither robot will receive any marks.
- Win: A robot wins if it pushes at least half of the opponent's robot out of the play field or if the opponent's robot is unable to return to the play field. The winner receives 2 marks, while the loser receives 0 marks.

AUTONOMOUS PUSH-PUSH GAME RULES

Game Play Details

- First whistle
  - Both participants place the robot at the same time on the game field according to the placement criteria specified for the selected strategy, ensuring compliance with the permitted placement guidelines. Not allow to change the robot’s position after the placement done.
- Second whistle
  - Press the touch sensor / turn on the robot to activate the selected strategy. Once activated, participants must step back and maintain a distance of at least one foot from the game field. The robot will then begin engaging the opponent autonomously, attempting to push opponent off the game field.

Win/Lose Criteria

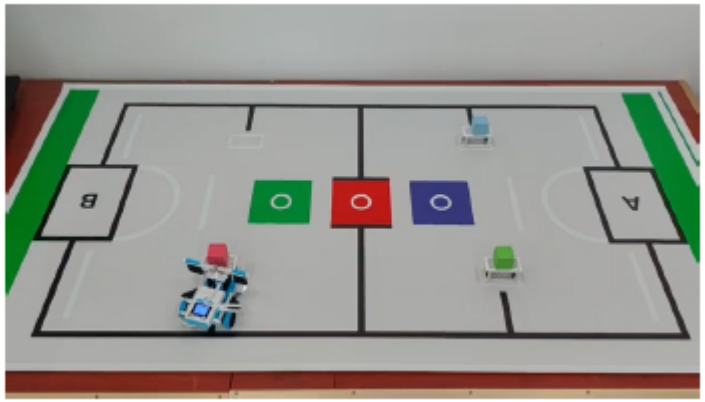
- The robot that pushes the opponent's robot off the playfield within 1 minute will be declared the winner of the round. If both robots fall off the playfield simultaneously, the round will result in a draw.
- If more than half of the robot's body is pushed outside the playfield (as determined by the referee), or if the robot is unable to return to the ring, it will be considered a loss for the round.
- In the event of a draw after 3 rounds, the participant with the lighter robot will be considered the winner.

AUTONOMOUS PUSH-PUSH GAME RULES

Rules Clarification

- The referee’s decision is considered as final during game play and objections to the referee’s judgement will not be entertained.
- Mentors must not be involved in any rules discussion for the game play.
- Video evidence will not be accepted.
- Once the Head Referee and the game referees have made a decision, no further discussions will be entertained.

SENIOR : WANDERING PLANET III

Age	B: 13 - 18 years old (Age based on year)	
Category	Individual	
Robot Kits	CodeSpark 2/ 3	
Mission	Line tracing to complete the mission	
Robot Building	Pre-built line tracing robot On-site programming and testing (90 minutes)	
Scoring	Mission Score > Time taken	
Game Duration	1 attempt: 3 minutes max Total 2 continuous attempts ~ 6 minutes max	

JUNIOR : WANDERING PLANET III

1. Problem Background

In this mission, robots must locate and transport dinosaur specimens from a prehistoric field to the opposite laboratory. Specimens—such as fossilized bones, teeth, claws, or eggs—will be placed on the field. Scientists only require specific specimens to be collected and brought back to the laboratory for further investigation. Any specimens not required must be pushed off the platform.

Each robot will start from one laboratory (Lab A or Lab B), which will be announced at the beginning of the mission. The robot must follow the line path, identify the specimens that need to be transported, and carry them safely to the opposite laboratory, while avoiding unnecessary specimens. Once all required specimens are delivered, the robot must stop at the starting area.

This challenge tests the robot's autonomous navigation, decision-making, precision, and control, simulating the real-world task of safely transporting fragile specimens between research sites.

JUNIOR : WANDERING PLANET III

On-site mission announcement:

4. The starting position of the robot (Lab A or B)
5. The position of the specimens
6. The specimens that need to be carried back to the laboratory or pushed down from the platform.

2. Robot Dimension and Weight

2.1. The initial size of the robot at the starting box shall not exceed 25cm (H) x 25cm (W) x 25cm (L).

2.2. Robots are ALLOWED to expand to any size after the game starts.

3. Restriction on Robot Design

3.1. Only CodeSpark educational robot kits and parts are to be used to build the robot. There is no limitation to the number of blocks used to build the robot.

3.2. Mainboard requirement:

3.2.1. Code Spark : CodeSpark 2 or CodeSpark 3

3.3. Programming platform: MRT friends or Thonny

3.4. Only allowed to use maximum up to 4 DC motors, 5 IR sensors or 1 tracer board and 1 mainboard.

3.5. The usage of CodeSpark series sensors such as servo motors, color sensors and so on are allowed, with no limitation amount, based on requirement.

JUNIOR : WANDERING PLANET III

3.6. Robots shall not damage any part of the field or obstacles deliberately.

3.7. Robots are only allowed to use the original battery case of the robotics kits.

3.8. Total battery voltage cannot exceed 8V.

3.9. VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.

4. General Game Rules

4.1. On-the-Spot Announcements and coding

4.1.1. Some mission details, such as starting positions and props placement, will be announced on the spot, before the competition starts.

4.1.2. Participants will be quarantined and given a maximum of **90 minutes to program**, modify, or test their robot.

4.1.3. Participants must complete all coding in the coding zone before testing their robot. Coding at the testing field is not allowed.

4.1.4. Tables and seats will be prepared for participants.

4.1.5. Participants should bring all required tools themselves (e.g., robot, download cable,extension cable etc.)

JUNIOR : WANDERING PLANET III

4.1.6. Only MRTfriends (Version 3.3.94) or Thonny are allowed.

4.1.7. Participants are not allowed to use any communication devices, such as phones or walkie-talkies.

4.1.8. The use of communication applications (WhatsApp Web, Telegram, Messenger, etc.) is strictly prohibited during the coding session.

4.1.9. Laptop sharing is not allowed, if the participant needs a laptop, they can borrow from the organizer (advance notice to organizer required 3 weeks prior).

4.1.10. Robot sharing is not allowed during the competition.

4.1.11. Once participants are satisfied with their robot's performance, they may pack up all belongings, including the robot, and leave the coding zone. After leaving, participants are not allowed to re-enter the coding zone.

4.1.12. Participants are encouraged to bring their own laptop.

4.2. Robot Placement and Starting

4.2.1. Upon being called, participants must place their robot completely inside the starting box.

4.2.2. The robot must remain in the starting box until the game begins.

4.2.3. Participants may place the robot in any orientation (facing up or down) according to their strategy.

JUNIOR : WANDERING PLANET III

4.2.4. Participants may start (switch on) the robot using a single switch, and the timer begins when the robot moves after the whistle signals the start.

4.2.5. The robot must always be able to perform line tracing, follow the black line track. The robot must not deviate from the black line for more than 3 seconds.

4.2.6. During the game, participants are NOT ALLOWED to touch or hold the robot.

4.3. Match Format

4.3.1. Each match consists of one round with 2 continuous attempts.

4.3.2. Each attempt is 3 minutes, but the match may end earlier if:

4.3.2.1. All tasks are completed and the robot successfully returns and stops at the finishing line.

4.3.2.2. Participants are disqualified.

4.3.2.3. The referee judges that continuation is impossible (e.g., robot stuck for more than 10 seconds).

4.3.2.4. Both attempts have been used.

4.3.2.5. The robot is stuck and cannot complete a mission.

JUNIOR : WANDERING PLANET III

4.4. Disqualification

4.4.1. Participants will be disqualified from the attempt if:

- Robot not following the track.
- The robot deviated from the track for more than 3 seconds.
- Not show up within 2 minutes upon calling.

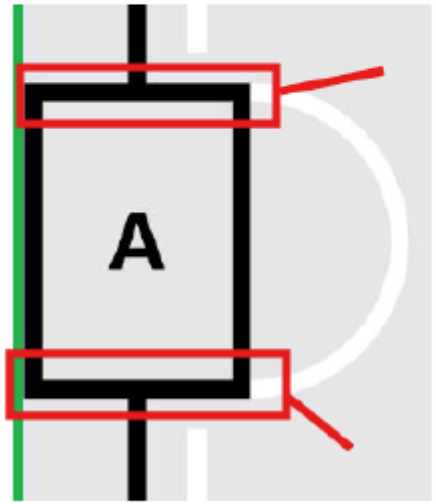
JUNIOR : WANDERING PLANET III

5. Mission break down

Age Group	13 - 18 years old
Category	Individual line tracing mission
Robot Building	CodeSpark
On-site mission	1. The starting zone (Lab A or Lab B) 2. The position of the three specimen and platform (4 white boxes choose 3) 3. The specimen that needs to be carried back (1) and pushed down (2).
Mission	1. The robot must start automatically from the starting zone, either Lab A or Lab B, and follow the line path to perform line tracing 2. The robot must push **one** specimen off the platform. 3. The robot must carry **two** specimens from the platform to the opposite laboratory (if starting from Lab A, deliver to Lab B, and vice versa).

JUNIOR : WANDERING PLANET III

4. During the transportation of the specimen, the specimen cannot touch the ground.
5. The robot must stop at the starting zone, touching the boundary box no matter which direction.



Example of stopping position

JUNIOR : WANDERING PLANET III

6. Scoring

6.1. Mission score breakdown:

6.1.1. Starting of the robot- the robot leave the starting zone completely : **10 points**

6.1.2. Successfully push the specimen from the platform: **20 points / each**

6.1.3. Successfully carry the specimen from the platform: **20 points / each**

6.1.4. Successfully put the specimen to the designated Lab(if start at A , then put to B: **20 points / each**

6.1.5. Successfully return and stop at the starting zone: **10 points**

6.2. If the robot gets stuck at a certain mission and cannot move during the game, the score will be based on the missions already completed.

6.3. The winner is based on mission completion and time taken.

6.4. Only the highest score from either of the two attempts will be considered as the final result.

JUNIOR : WANDERING PLANET III

6.5. If more than one participant achieves the same score, the ranking will be determined based on the time taken to achieve their highest score.

6.6. If both the score and time (from the highest-scoring attempt) are still the same, the winner will be decided based on the mission score of their other attempt.

6.7. If all are still the same then, the time taken for that other attempt will be taken to determine the winner.

7. Game Field

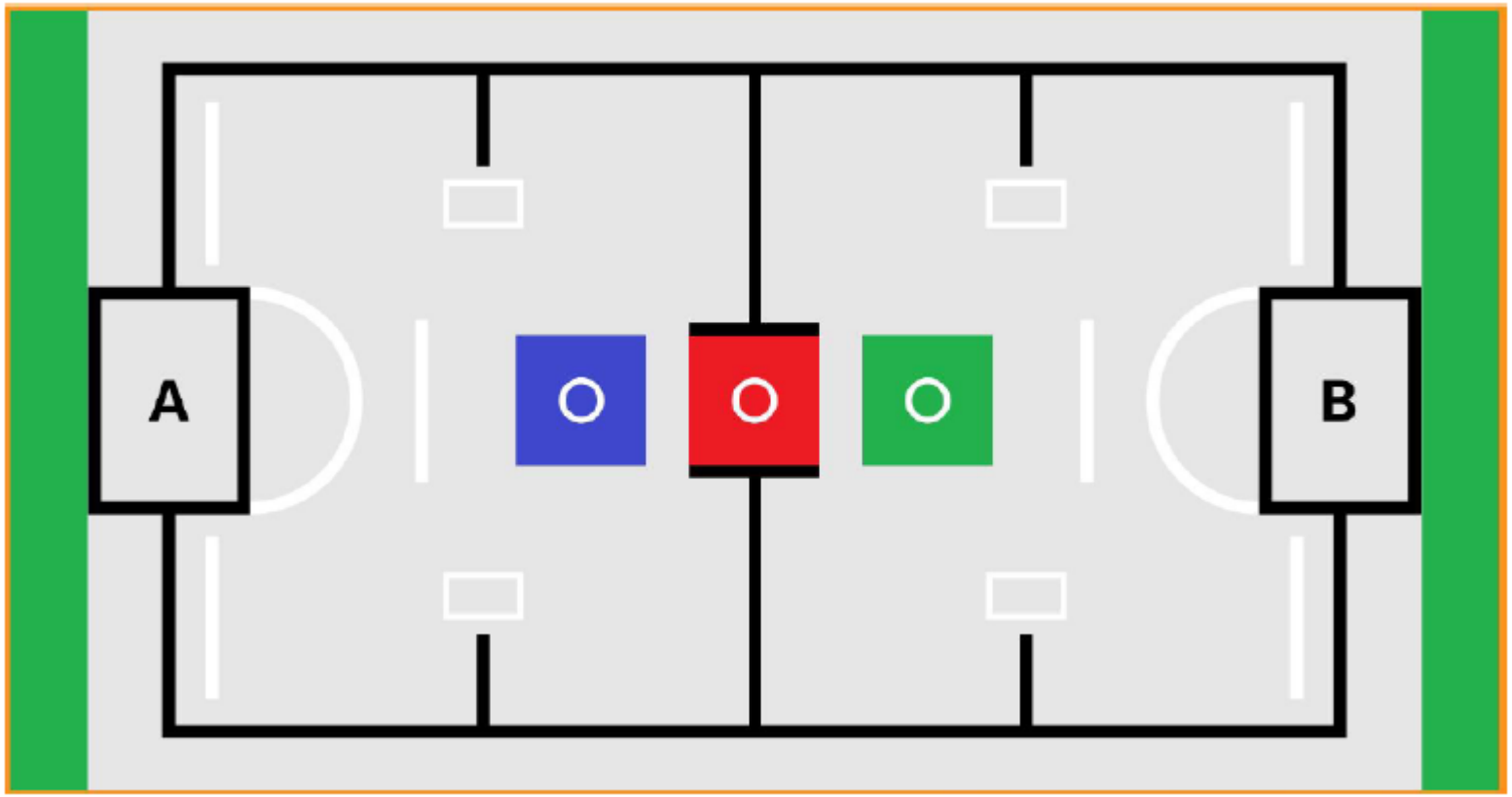
7.1. The dimension of the game field is 8ft (L) x 4ft (W).

7.2. The line tracing track is black and has a width of 2.4 cm. The white border is 4 cm located at the left and right of the black line track.

7.3. The 4 white color boxes labelled will be the position to place the mission props, only three mission props will be placed on the game field, the position will announce on the spot.

7.4. The specimens are 5 cm × 5 cm × 5 cm in size and made of EVA foam. There are three colors: green, red, and blue.

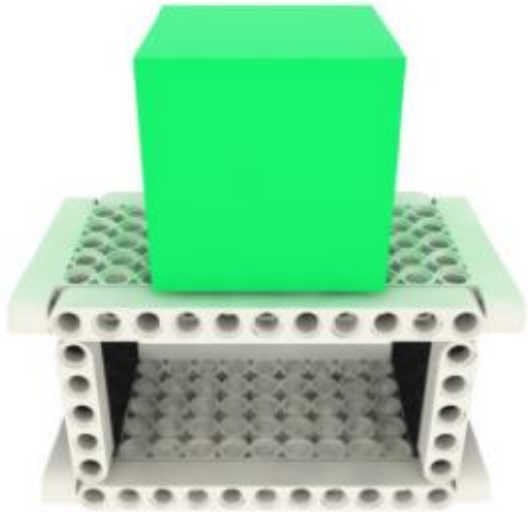
JUNIOR : WANDERING PLANET III



JUNIOR : WANDERING PLANET III

8. Props

5cm x 5cm x 5cm EVA foam



Placement of the EVA foam on the platform

COMPULSORY

Creative Robot Design (Junior + Senior)

“Jurassic Intelligence X AI Innovation”

CREATIVE ROBOT DESIGN (Compulsory)

Age	Junior & Senior
Category	Grouping (3 people max in a team)
Robot Kits Allowed	MRT series product, included CodeSpark (Can combine)
Mission	Combination of robotic and technical presentation based on Theme given
Robot Building	Pre-build
Game Method	On-site presentation and demonstration
Game Duration	5 minutes (include 2 minutes Q&A)

CREATIVE ROBOT DESIGN

1. **Robot Dimension and Weight**
   1.1 The size and weight of the robot is not limited.

2. Theme (Choose one of the below category)

Category 1 : Jurassic Intelligence.

Step into a world millions of years in the past—an untamed land where survival depends on instinct, adaptation, and intelligence. In **Jurassic Intelligence**, participants are challenged to reimagine prehistoric life through modern robotics by creating machines that behave like dinosaurs in a dynamic ecosystem. This theme encourages you to combine **creativity, storytelling, and intelligent system design**, transforming robotics into an immersive experience where technology brings an ancient world back to life.

Category 2 : SDG Goals (https://sdgs.un.org/goals)

SDG 13 – Climate Action , SDG 14 – Life Below Water (ocean), SDG 15 – Life on Land (forest, wildlife) or SDG 2 – Zero Hunger

Build a robotic system to address the real-world problem based on the theme and present how the system helps solve or prevent challenges related to the theme. Demonstrate key aspects such as effectiveness, reliability, adaptability and ease of use.

CREATIVE ROBOT DESIGN

3. Restriction on Robot Design

3.1. Only MRT series products , including CodeSpark Kits are to be used to build the robot.

3.2. There is no limit on the number of blocks or components used.

3.3. Participants may cross-use parts from the approved MRT / CodeSpark series within the same robot.

3.4. Robots may operate autonomously or via remote control.

3.5. Other materials may be used to enhance the model or robot (e.g. cameras, paper cups, rings, sticks, bottles, 3D-printed parts, drones, future boards, etc.), provided that the main structure and functionality are built using MRT / CodeSpark products.

3.6. AC (Alternating Current) power supplies are strictly prohibited for safety reasons.

3.7. No external power outlets will be provided during the competition.

3.8. Robots shall not cause any danger to the arena & surroundings in any way whatsoever.

3.9. Robots will need to protect their sensors, if necessary, from any outside interference.

CREATIVE ROBOT DESIGN

4. Game Rules

4.1. Participants are required to build their robot in advance. However, each group will be given 2 hours on-site to prepare and set up their robot or model.

4.2. Each group will have 5 minutes for a formal presentation to the referees, followed by a 2-minute Q&A session. However, the presentation time may be adjusted to 3 minutes, depending on the number of participants. The Q&A session will remain 2 minutes.

4.3. In addition to the formal presentation, participants may also be asked to present their robot casually to the audience or visitors at their booth.

4.4. Presentations need to be done in English.

4.5. Robots and models should be displayed on the assigned table. Participants are responsible for ensuring their robot/model is well taken care of during the display period, until judging is complete.

4.6. A poster describing the design/robot is also required.

4.7. The poster size and template of design must follow as in the link : **xxxx**.Participants also can find the example of proposal/document/summary for creative design.

CREATIVE ROBOT DESIGN

4.8. 4 copies of the printed Manual (Presentation File) in English is recommended for the display and referees review, it needs to include:

A. Team name, Robot Name
B. Problem statement
C. Proposed Solutions
D. Team member introduction and task allocation
E. Initial design concept (example: Sketch of the prototype)
F. Final design
G. Product specification and feature
H. Mechanism, electrical/electronic, programing
I. Functionality of robot
J. Future improvements

4.9. There will be two stages in this competition which is the Preliminary stage and Final stage.

4.10. In the Preliminary stage, participants are required to submit a proposal and poster of the project to the google form link. **xxxx**.

4.11. The qualified participants to the final stages will be announced later.

4.12. Final stage presentation will be done on-site, physically.

CREATIVE ROBOT DESIGN

5. Scoring

5.1. Preliminary stages judging criteria:

5.1.1. Creativity & Innovation : 10 marks

- Originality of the robot design.
- Innovative use of materials, components, or technology.
- Unique features or functionalities that distinguish the robot from others

5.1.2. Proposal completeness : 10 marks

- Clear explanation of the project background and story.
- Well-defined assessment criteria or objectives.
- Logical and feasible execution plan.

5.1.3. Prototype sketch/diagram: 10 marks

- Visual appeal and overall quality of the robot design.
- Effective integration of design elements (e.g., color, shape, form) that enhance both appearance and function.

CREATIVE ROBOT DESIGN

5.1.4. Relevance to theme : 10 marks

- How well the robot design aligns with the competition's theme.
- Creativity in interpreting and incorporating the theme into the robot's design and functionality.
- Consistency in representing the theme throughout the project, from concept to execution.

5.2. Final stages judging criteria:

5.2.1. Robot Functionality & Problem Solving: 30 marks

- How effectively the robot/project performs the intended tasks/ or solve the problem statement.
- Reliability, consistency, and efficiency in operation.
- Creativity in solving the real-world problem.

5.2.2. Creativity & Uniqueness: 30 marks

- Originality of the final robot/project design.
- Innovative use of components and materials.

CREATIVE ROBOT DESIGN

- Distinctive features or actions that differentiate the robot/project from others

5.2.3. Presentation Skills: 20 marks

- Clear and engaging explanation of the robot/project, including design, functionality, and problem-solving approach.
- Effective communication of environmental or SDG-related messages.

5.2.4. Critical Thinking & Q&A: 10 marks

- Quality of responses during Q&A, including the ability to justify design choices and explain technical aspects.
- Openness to constructive feedback and willingness to improve design based on suggestions

5.2.5. Teamwork: 10 marks

- Clear distribution of speaking roles and responsibilities during the presentation.
- Ability to support each other, coordinate smoothly, and communicate ideas clearly to the audience.
- Demonstrates joint effort in explaining the project, performing the robot, and engaging the judges.

CREATIVE ROBOT DESIGN

5.3. The participating group with the highest score is the winner **(Preliminary + final stage)** . If there are two or more groups with the same score, the group with the highest final stage presentation score will be the winner

OPEN CATEGORY

Humanoid Robot Mission

Genibot Coding Mission

Game Maker Kit Game Design Challenge

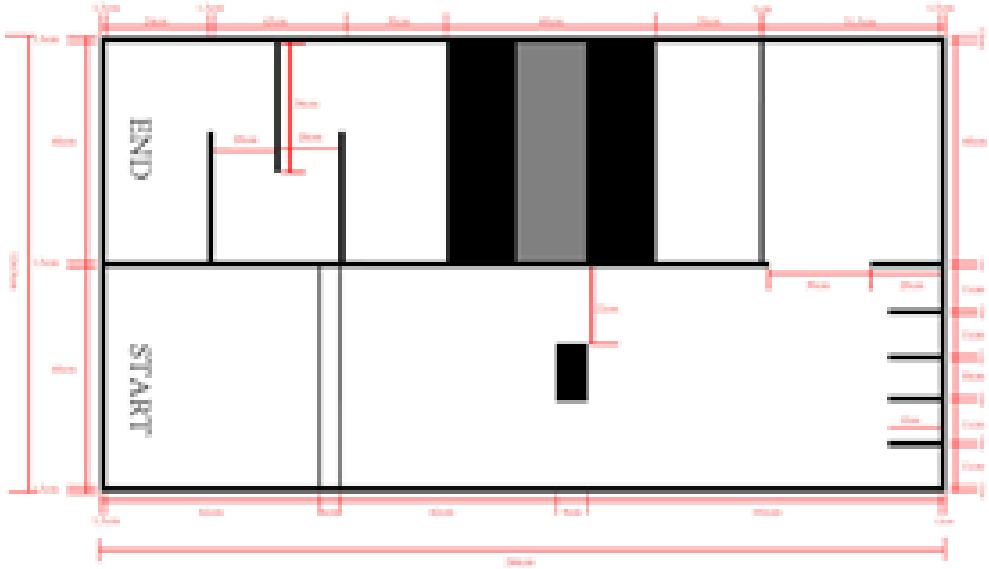
Drone Soccer

Drone Mission

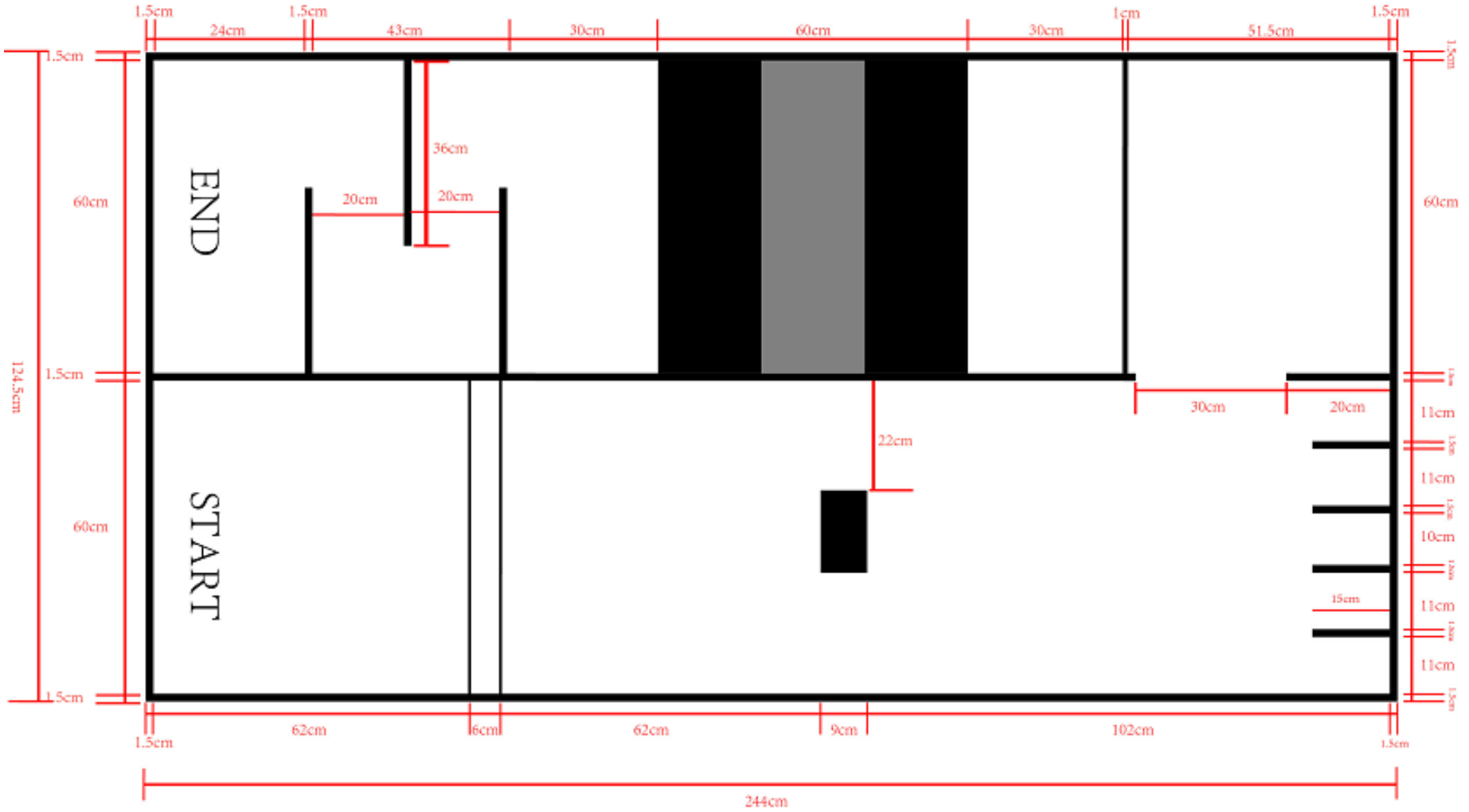
Cocomon GO

OPEN : HUMANOID ROBOT MISSION

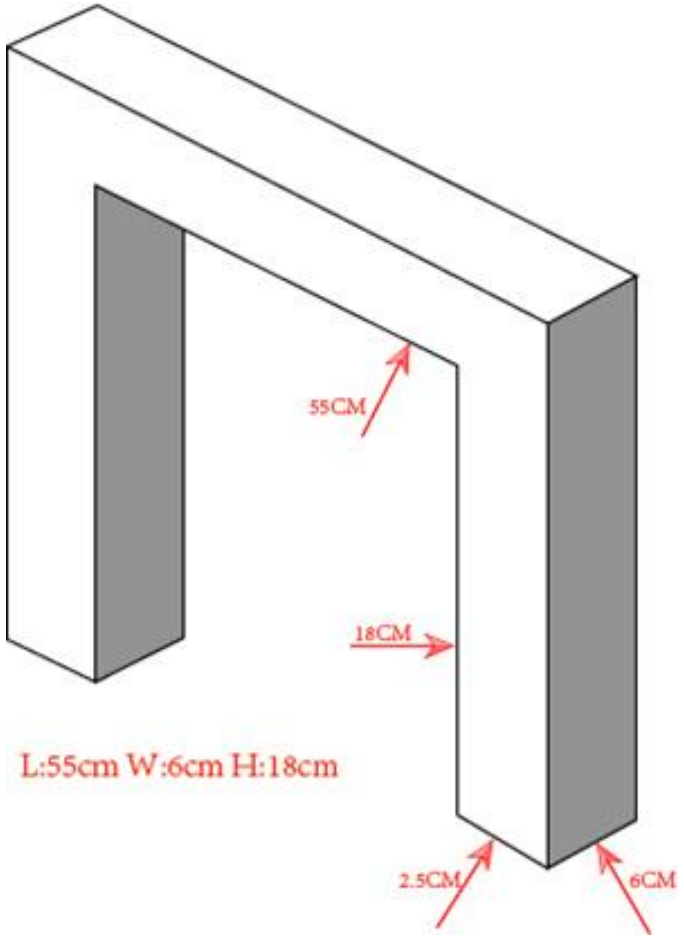
Age	All
Category	Individual Timed Mission
Robot Kits Allowed	MRT LINE Core Humanoid
Mission	Control the humanoid to complete missions
Robot Building	Pre-programmed LINE Core Humanoid



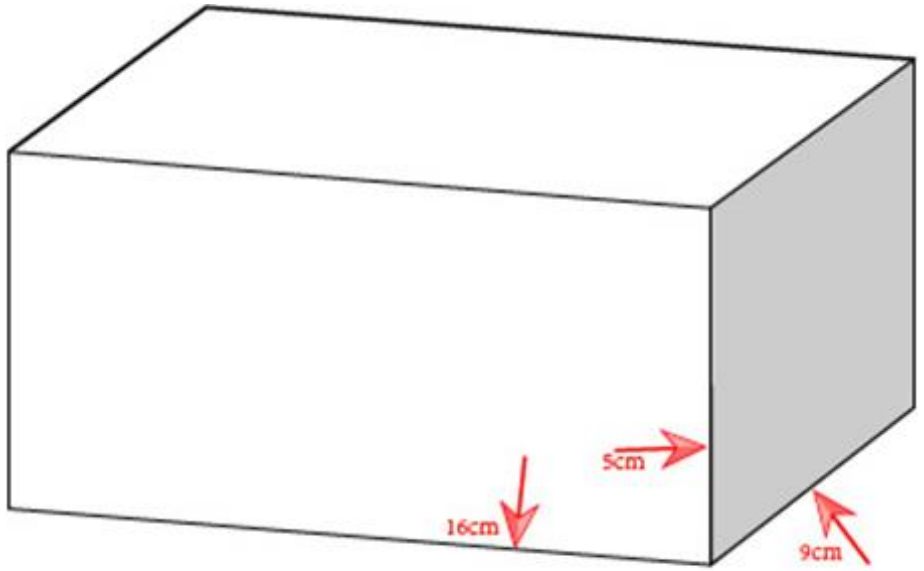
HUMANOID ROBOT MISSION GAME FIELD



MISSION 1

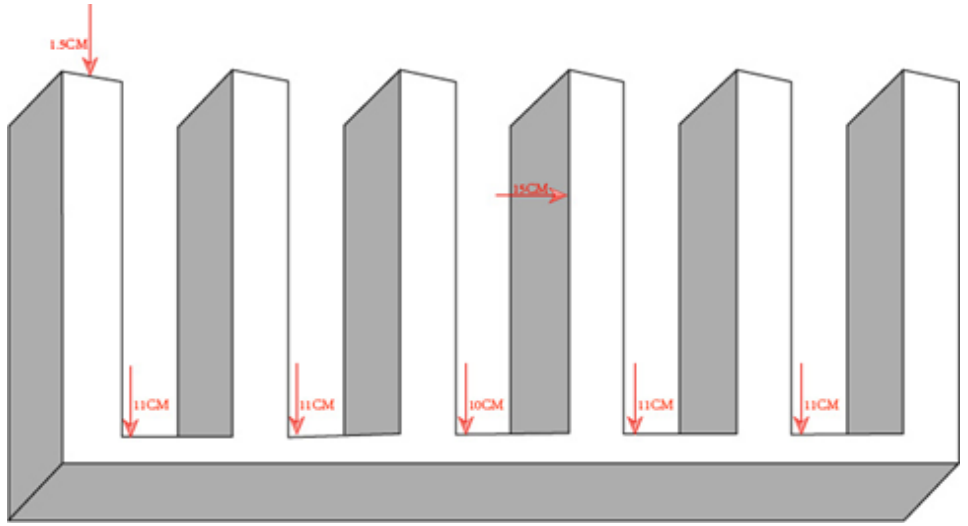


MISSION 2

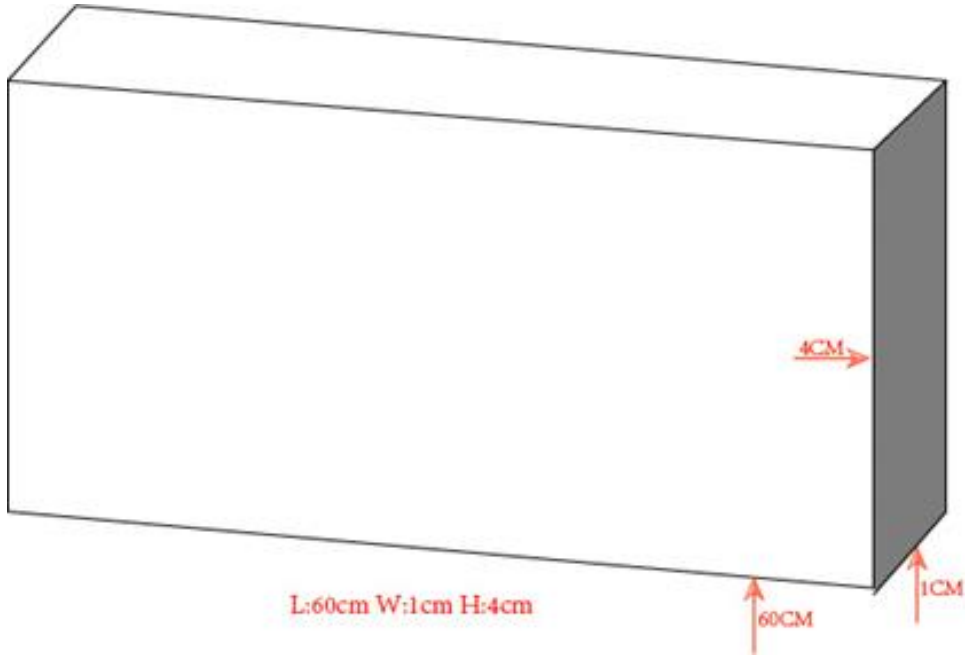


Rectangle: L:16cm W:9cm H:5cm

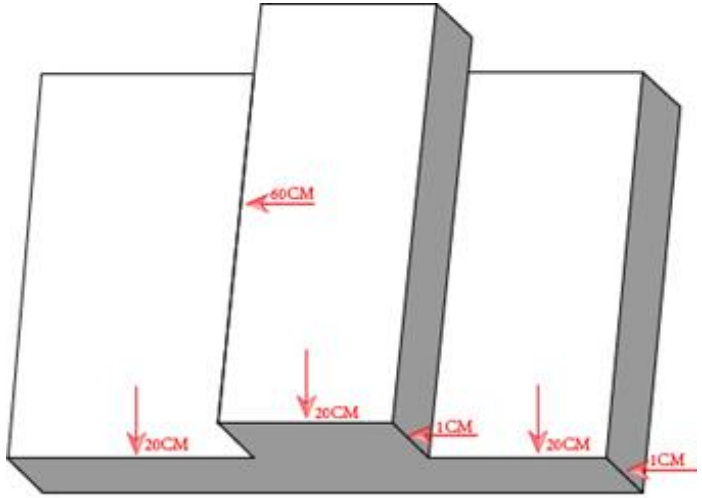
MISSION 3

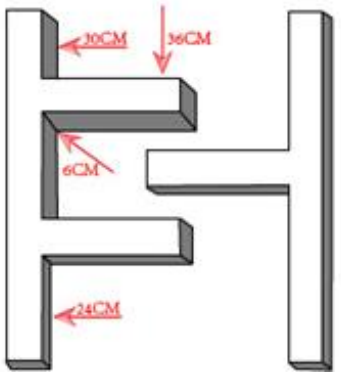


MISSION 4



MISSION 5





HUMANOID ROBOT MISSION GAME RULES

Dimensions and Restrictions

- Only MRT LINE Core Humanoid and its parts are allowed to use.
- The battery specification, length of robot leg and arm should strictly adhere to the instruction manual (LINE Core Humanoid).

Game Duration

- Each match is stipulated for 1 round with a duration for a maximum of 5 minutes.

- Game may end before 5 minutes when :
  - Robot reached the end line.
  - Disqualification of a participant
  - When referee judges that the continuation of the match is impossible

HUMANOID ROBOT MISSION GAME RULES

Game Play Details

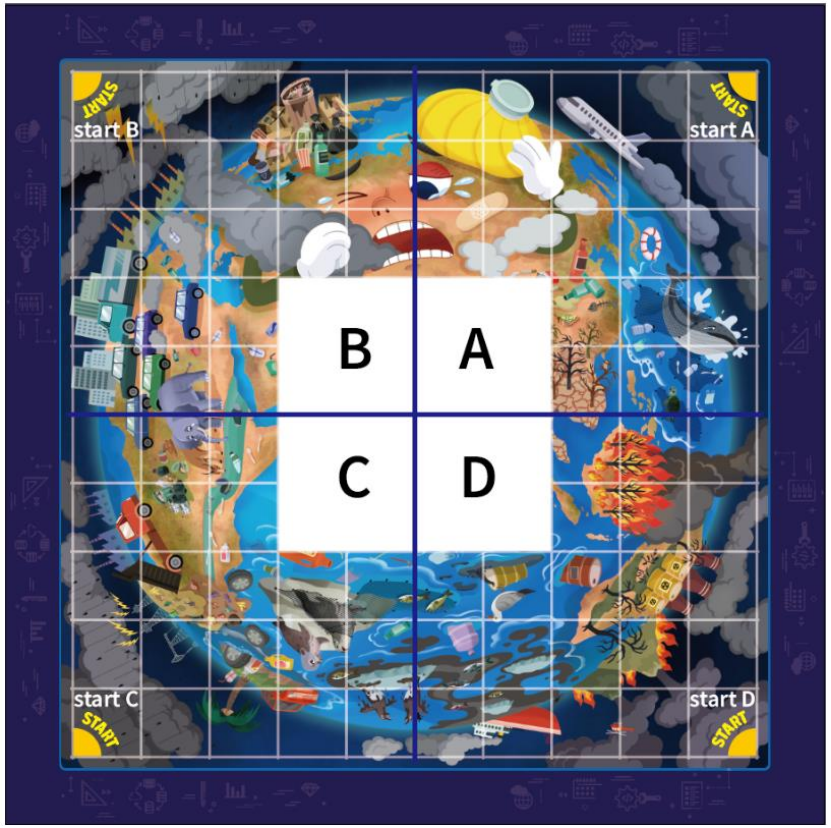
- Participant should prepare their own Android device (Airplane Mode) to control the robot.
- Robot can start to move once the whistle blown.
- During the game, if robot out of battery and not be able to control anymore, game will be terminated and current point will be recorded.
- Each mission has 2 tries. The second try, referee will place the robot at the starting point of the mission / the point gap of the mission.
- If both failed, then referee will move it to the next mission starting point / next point gap.
-

Win/Lose Criteria

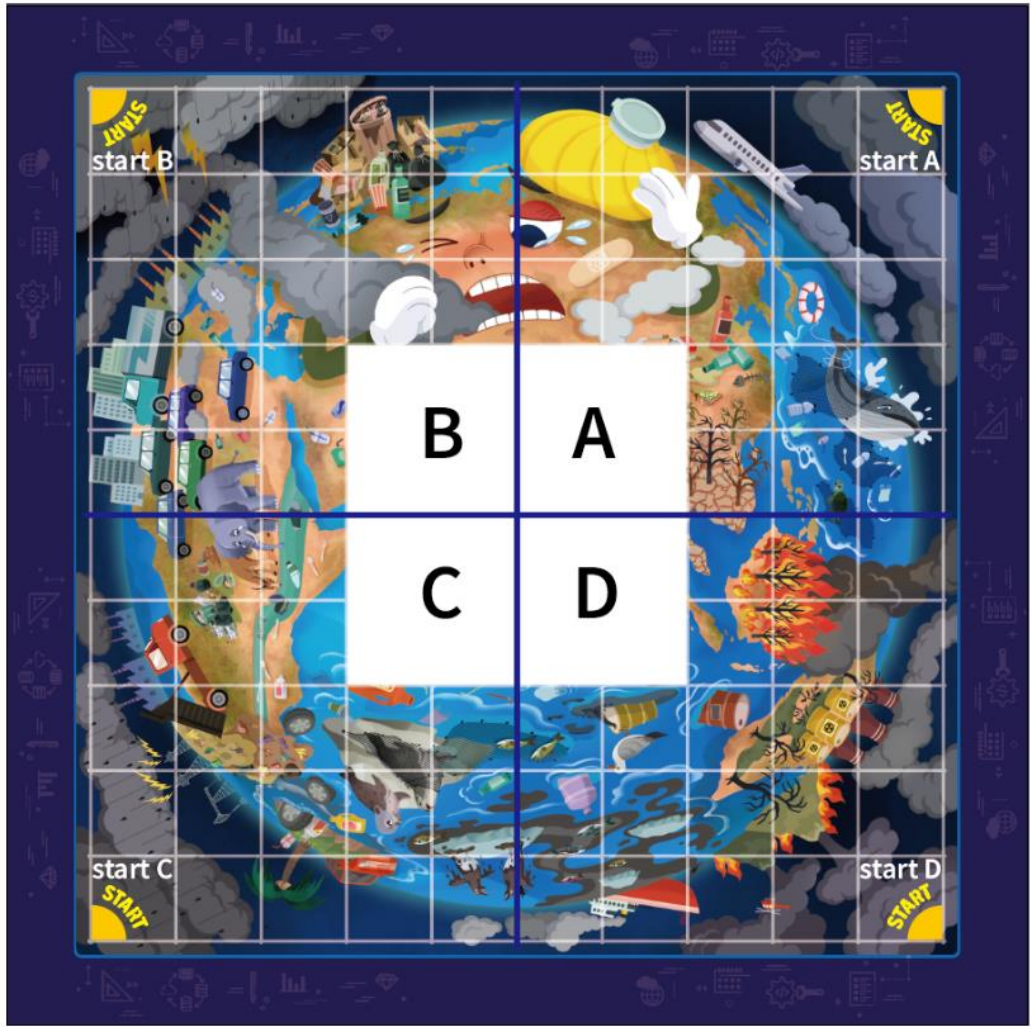
- Participant with the highest score is the winner. If there are two or more participants with the same score, the lowest time recorded to finish the missions is the winner.
- If the points and time of both participants are the same, the participant who is younger would be the winner.

OPEN : GENIBOT CODING MISSION

Age	ALL
Category	Team of 2
Robot Kits Allowed	GENIBOT
Mission	Unplugged Coding – Waste Separation Mission
Robot Building	Pre-build robot



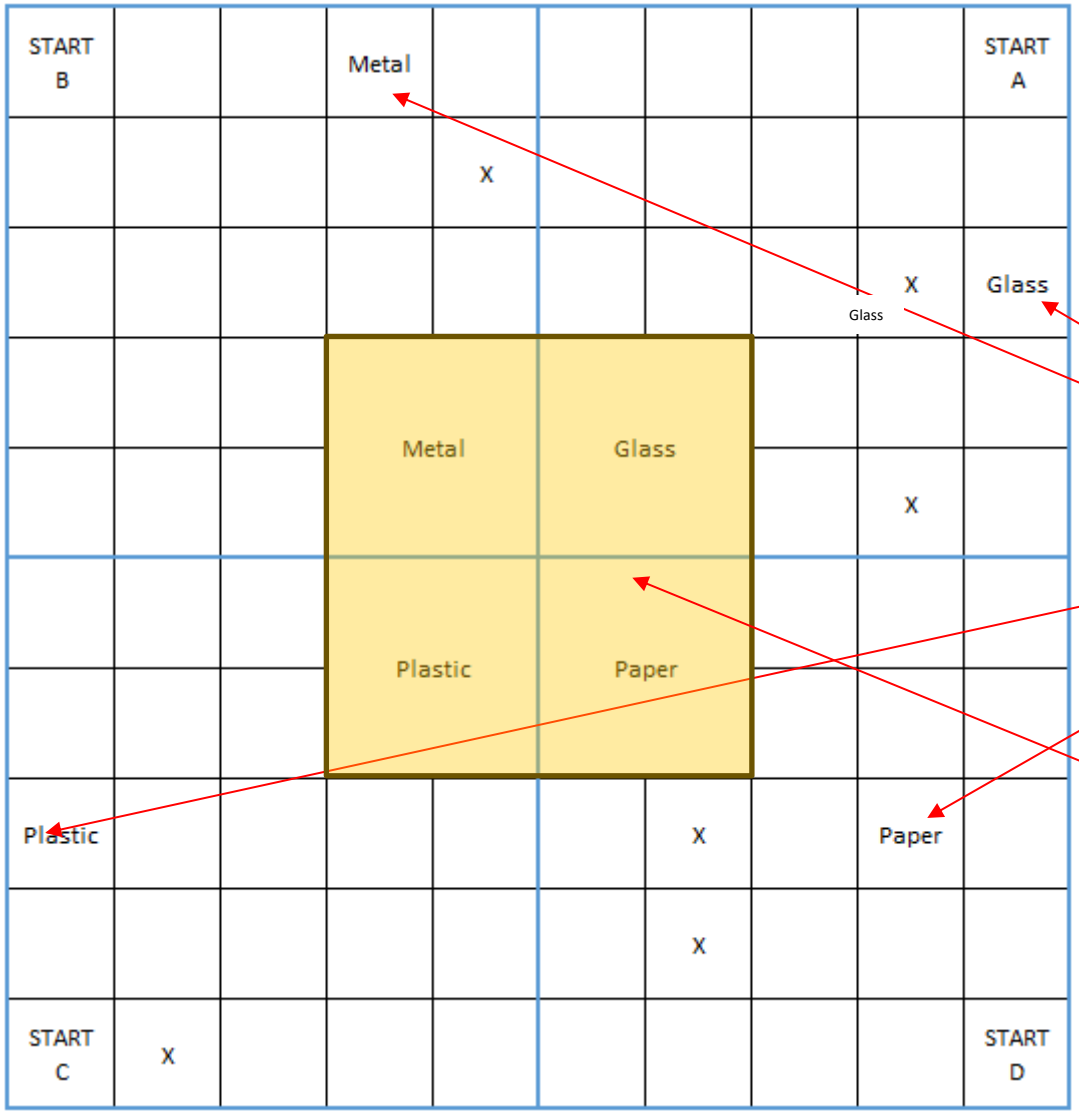
GENIBOT CODING MISSION
WASTE SEPARATION MISSION GAME FIELD



Mission items :

A - Glass
B - Metal
C - Plastic
D - Paper

GENIBOT CODING MISSION
Waste Separation Mission Card Example



Initial spot of mission items

X - Obstacle

Destination of each mission items

GENIBOT CODING MISSION GAME RULES

Dimensions and Restrictions

- Initial size shall not exceed 25cm (H) X 25cm (W) X 25cm (L).
- Robots are NOT allowed to expand to any size after the game starts.
- Maximum up to 2 DC motors are allowed.

Game Duration

- Each game is stipulated for 3 minutes.
- Once the mission card is drawn, teams have only 5 minutes to program the Genibot.

Starting Position

- Each team places their Genibot at two of the four available starting corners depend on their program strategy.

GENIBIT CODING MISSION GAME RULES

Game Play Details

- The playing field is a grid pattern. Genibot can only move in grid units.
- There are 4 types of mission items to be collected in the playing field and send to the destination base on the mission card.
- The two Genibots start from any 2 corner of the starting position.
- Participants have to program the Genibot according to the drawn mission card, such as forward, backward, and rotate, to move objects to the destination while avoiding the obstacles.
- Participants have to pass the mission card to the referee before the game start to prepare the game items accordingly.
- When moving objects on the playing field, the two Genibots proceed separately at the same time, and the mission is completed when both Genibot moves the mission items to the correct destination.
- Game may end before 3 minutes when :
  - Both Genibots have completed the missions.
  - Referee judges that the continuation of the match is impossible

GENIBOT CODING MISSION GAME RULES

Scoring

- Time recorded for mission completion.

Win/Lose Criteria

- The team with shortest time is the winner.

GENIBOT CODING MISSION SCORE EXAMPLE

Child	Mission Completed	Time Recorded (sec)	Rank
A (9yo)	3	~	3
B	4	130	2
C	4	120	1
D (10yo)	3	~	4

OPEN : GAME MAKER KIT GAME DESIGN CHALLENGE

Age	All
Category	Team 1-3 students
Robot Kits Allowed	Game Maker Kit
Mission	Design a proper game based on the theme given and submit online.
Robot Building	Pre-build robot

GAME DESIGN CHALLENGE

Objective

Provide a platform for students to showcase their creativity, innovative and programming skills. They are required to work together as a team to design a game based on the given theme. Besides, they will also need to present and demonstrate their game creation well to convince and impress the referees.

Restrictions on Game design

- Only MRT Game Maker Kit is to be used to make game.
- Participants should make code at https://arcade.makecode.com.
- Participants should make sure that games work properly both at emulator of websites above and MRT Game Maker Kit.

GAME DESIGN CHALLENGE

Game Rules

- Participants shall make game code in advance.
- Each group has a presentation time of 3 minutes to introduce their games to the referee on the competition place. Presentations can be done in English. If they are unable to present in English, they have to prepare their own translator.
- Game kit and laptop may be displayed in the allocated table assigned to each group. Hence, Participants are required to ensure their game kit are taken care of during the display time to the public until the judging is completed.
- After registration, a poster(presentation) form will be sent the teams by organizer, and participants need to fill the poster content. Besides, 4 copies of the printed Manual (Presentation File) in English are required for the display and referees review, it needs to include:
  - Game Name
  - Purpose
  - Team member introduction and task allocation
  - Introduction of the project
  - How to program (coding block captured)
  - How to play.

Theme: My Robot, Time to Save the Earth

GAME DESIGN CHALLENGE

Scoring

- Referees will check if the team meets the requirements or not, and evaluate teams' works. Score will be given based on different criteria and weightage respectively:
  - Relevance to theme: 10 score
  - Creativity & Uniqueness: 30 score
  - Code Functionality: 30 score
  - Team work: 10 score
  - Presentation skill: 20 score
- Additional Points
- When participants create their own Character/Background, they will get additional points up to 5 ~10 points.
- When participants use more than 3 kinds of coding blocks, they will get additional points up to 5 ~10 points.

  e.g.) Loops, Logic, Music…

- Participating group with the highest score is the winner. If there are two or more groups with the same score, the lowest average younger participating group is the winner.

OPEN : DRONE SOCCER

Age	Junior Category : 9 to 12 years old Senior Category: 13 to 18 years old
Category	3 Vs 3
Robot Kits Allowed	Remote Control Drone Soccer Robot
Mission	Control the drone to score in the opponent's goal post or defend your own.
Robot Building	Pre-build robot

OPEN : DRONE SOCCER

1. Overview

Each team consists of one Striker and two Defenders. The Striker's job is to maneuver the drone through the opponent's ring to score. The Defenders work together to block incoming attacks and protect their own ring from being pass-through!

Every successful pass-through generates a score. The team with the highest score will win the game.

2. Game Introduction

2.1. Each team consists of three players and three drones. Two teams compete against each other, starting from their home positions at opposite ends of the field.

2.2. Players must remain outside the game field, with each team positioned at their respective end.

2.3. Each team has one striker and two defenders.

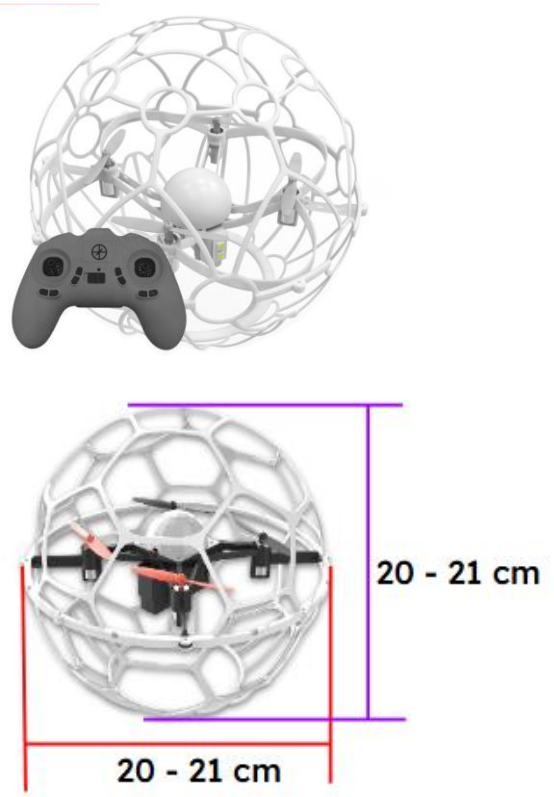
2.4. Defenders must stay within their own area to protect their goal post and block the opponent's striker from scoring. They are not allowed to cross the middle line.

2.5. The striker can cross the middle line into the opponent's area and use any strategy to score a goal.

OPEN : DRONE SOCCER

3. Robot Dimension and Weight

Type	Ball type remote control drone
Size	Range of 20 to 21 cm include the outer ball type frame. e.g. 21cm(H) x 21cm(W) x 21cm(L).
Weight	The total weight, including the frame and battery, must be less than 200g
Battery Voltage	The voltage must be 7.4V or lower
Battery Capacity	The battery capacity must be 1000mAh or lower



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4. Game Rules 4.1. General Rules

4.1.1. All players must remain in the Pilot Area (outside the game field); only drones are allowed inside.
4.1.2. Players cannot exceed the Pilot Area.
4.1.3. The main referee stands in the middle (outside the field) and uses a whistle to signal the start, fouls, and end of the game.
4.1.4. Two assistant referees stand outside the field near the goalposts (one per team) and use flags to indicate whether a goal is approved or disapproved.
4.1.5. Defenders must not cross the half-field line; doing so will result in a foul.
4.1.6. Striker can cross the half-field line to score the opponent's goal.
4.1.7. After a successful goal, the referee will stop the game with **one short whistle**, and the timer will pause.
4.1.8. All drones must immediately land at their current position for mark verification.
4.1.9. If a drone flips over or bounces away during landing, the referee will reposition it.
4.1.10. The game resumes with **one short whistle**. The scoring striker must return to the team base before restarting.
4.1.11. In the last 30 seconds, the main referee will **blow two short whistles** as a warning.
4.1.12. The game ends after 2 minutes with a whistle signal: **one short blow followed by one long blow**.
4.1.13. Teams must immediately stop their drones once the game ends.
4.1.14. After scores are confirmed, teams may enter the field to retrieve their drones.
4.1.15. Participant teams will be disqualified if more than 5 warnings are accumulated.

OPEN : DRONE SOCCER

4.1.16. For every foul, 1 warning (yellow card) will be given.

4.1.16.1. Failure to follow referee instructions.

4.1.16.2. Disrespectful behavior towards the referee.

4.1.16.3. Taking off before the starting whistle.

4.1.16.4. Failing to land the drone when the stopping whistle is blown during gameplay.

4.1.16.5. A striker not returning to the team base before attacking again after scoring a goal.

4.1.16.6. A defender crossing the middle line.

4.1.16.7. A defender hovering in the middle of the goal post.

4.1.16.8. A player exceeding their designated Pilot Area.

4.1.16.9. Flying the drone outside the game field.

Any foul committed by a player, regardless of role, will be counted as a team foul.

Master referee have the right to disqualify the team if more than 5 fouls are being made.

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4.2. Line Up

4.2.1. Teams must prepare their drones and insert batteries only within the field.
4.2.2. Battery insertion and drone arming outside the field are strictly prohibited.
4.2.3. Drones must be lined up in a straight line in front of the goal post, with:
4.2.4. Striker in the middle
4.2.5. Defenders on the left and right sides
4.2.6. Positions will be clearly labeled on the floor for guidance.
4.2.7. All drones within a team must have matching LED colors:

- RED Team: Striker – Green (with extra label on drone), Defenders – Red
- BLUE Team: Striker – White (with extra label on drone), Defenders – Blue

4.2.8. The LED colors of the striker and defenders may be adjusted based on the available LED colors of the team's drones.
4.2.9. Participants cannot change LED colors during gameplay unless permitted under Section 13.
4.2.10. Teams have 2 minutes to complete their setup.
4.2.11. Each team must know how to change the LED color on their drones.
4.2.12. Blue and Red teams will be determined by a rock-paper-scissors match between team representatives.

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4.3. Pre Start

4.3.1. The main referee will coordinate with the team referees to ensure all safety requirements are met and both teams are ready.
4.3.2. The main referee will announce "Ready," signaling teams to arm their drones in preparation for flight. Takeoff is not allowed at this stage.
4.3.3. To officially start the game, the main referee will blow a long whistle (one time).
4.3.4. Upon hearing the whistle, teams may take off and begin gameplay.

4.4. Striker

4.4.1. The striker can cross the half-line to score in the opponent’s goal.
4.4.2. A goal is counted as valid only if the striker’s drone ball fully crosses the goal line from front to back into the opponent’s goal. (Refer to Diagram 10.1)
4.4.3. After a goal, the main referee will stop the match for mark verification, and all drones must immediately land.
4.4.4. When the game resumes, the scoring striker must return back to the original team base before attacking again.
4.4.5. If a striker scores in their own goal post, it is considered an invalid goal.

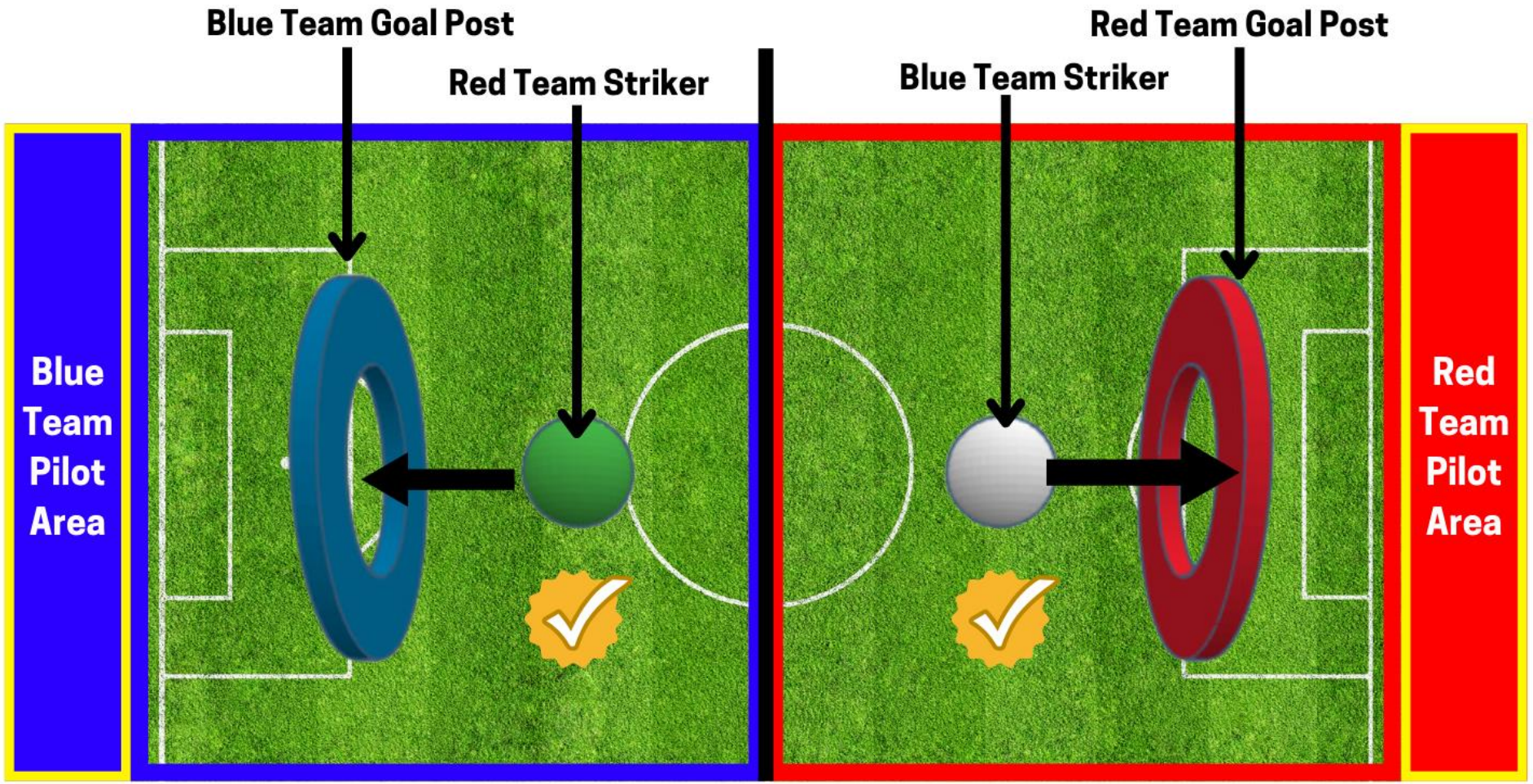

Diagram 5.1: Striker valid goal

OPEN : DRONE SOCCER

4.5. Defender

4.5.1. Defenders must remain in their team’s base and are not allowed to cross the middle line into the opponent’s area.

4.5.2. Their primary role is to block the opposing striker from scoring in their own goal.

4.5.3. Defenders can move or hover either in front of or behind their own goal post, depending on team strategy.

4.5.4. Defenders cannot stay in the middle of the goal post (Refer to Diagram 10.2).

4.5.5. While defending, defenders are allowed to pass through their own goal—either voluntarily or unintentionally.

pass through = defender's drone can fly through its own goal post but cannot stop or hover inside it while defending.

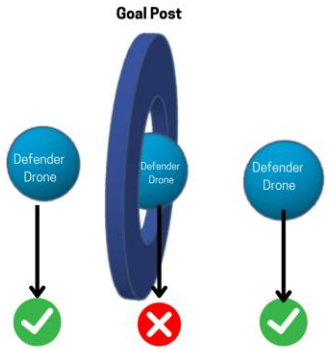

Diagram 5.2: Defender Drone position

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5. Referee Position and Signal

5.1. The main referee stands in the middle (outside the field) and uses a whistle to signal the start, fouls, and end of the game.

5.2. Two assistant referees stand outside the field near the goalposts (one per team) and use flags to indicate whether a goal is approved or disapproved.

5.3. Red Team Referee: Stands at the Blue Team's goal.

5.4. Blue Team Referee: Stands at the Red Team's goal.

5.5. When the Blue Team scores in the Red Team's goal, the Blue Team referee raises a blue flag.

5.6. When the Red Team scores in the Blue Team's goal, the Red Team referee raises a red flag.The main referee will stand in the middle (outside the field) and use a whistle to signal the start, fouls, and end of the game.

5.7. Whistle signal : 5.7.1. **1 Long Whistle :** The starting of the new game. All timer start to count.

5.7.2. **1 Short Whistle:** Signals the start and stop of the game during gameplay.

5.7.3. **2 Short Whistles:** Warning sign of 30 seconds left.

5.7.4. **1 short and 1 long blow:** Times up and ending of the game

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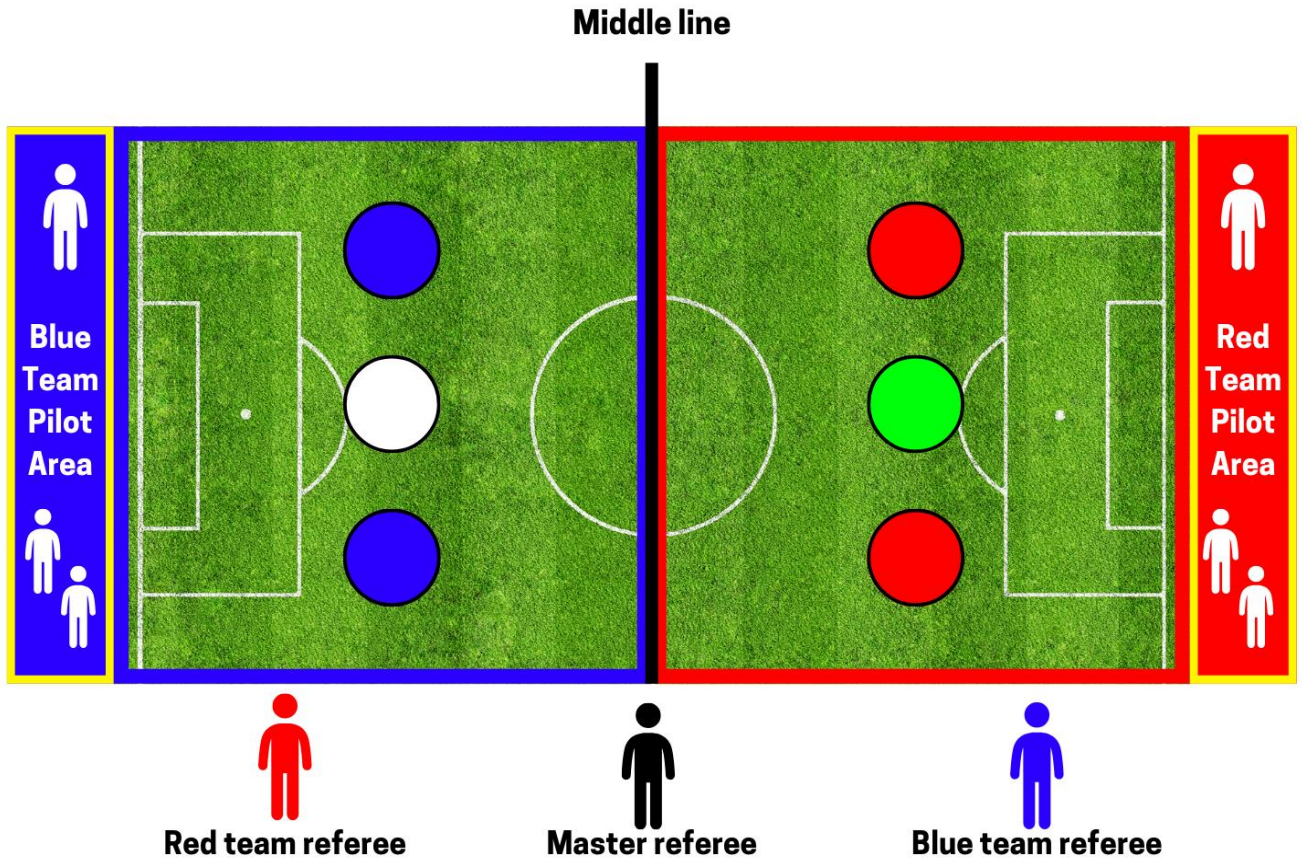
5.8. Overall positioning:



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6. Scoring and winning condition

6.1. The competition follows a Knockout (KO) format, meaning the team that scores the highest points in a match advances to the next round.
6.2. Each goal earns 1 point.
6.3. If the game ends in a draw, an additional 1-minute extra time will be given.
6.4. If the score remains tied after extra time, an Extra Mission will be released to determine the winner.
6.5. Extra Mission Rules: 6.5.1. All drones must be removed from the game field.
6.5.2. Each team selects one representative to attempt a goal.
6.5.3. The starting sequence is determined by a rock-paper-scissors match between the two representatives. The winner starts first.
6.5.4. Using the same starting point, the representative must fly the drone to score the opponent's goal within 30 seconds.
6.5.5. The representative who scores the goal in the shortest time wins the match and secures victory for their team.

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7. Game Field

7.1. Dimension of game field:

300cm(H) x 300cm(W) x 600cm(L)

7.2. Dimension of goal:

Inner diameter(40cm), Outer diameter(70cm)

7.3. Players must stand outside the game field, with each team positioned at one end.

7.4. Players are only free to move in their Pilot Area.

7.5. The drones are placed inside the game field before the game starts.

7.6. There will be 3 referees a game, 1 at a team and 1 as the main referee.

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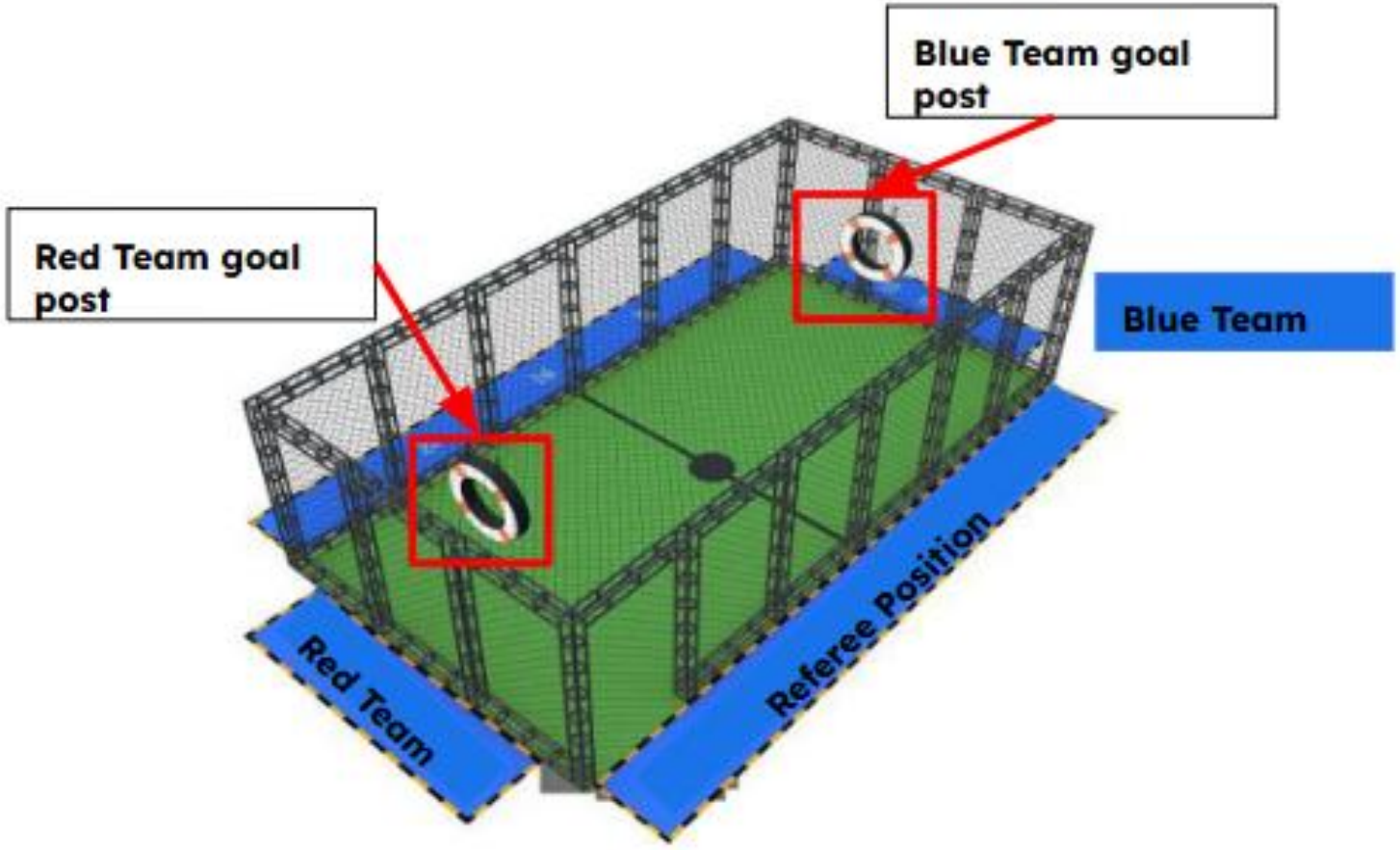

This picture is the example of the game fi eld.

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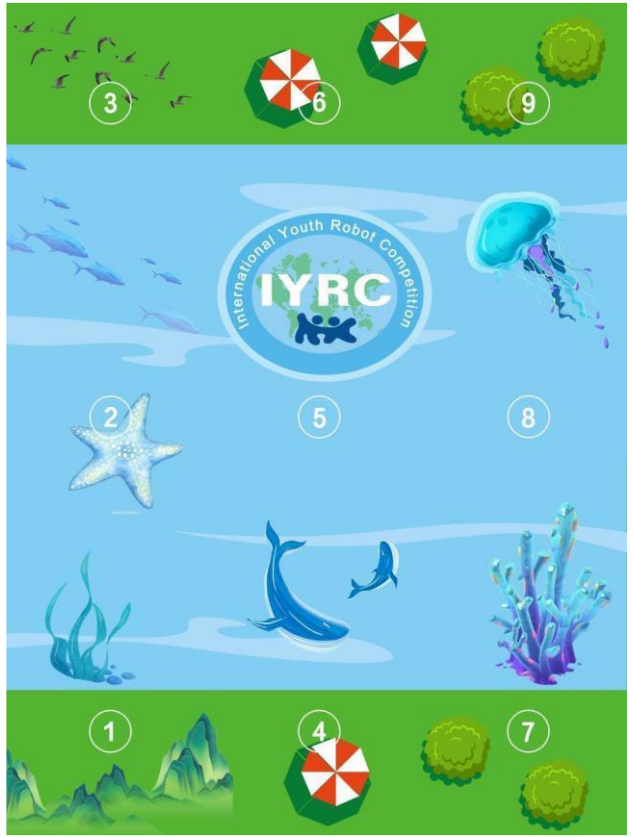
8. Extra

8.1. If a drone loses control during gameplay, the player must land the drone and take off again on their own. The game will not stop for this issue.
8.2. If a striker's drone becomes uncontrollable, fails to take off, or malfunctions, one of the defenders can take over as the striker by changing their drone's LED color.
8.3. The malfunctioning striker must remain landed and cannot rejoin the game until the round ends.
8.4. Battery changes are not allowed during the game. If a drone's battery runs low, the team must wait until the end of the round to replace it.
8.5. Players must be fully familiar with their drone's controls and functions to avoid disruptions.
8.6. Sharing drones between teams is allowed, but the game will not pause for battery charging or if a shared drone is still in use by another team.
8.7. Teams are encouraged to prepare extra drone batteries in advance.

OPEN : DRONE MISSION

Age	Junior Category : 9 to 12 years old Senior Category: 13 to 18 years old
Category	Individual
Robot Kits Allowed	Remote Control Drone Robot
Mission	Task completion
Robot Building	Pre-build robot



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1. Competition Environment

a. **Control system** : Remote Control Operation

b. **Prohibited devices** : USB Flash Drives, mobile phones, smartwatches, walkie-talkies etc.

c. **Competition game** f**ield:**

i. The total size of the game field is **300cm (W) x 400cm (L) (±5%),** the positions of task points on the spot will have task props randomly placed.

ii. There is a circular area marked with an 'H' symbol, serving as both the take-off and landing point (the standing point for participants after the drone takes off) outside of the game field

iii. The drone competition venue is indoors, with efforts made to maintain a wind-free and magnetically undisturbed environment.

2. Robot Requirements

a. Each participant needs to have one remote-controlled drone.

i. The drone has dimensions of **200 mm × 200 mm × 180 mm**, with a wheelbase of 118 mm, and is equipped with a **protective cover (no matter if it is spherical or what).**

ii. **Controller:** Remote controller operating at a frequency of 2.4GHz.

iii. **Weight:** The drone’s empty weight must be within 80 g, and the total take-off weight must be within 100 g.

iv. **Battery Voltage and Capacity:** Up to 7.5 V and within 500 mAh.

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3. Competition Task

A. Task overview

i. **Elementary School :** The drone starts from the take-off point, completes tasks at 5 designated points and returns to the landing point.

ii. **Middle and High School :** The drone starts from the take-off point, completes tasks at 8 designated points and returns to the landing point.

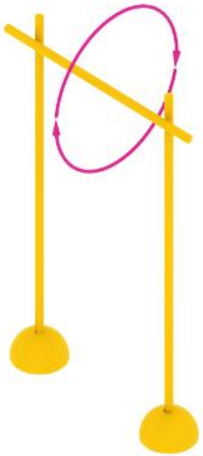
All tasks are scored only once, multiple completions of the same task are counted as a single score.

B. Task decomposition

Drone takeoff: The drone completes takeoff and vertical projection fully leaving the takeoff point is considered successful.

i. **Task 1 Crossing mountains and ridges :**

The drone completes one circle around the horizontal bar to be considered successful. A related diagram is provided below:



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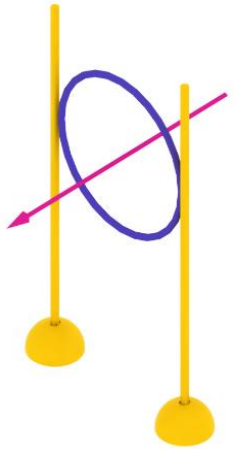
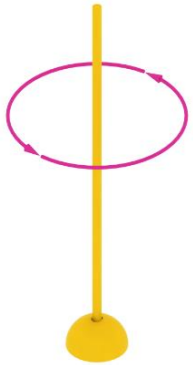
ii. **Task 2 Crossing the strait:** The drone passing through the ring is considered successful. A related diagram is shown below:



iii. **Task 3 Fixed-point cruising:** The drone completes one circle around the vertical pole to be considered successful (the flight altitude must not exceed the height of the vertical pole). A related diagram is shown below:



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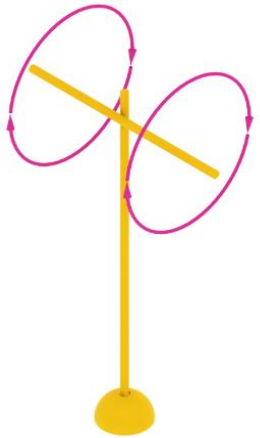
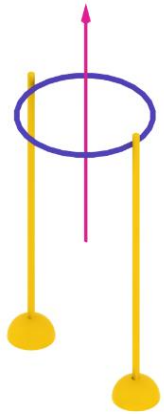
iv. **Task 4 Dual challenge:** The drone completes one circle around each of the horizontal bars at both ends to be considered successful. A related diagram is shown below:



v. **Task 5 Rapid ascent:** The drone passing through the ring from bottom to top is considered successful. A related diagram is shown below:



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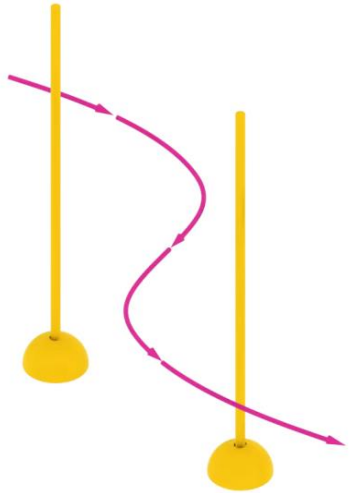
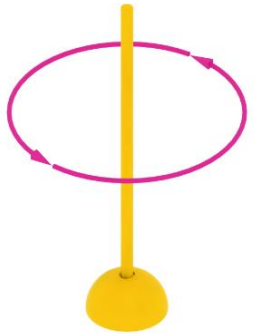
vi. **Task 6 S-shaped maneuvering:** The drone successfully navigates around two vertical poles spaced 30 cm apart in an S-shaped pattern. A related diagram is shown below:



vii. **Task 7 Low-altitude** fl**ight:** The drone completes one circle around the pole (the flight altitude must not exceed the height of the pole) to be considered successful. A related diagram is shown below:



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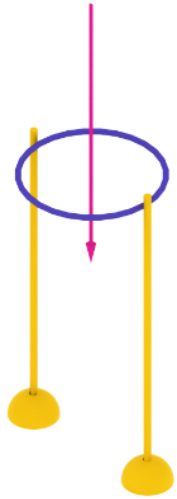
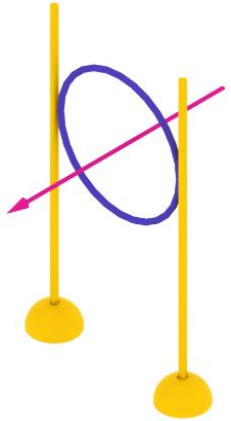
viii. **Task 8 Rapid descent:** The drone passing through the ring from top to bottom is considered successful. A related diagram is shown below:



ix. **Task 9 Safe return:** The drone passing through the ring is considered successful. A related diagram is shown below:



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Drone landing: The drone must come to a complete stop and its vertical projection must be entirely within the landing zone to be considered successful.
If the drone touches any competition task props while completing a task, that task will not earn any points.

C. Task Announcement：

i. Types of tasks.
ii. Placement position, orientation, and height of the tasks.

D. Time and Frequency

Category	On-site flight testing duration	Specified task duration	Specified task chance
Elementary School	5 Minutes	180sec/time	2 times
Middle and High School	5 Minutes	180sec/time	2 times

1. **On-site testing duration:** During this time, all teams in each category will collectively engage in programming and testing.
2. **Specified task duration:** The drone must complete all tasks within the specified time. If not all tasks are completed within the allotted time, scoring will be based on the tasks successfully completed.
3. The participant will have two chances and the better score will be considered as the final result.

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4. Drone operation and ending

A. Drone operation

i. **The drone's startup and operation method:** Before takeoff from the starting point, the drone must remain stationary and its projection must not overlap or exceed the starting point's boundary. The drone should be started using remote control operation. After the drone is started, participants are not allowed to touch the drone until the end of the competition

ii. Once the drone takes off, the participant must enter the standing point and must not leave the standing point circle for the duration of the competition.

iii. The drone completes two consecutive competitions.

iv. No pauses are allowed within the specified duration for task completion.

v. Within the specified duration for task completion, if a participating drone experiences a structural detachment, the participant may request the judge's assistance in retrieving the detached part, without affecting the drone's normal flight.

vi. During the competition, drones cannot be replaced or modified.

vii. The judges will announce the tasks and their positions, orientations, and heights on-site.

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B. Ending

i. Complete all tasks within the specified duration.
ii. Finishing of time allocated.
iii. When competition is going, participants touch any part of the drone.
iv. The drone flew away from the field for more than 5 seconds without returning.
v. The participants completely leave the standing point circle.
vi. The drone landed at any location.

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5. Scoring

A) Scoring explanation

Evaluation Criteria	Score
Take off	10 points
Task 1 Crossing mountains and ridges	20 points
Task 2 Crossing the strait	20 points
Task 3 Fixed-point cruising	20 points
Task 4 Dual challenge	20 points
Task 5 Rapid ascent	20 points
Task 6 S-shaped maneuvering	20 points
Task 7 Low-altitude flight	20 points
Task 8 Rapid descent	20 points
Task 9 Safe return	20 points
Landing (entire drone is stopped completely within the starting are	10 points
After landing, for every second finished early before the allocated time	+1 point will be awarded per second (time less than one second will not be counted).

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B) Scoring calculation

i. Scoring is based on the designated tasks completed within the specified task duration.
ii. The final score will take the higher score of the two competitions. Participants with higher scores rank higher and in case of ties, the participants that complete the mission using the shortest time will win the game.
iii. If the scores and completion times are the same, it will result in a tie for the ranking.

C) Disqualification

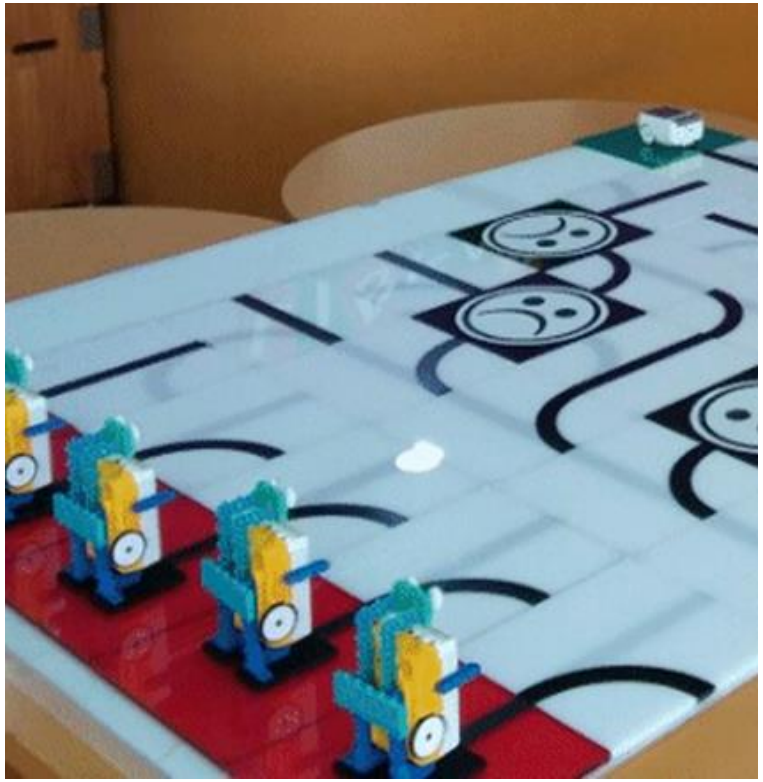
i. Participants late for more than 10 minutes.
ii. Participants deliberately damage the competition venue.
iii. A participant does not follow the instructions of the referee (judge).
iv. The participant score is zero.
v. Complaints were filed against participants and were established.
vi. The drone does not meet the size requirements.

6. Relevant Explanation

These rules serve as the basis for referee operations. During the competition, judges have the final decision-making authority. Any matters not explicitly covered by the rules will be determined by the judging panel through discussion.

OPEN : COCOMON GO

Age	**8-13**
Category	2 members a team
Robot Kits Allowed	COCONUT
Mission	A simple mission to create a round line using the dot matrix function and line tracer function of MRT Coconut solves the problem of improving algorithmized computing thinking ability to obtain scores and final arrival scores using different puzzle boards
Robot Building	Pre-build robot



COCOMON GO GAME FIELD

Objective

- MRT Coconut's dot-matrix function and line tracer function, which are integrated physical computing with Ar duino-based hardware, are used to perform a simple mission to create a round line while passing through diffe rent puzzle boards in a set time, and the score of the dot-matrix of Cocomon at the final point of arrival is adde d to achieve higher scores

Restriction on Robot Design

- MRT Coconut with scratch and entry, Python-coding Arduino-based hardware, and MRT Coconut with line tra cer made using MRT blocks run.
- It should start from the starting point (green puzzle board) (starting is irrelevant in either direction)
- The starting coconut takes five seconds to move one compartment of the puzzle board.

※ The starting coconut is prepared by the organizers of the competition.

- Scores Cocomon are 5 units in total, each located on a red puzzle board.
- Scores Cocomon each marks the score with a tote matrix, consisting of 5 points (1 unit), 10 points (3 units), and 15 points (1 unit)
- Score Cocomon can be checked by turning on the score Cocomon on the puzzle board that arrived when the departing coconut arrived at the point of arrival (red puzzle board).

COCOMON GO GAME FIELD

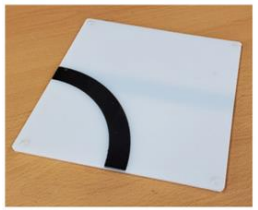
Obstacle Puzzle Edition

- Obstacle puzzle plates are given four, which interfere with the driving of the starting coconut.
- The position of the obstacle puzzle board is determined by random drawing before the start of the game.
- The size of the obstacle puzzle board is 19.5 cm wide and 19.5 cm long, and it is black.

Road puzzle board

- The road puzzle board is marked with a black line to create a line for the starting coconut to drive
- The size of the road puzzle board is 19.5cm wide and 19.5cm long.

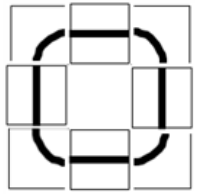
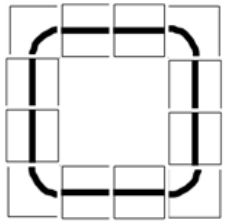
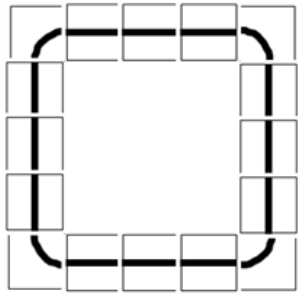
As shown in the figure, the road puzzle board has black lines in front and back consisting of straight lines and curves, so you can flip and make a different path.



COCOMON GO GAME RULES

Game Rules

- The race time is 5 minutes, and within 5 minutes the departing coconut must depart and arrive at the point of arrival.
- If the arrival point is not reached within the game time, the team's score will be determined only by the mission performance score up to the point after 5 minutes.
- Prior to the start of the game, the position of the five Cocomon players and the position of the four obstacle puzzle boards are determined by random drawing by the team.
- The following is how to obtain a mission score while traveling to the point of arrival.
- The road puzzle board flips back and forth to create a road and the starting coconut can drive.
- The obstacle puzzle board is immovable.
- Check the location of the obstacle puzzle board and earn a mission score when the coconut drives along the path below.

 2×2	 3×3	 4×4	 5×5
4 point	10 point	16 point	22 point

COCOMON GO GAME RULES

- You make a round road with a starting coconut and drive to score points, and even if you drive the same road again, the same road is not recognized as a score.
- If you want to make a round road with a starting coconut to earn points, and if you want to get points again, you must make a round road made of another route into a road puzzle board to earn points.
- All scores obtained by creating a round road while driving are summed up to become mission scores obtaine d by the team.
- If you arrive at the point of arrival within 5 minutes of the match, turn on the Cocomon on the red puzzle boar d to earn the Cocomon score.
- The final score is the sum of the total mission scores obtained during the match and the Cocomon score captu red at the point of arrival of the score.
-

Scoring

- Two points will be deducted if the referee does not comply with the order during the game.
- If you turn on the arrival Cocomon in advance and check, you will get 2 points deducted.
- Points will be deducted according to the judge's judgment when receiving external assistance.
- Equalizer Rules: If the points earned by the team are the same, the team with the highest order shall win.
- a team with a high score by making a round road
- The team with the highest score of Cocomon
- The team that has less time left to arrive at the destination in 5 minutes
- The lower team after adding the grades of 2 students from the participating team
- Participating teams in the lower grades
- The participating team is the team with the late birth date of the lower grade student

GENERAL GAME RULES

GENERAL RULES

Common Rules

- The organizer reserves the right to disqualify any participants if found violates any rules.
- In the event of any disagreement or misunderstanding, the judges' decision will be final.
- If there are any changes to the rules and regulations, it will be announced to all participants 10 days before the competition starts. The judges will have full authority to explain and enforce the rules for all the competition category.

Participants

- Participants are allowed to participate in **Maximum 2 categories + 1** Creative Design (Compulsory).

Scoring

- Each participant/team representative needs to confirm the competition result and sign immediately after the end of the match.
- Participants are not allowed to dispute the result recorded after the confirmation.
- All time are measured using a stopwatch.

GENERAL RULES

Competition Rules

- Prior to the start of the competition, all robots will undergo an inspection.
- If a robot does not meet the specifications or design restrictions, the participant will be given a grace period of 15 mins to modify their robot to meet the specification or comply with the design restriction, failure to do so within the time limit the participant will be disqualified.
- If the robots encounter any technical difficulty before the start of the match, they will be given 5 minutes to fix the robot.
- Judges can assign practice playfield and restrict practice time per participant / team to ensure equal and fair practice time.
- RF Remote Control will be provided by organizer for categories that requires a remote control robot. In this case, robot should set to Channel 1 or programmed to Channel 1(MRTX mainboard) in order for it to work.
- All robot parts are not allowed to drop while the match is in progress. Judges may take necessary action against the teams that dropped their robot parts that could affect on-going matches.
- Participants are not allowed to touch their robots and/or remote controls during the competition unless instructed by the judges.
- Sharing of robots among the participants in the competition is not allowed.

GENERAL GAME RULES

Robot Design Restrictions

- Only MRT Series, & HUNA educational robot kit are allowed (Cross using parts is allowed).
- No limitation to the amount of blocks used to build the robot as long as within size and weight restrictions.
- My Robot Time Toy series and MRT Soccer Robot are **Strictly NOT ALLOWED**.
- Electronic parts are not allowed to be modified in any way. If found guilty, the participant would be **IMMEDIATELY** disqualified.
- No modification of parts are allowed (no bending, sharpen or change shape of parts). All parts must stay in original state.

Robots

- Robots are not allowed to have any power supply above 9V DC (Volt of Direct Current). VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.
- Robots will need to protect their sensors from any outside interferences if necessary.
- Robots RC receivers will need to be protected from any outside interferences.

Game Fields

- Robots shall not damage any part of the field or obstacles deliberately.
- Robots shall not cause any danger to the arena and surroundings in anyway whatsoever.

GENERAL GAME RULES

Fouls (2 Fouls = Disqualification)

- Not obeying judges' order. Disrupting order
- Communication with spectators or other participants

IMMEDIATE Disqualification

- Robot does not comply with the size/weight restrictions of the game participated
- Usage of parts that is not authorized before match
- In case of technical problem such as robots are uncontrollable, the referee will pause the match and help participants to turn off and on the robot only. If the robot still cannot function after the robot is turned back on, the participant will be disqualified.
- When the robot is not able to move not due to technical reasons for more than 10 seconds (due to fallen off parts, stuck, design flaw, etc)
- Carry storage devices including MP3 player, PMP, USB memory
- Touching or damaging other participant's robot, laptops, or belongings
- Touching the robot or the game field and it's contents while the match is in progress. (except for Bowling)

GENERAL GAME RULES

Remote Controlled Robots

- Participants who remote control the robot shall keep a certain distance away from the game field area without touching or disturbing the game.
- Any related to channel setting in programming, do program it to Channel 1 (default) as RF Remote Control will be used in the competition.

Other Rules

- **While the match is in progress, at any time the referee whistles, the human operator should stop the robot.**
- Upon removal of a robot from the playing pitch, it can only re-enter the match upon referee's approval.
- The parts which are fallen or broken from the robots cannot be fixed back onto the robots during the match.
- The referee's decision would be final and no disputes will be entertained.

GENERAL TOURNAMENT RULES

Team Tournament Rules

- All the tournament based games will be based on “Knock out” system.
- Participants are to submit their robots for inspection in the morning of their competition day before 9am.
- After participant’s robot are submitted for inspection and passed the restricted regulations, participants are not allow to touch their robots until their match begins with the approval of the referee. Any participant who touches their own or other’s robot without consent of the referee will be **IMMEDIATELY** disqualified.
- All the teams will be distributed in opposing pairs by IYRC committee randomly.
- Number of participants per team is determine by category of game registered.
- Each participant is to control his/her own robot only
- Only the winning teams will proceed to the next round of competition.

Rules Clarification

- The referee’s decision is considered as final during game play and objections to the referee’s judgement will not be entertained.
- Mentors must not be involved in any rules discussion for the game play.
- Video evidence will not be accepted.
- Once the Head Referee and the game referees have made a decision, no further discussions will be entertained.