



IYRC 2018

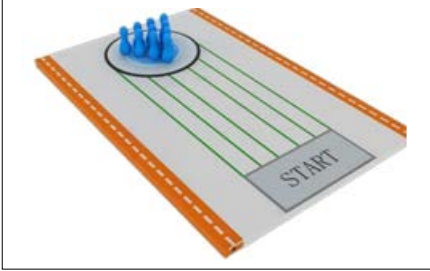
Rules & Regulations

Document Change Log

Version No.	Date Changed	Description of changes
1.0	27/4/2018	First version
2.0	25/6/2018	<ul style="list-style-type: none"> - Standardize to max 9V DC - Game Field size to 4ft x 8ft (Animal Kingdom, Item Recycle, Save the Forest) - Add “Dead Ball” in Soccer R&R - LineCoreM mission – points for each mission
	6/7/2018	<ul style="list-style-type: none"> - Line Humanoid R&R mission sequence changed.
3.0	19/7/2018	<ul style="list-style-type: none"> - Recycle Item – Aluminum model changed
4.0	31/7/2018	<ul style="list-style-type: none"> - Enriched the rules for all categories
4.1	8/8/2018	<ul style="list-style-type: none"> - Item Recycle – use MRT Paper Cup - Humanoid Mission 2 : 6 cm soft sponge cube
4.2	3/9/2018	<ul style="list-style-type: none"> - Enriched the game rules - Updated Creative Design R&R

JUNIOR CATEGORIES

1) R-Sports Mission – (Bowling)

Age	6-8 years old	
Team	Individual	
Robot Kits	Goma and Brain only	
Mission	Card programming robot to throw ball to knock down pins from start box	
Robot Building	Pre-built and on site card programming	
Game Method	Mission completion	

1.0 Objective

To provide an event that required students to build a robot that able to throw a ball to knock down as many pins as it can, the robot must program by using card reader and command cards provided during the game.

2.0 Robot Dimensions and Weight

The size of the robot at the starting box shall not exceed 35cm by 35cm by 35cm.

However, robots are **allowed to expand** to any size after the game starts.

3.0 Restrictions on Robot design

- 3.1 ALL Robots (whole or subdivided) must be using Goma Brain mainboard as core processor.
- 3.2 Participants have to use their own programming card. Organizer will only provide card reader for participant.
- 3.3 The robot must not have any foreign part (included rubber band, black tapes and scotch tapes). The player would be IMMEDIATELY disqualified if found guilty.
- 3.4 Robots shall not damage any part of the field or obstacles deliberately.
- 3.5 Robots are not allowed to have any power supply above 6V DC (Volt of Direct Current). The participant will be disqualified if batteries used does not have original voltage label indicating the battery voltage. VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.
- 3.6 Robots shall not cause any danger to the arena and surroundings in anyway whatsoever.

4.0 Game Rules

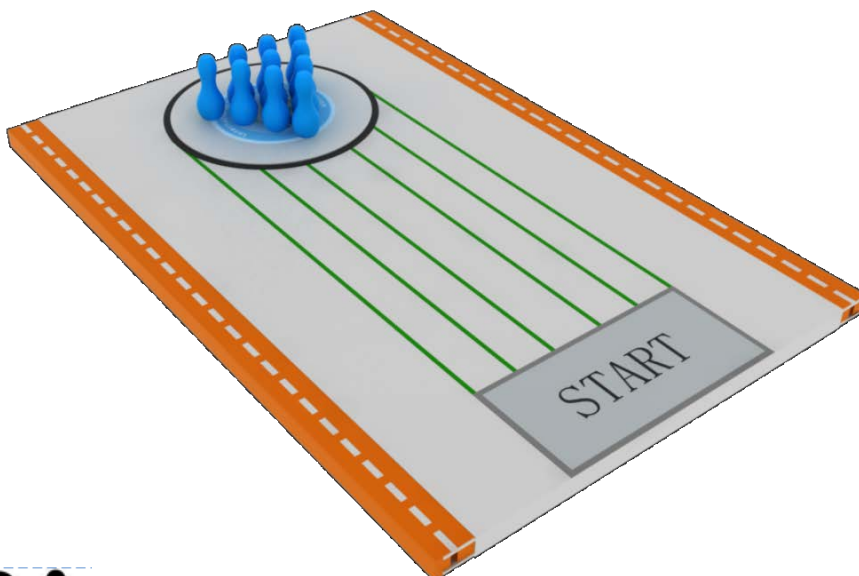
- 4.1 Robot must always stay in the start box. If the robot exceeded the start box when shooting, the attempt is a foul play and no point will be given to the participant for the attempt.
- 4.2 Each of the participants given only 3 minutes
 - 4.2.1 Upon being called by the referee, participants have to use their own programming card to program their robot in front of the referee before the game start.
 - 4.2.2 After programming, student may operate the robot to start the game.
- 4.3 Participants have 3 attempts with 3 balls (Goma L-Gear) to hit the pins. Each thrown can used 1 ball (Goma L-Gear) only.
- 4.4 During competition, participants are allowed to touch or hold robot in case the robot fall down when throw out the ball.
- 4.5 The number of pins knocked down is calculated and recorded.
- 4.6 Each knocked down pin scored 1 point. Total point for each attempt is 10, so total 3 attempts can score 30 points.
- 4.7 Total points of three attempts are added and the participant with higher point becomes the winner.

- 4.8 If less than 10 pins being knock down in first attempt, the remaining pins have to knock down in the second attempt and so on.
- 4.9 If all 10 pins being knock down (strike) in the first attempt, 10 pins will be replace for second attempt and so on.
- 4.10 The time taken for pins replacement will not counted in the 3 minutes.
- 4.11 In case of same points occur, the point of first attempt is taken into consideration to determine the winner. If the first attempt has the same points too, the second attempt will be taken to determine the winner and so on. (The participant with higher point in first attempt is the winner.)
- 4.12 In case of points for each attempt is the same, the date of birth of participants will be considered to determine the winner. (Participants with younger age will become the winner).
- 4.13 Example of score sheet:
- 1) Participant B, C, D, E have the same total points.
 - 2) Participant E is ranked higher than participant C because E have higher score during first attempt.
 - 3) The first attempt score of participant B and E is the same, hence score of second attempt is compared to determine the winner.
 - 4) Participant C and D have same total points and same point for each of their attempt, hence their age is taken into consideration. Participant C gets a higher rank because he is younger.

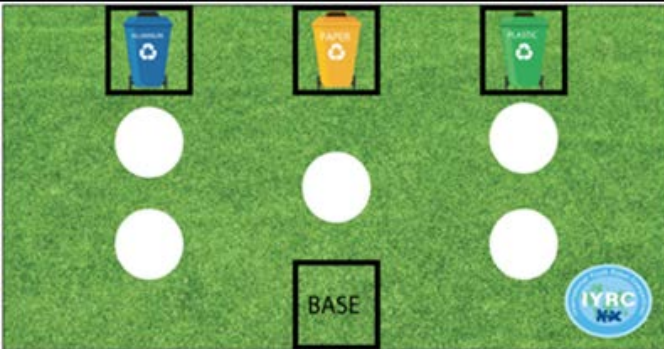
Sample score record

Age	Name	1st	2nd	3rd	Card Program	Total points	Ranking
6	A	10	10	10	10	40	1
7	B	4	3	1	10	18	3
6	C	3	4	1	10	18	4
8	D	3	4	1	10	18	5
7	E	4	4	0	10	18	2

5.0 Game Field



2) ITEM RECYCLE

Age	7-12	
Team	Individual	
Robot Kits	MRT Series & HUNA educational robot kits (not include My Robot Time Toy series and MRT Soccer Robot)	
Mission	Require participants to use remote control robot to sort and place recyclables into different categories: Aluminum, Paper, and Plastic.	
Robot Building	Pre-build	
Game Method	Mission completion	

1.0 Objective

The goal of this game is to test student ability to construct and control a robot to push recyclables to its destination according to its category in shortest time.

2.0 Robot Dimension and Weight

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

Robot is **NOT allowed** to expand at any time.

3.0 Restriction on Robot Design

3.1 Only MRT Series & HUNA educational robot kits (not include My Robot Time Toy series and MRT Soccer Robot) parts are to be used to build the robot. There is no limitation to the amount of blocks used to build the robot. You are allowed to cross use the parts from the above mentioned systems for the robots.

3.2 May use maximum up to 2 numbers of DC motors, and 1 mainboard are allowed to use for the competition.

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

3.4 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.

3.5 Robots shall not cause any danger to the arena & surroundings in anyway whatsoever.

3.6 Robots will need to protect their sensors if necessary from any outside interferences.

3.7 Robots RC receivers will need to be protected from any outside interferences.

4.0 Game Rules

4.1 Length of a Match

4.1.1 Each game is stipulated for 3 minutes only.

4.1.2 In the following cases, a match will end before 3 minutes

- When all the recyclables have been placed to the destination.
- In the event of disqualification.
- When the referees judge that continuation of the match is impossible.

4.2 Building of Robot

Pre-built

4.3 Starting of Robot

4.3.1 Whistle will be blown as a sign at start of the match.

4.3.2 Participants is allowed to start (switch on) the robot using single switch operation.

4.3.3 The participants who remote control the robot shall keep distance with the game field area without touching as disturbing the game.

4.4 Competition Task

4.4.1 Once the match has begun, the robot can move from BASE to push the recyclables to its destination.

4.4.2 There are 3 pcs of different recyclables and 3 categories of recycle storage:

Plastic : (2 pcs of big wheel spindle and 1 pcs of M-shaft)

Aluminum : (2 pcs of AL Sprocket, 3 pcs of 15 AL Frame, 3 pcs of Pillar Block 45. 6 pcs of Bolt-8mm, 6 pcs of bolt-16mm and 12 pcs of Nut)

Paper: MRT Paper Cup

4.4.3 There are 5 spots on the map where each spot has 3 pcs of different types of recyclables. Participants have to separate and push each recyclable to its destination (correct category)

4.4.4 Timing will begin after whistle blown.

4.4.5 All robots will be collected by referees before the competition begin, cannot share the same robot with other participants.

4.4.6 The parts which are fallen or broken from the robots cannot be fixed back onto the robot during match.

4.4.7 Timing will stop once all recyclables are cleared and robot back to BASE.

4.5 Deciding the winner

The winner will be the participant who has scored the highest score and back to BASE. If the participants scored the same points, the winner will be the robot completed the mission with the shortest time.

4.6 Points, Penalties and Disqualification

4.6.1 Points

Points will be calculated after the game end. Each recyclable correctly placed in the recycle storage will be awarded 5 points. Items which place on the black line (not fully into the recycle bin) does score any points.

4.6.2 Penalties

- If recyclable is wrongly place in the recycle storage, 5 points will be deducted for each recyclable.
- If the recyclables not fully placed into the recycle storage, no point will be awarded.

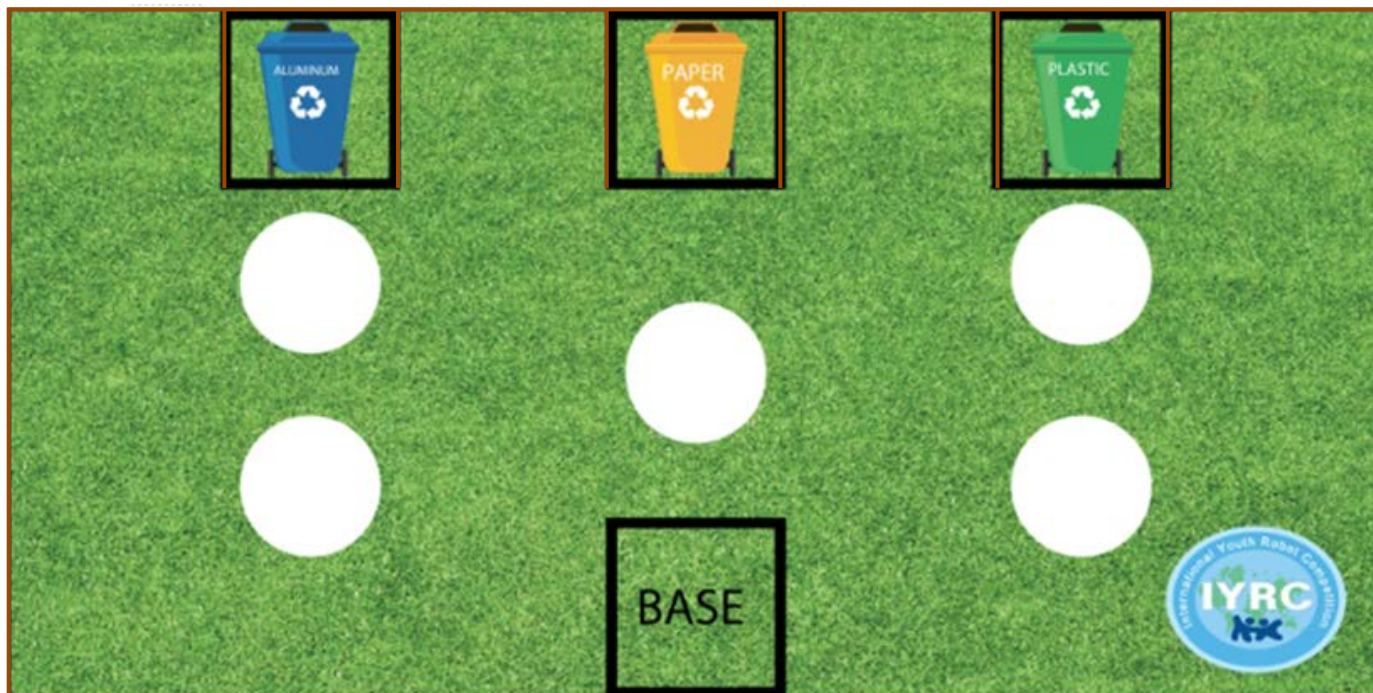
4.6.3 Disqualification

- Touching the robot while the match is in progress.
- A stalemate of more than 10 seconds.
- Robot does not comply with the size restriction.

Sample score record

Name	Plastic	Paper	Aluminum	Penalties	Back to BASE	Total Points	Time Taken(s)	Ranking
A	25	20	20	5	10	70	150	2
B	20	25	15	0	10	70	156	3
C	25	25	25	0	10	85	160	1

5.0 Game Field :



- Game Field surrounded by a wall height 8cm.
- 3 types of recyclables on each white spot with labeling (Paper, Plastic, Aluminum)



Paper



Plastic




Aluminum

There are 3 pcs of different recyclables and 3 categories of recycle storage:

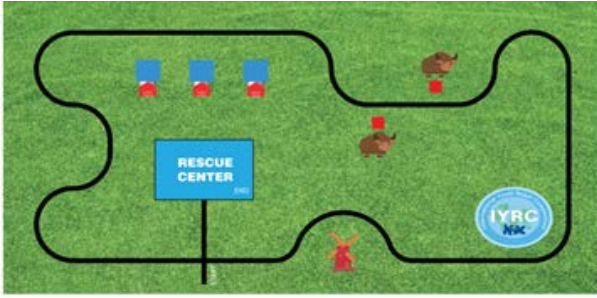
Plastic : (2 pcs of big wheel spindle and 1 pcs of M-shaft)

Aluminum : (2 pcs of AL Sprocket, 3 pcs of 15 AL Frame, 3 pcs of Pillar Block 45. 6 pcs of Bolt-8mm, 6 pcs of bolt-16mm and 12 pcs of Nut)

Paper: MRT Paper Cup

	Wall height 8 cm
---	------------------

3) ANIMAL KINGDOM

Age	7-12	
Team	Individual	
Robot Kits	MRT Series, MRT-X & HUNA educational robot kits (not include My Robot Time Toy series and MRT Soccer Robot)	
Mission	Program the line tracing robot that able to trace the line and trigger the IR sensors (feeding animals), carrying injured animals back to Rescue Center and stop	
Robot Building	Pre-build	
Game Method	Mission completion and Time record	

1.0 Objective

The goal of this game is to test student's ability to program the robot to help and assist human in completing the basic task in the daily farm. The task covered in this mission must be completed in order.

2.0 Robot Dimension and Weight

Robot must not exceed 20cm(H), 20cm(W), 20cm(L).

Robot is **NOT allowed** to expand at any time.

3.0 Restriction on Robot Design

- 3.1 Only MRT Series, MRT-X & HUNA educational robot kits (not include My Robot Time Toy series and MRT Soccer Robot). No limitation to the number of blocks used to build the robot.
- 3.2 May use maximum up to 4 DC motors, 5 IR sensors, 2 servo motors, 1 tracer sensor block and 1 mainboard.
- 3.3 Robots shall not damage any part of the field or obstacles deliberately.
- 3.4 Robots are not allowed to have any power supply more than 9V DC.). VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.
- 3.5 Must not cause any damage to the arena

4.0 Game Rules

4.1 Length of a match

4.1.1 Each game is stipulated for 3 minutes only. Allow to make two attempts and the highest score attempt will be recorded.

4.1.2 In the following cases, a match will end before 3 minutes.

- In the event of disqualification.
- When the referees judge that continuation of the match is impossible.
- Completion of task

4.2 Building of Robot

Pre-built and program

4.3 Starting of Robot

4.3.1 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.

4.3.2 Whistle will be blown as a sign of start of the match.

4.3.3 Participants is allowed to start (switch on) the robot using single switch operation.

4.4 Completion Task

4.4.1 Once the match has begun, the robot must move by its own to complete the task.

4.4.2 Task 1 : make sure the IR is sensed (means feeding animals) when passing each animal barn. (horse barn, cow barn and sheep barn)

4.4.3 Task 2 : bring the injured animals to the rescue center.

4.4.4 Task 3 : switch on the power generator by passing through the semi-circle.

4.4.5 Task 4 : make sure all injured animals carry into rescue center.

4.4.6 Task 5 is to stop the robot at the Rescue Center. Any part of the robot body stays inside the Rescue Center will do.

4.5 Deciding the Winner

The winner will be the participants who able to gain the highest score. If the participants scored the same points, the winner will be the robot completed the mission with the shortest time.

4.6 Points, Penalties and Disqualification

4.6.1 Points

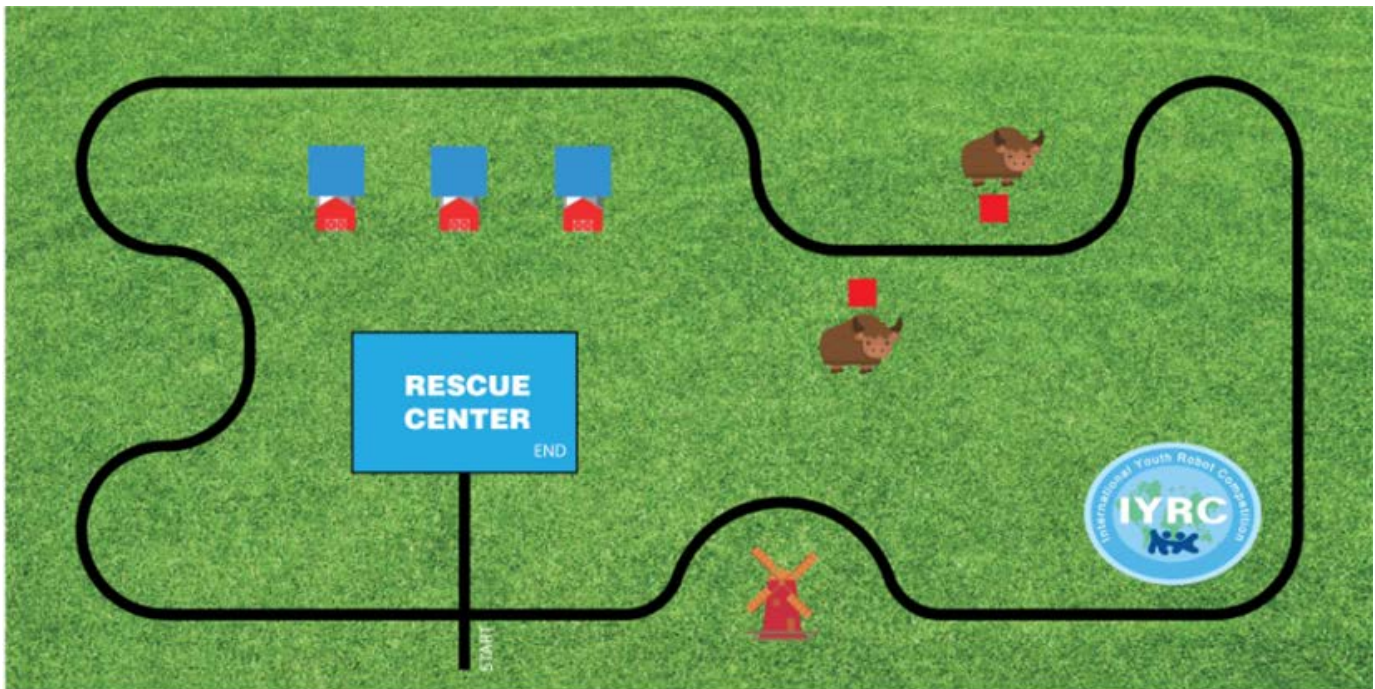
- If the robot successfully trigger the indicating LED at the barn from Red to Green (consider food delivered to the animal), 10 points earned for each barn. If the LED not turn to Green, then no point.
- Collect the injured animals at the road side. There are 2 injured animals, each animal will earn 5 points if successfully remove it from the injured area.
- Switch the generator on by spinning the long stick at the semi-circle. The robot must only follow the line and go to the next checkpoint then 20 points will be awarded.
- Successfully bring the injured animals back to the Rescue Center can earn 10 points for each animal. If any part of the injured animals out of the Rescue Center black box, there is no point.
- Stop the robot at the Rescue Center will be given 20 points.


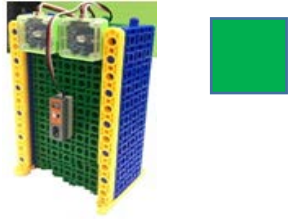

4.6.2 Disqualification

- Touching the robot or the item in the arena while the match is in progress.
- Robot does not comply with the size restriction.
- A stalemate of more than 10 seconds.
- Robot moves out of the line for more than 10s.


NAME	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TOTAL POINTS	TIME TAKEN (S)	RANKING
1	30	10	20	20	20	100	130s	1
2	30	10	20	20	20	100	150s	2
3	30	10	20	20	0	80	98s	3

5.0 Game Field :



<p>Injured Animal</p> 	<p>As picture shows it assembled with 4 pcs of 5*5 blocks.</p>
<p>Animal barn</p> 	<p>H- Horse barn: L : 10cm, H : 15cm , W:7cm C- Cow barn: L : 10cm, H : 15cm , W:7cm S- Sheep barn: L : 10cm, H : 15cm , W:7cm Height of IR sensor from ground : 5.5 cm</p>
<p>Switch</p> 	<p>Switch L: 20cm, H : 7cm , Cube: L : 7cm, H : 5cm , W:7cm</p>

4) R-Sports Mission (Soccer)

Age	7-12	
Team	Team 3 VS 3	
Robot Kits	MRT Series & HUNA educational robot kits (not include My Robot Time Toy series and MRT Soccer Robot)	
Mission	Soccer match using remote control	
Robot Building	Remote Control programmed robot	
Game Method	Tournament	

1.0 Objective

Test student ability to construct a robot with high stability and controlling skill to play soccer game.
Teamwork is the key to success.

2.0 Robot Dimensions and Weight

The size of the robot at the starting box shall not exceed 25cm (H) by 25cm (W) by 25cm (L).
However, robot is not allowed to expand larger than the size 25cm x 25cm x 25cm after the game starts.

3.0 Restrictions on Robot design

- 3.1 Only MRT Series & HUNA educational robot kit (not include My Robot Time Toy series and MRT Soccer Robot) parts are to be used to build the robot. There is no limitation to the amount of blocks used to build the robot.
You are allowed to cross use the parts from the above mentioned systems for the robots.
- 3.2 May use maximum up to 2 DC motors, 2 servo motors and 1 mainboard are allowed to use for the competition.
- 3.3 Robot built is not allow to modify its mechanical parts (painting/folding) and electronic parts. The player would be IMMEDIATELY disqualified if found guilty.
- 3.4 Robots shall not damage any part of the field or obstacles deliberately.
- 3.5 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.
- 3.6 Robots shall not cause any danger to the arena and surroundings in anyway whatsoever.
- 3.7 Robots RC receivers will need to be protected from any outside interference.
- 3.8 Robot cannot be design in a closed structure to handle the ball. The judge will check the robot structure before the competition start.

4.0 Game Rules

- 4.1 Length of a Match
Each game is stipulated for **3 minutes**.
Starts from Round of 16, first half (1.5 minutes), participants are required to change ends follow the judge instructions.
- 4.2 Building of Robot
Prebuilt and programmed
- 4.3 Starting the Robot
 - 4.3.1 Whistle will be blown as a sign of start of the match.

4.3.2 The participant who remote controls the robot shall keep distance with the game field area without touching or disturbing the game field.

4.4 Competition Tasks

4.4.1 All the games will be based on “knock out” system. All the teams will be distributed in opposing pairs by IYRC committee randomly.

4.4.2 Each team shall consist of 3 robots and 3 students with each student controlling one robot.

Teams can choose between two roles variants:

Eg: 1 defender + 2 strikers or 2 defenders + 1 striker.

Defender

- cannot leave his area (his half of the field), therefore cannot enter opponents area.
- allowed to enter own penalty area with non-stop movement to protect the gate, but not more than 10 seconds

Striker

- allowed to enter both own and opponent's area
- allowed to enter opponent's penalty area to hit the gates, but stay there not more than 10 seconds.
- Not allow to enter own penalty area.

4.4.3 During the match, the participants who control their robot please keep distance with game field, and don't touch or damage the field.

4.4.4 The team should distribute the roles prior the game and provide this information to referee. Roles cannot be changed during the match, but can be changed between the matches.

4.4.5 A robot is not allowed to purposely block the ball against the side of the field and not moving. If doing it more than 2 times, the participant will be removed and isolated for 1 minute.

4.4.6 Upon removal of a robot from the playing field, it can only re-enter the game upon referee's approval.

4.4.7 Robots can deploy any tactics or maneuvers, as long as it does not constitute a foul.

4.4.8 An offender will be issued a yellow card. Upon receiving 2 yellow cards, the player will be removed and being isolated for 1 minute before it can reenter the game field.

4.4.9 Extra time of 1 minute shall be played only in the event of a draw.

4.4.10 Penalties ball will be placed on a certain point (white dot). Robot which making a shot should start its movement behind the white dot to hit the ball and cannot push the ball exceed the white line.

4.4.11 All robots will be collected by referees before the competition begin, cannot share the same robot with other participants.

4.4.12 The parts which are fallen or broken from the robots cannot be fixed back onto the robots during the match.

4.4.13 While the match is in progress, at any time the referee whistles, the participants should stop the robot.

4.4.14 During the match, if both defender and striker enter into opponent's area, even if score a goal but the goal is not valid.

4.4.15 During the match, if the ball is holding by a robot and not moving (stalemate) for more than 5 seconds, It is consider as “Dead Ball”. Referee will blow whistle and all robots must stop moving. Referee will place the ball accordingly and the game will resume with referee's instruction. If more than 3 times, ball will put at the middle field and all robots back to their start point. Game resume with whistle blow.

4.5 Deciding the Winner

4.5.1 Within 3 minutes, the team with highest goals will be the winner.

4.5.2 The 'knock-out' stage shall not consist of any points and the winner of the game shall proceed to the next round.

4.5.3 The time limit for extra time shall be 1 minute.

4.5.4 In the event of a DRAW by the end of extra time, a penalty shoot-out shall decide the match with each team being allocated 3 penalties.

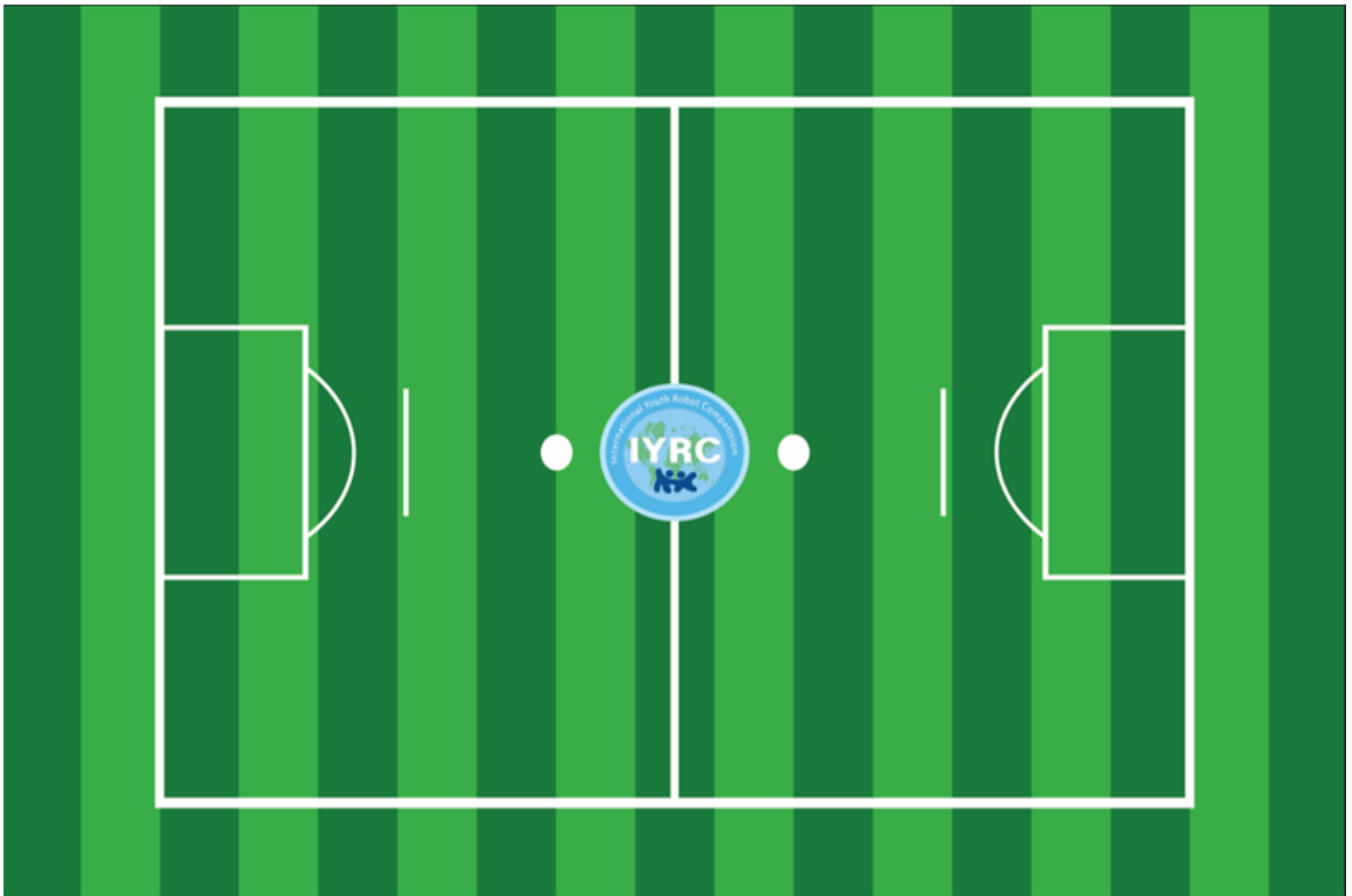
4.5.5 'Sudden death' penalties shall decide the match in the event both teams are still tied for score. The team that misses the first penalty with the other team scoring their penalty, losses the game. If still tied for score, then 1 vs 1 game starts, the one who score the first goal will be the winner team.

4.6 Disqualification

A team shall be disqualified if it commits any of the following during the match:

- Touching the robots while the match is in progress.
- Robot does not comply with the size restrictions.

5.0 Game Field



5) Bridge Of Friendship

Age	7-12	
Team	Team of 2	
Robot Kits	MRT Series, MRT-X & HUNA educational robot kit (not include My Robot Time Toy series and MRT Soccer Robot)	
Mission	Require participants to define and arrange the route for line tracing robot to reach to the end point.	
Robot Building	Pre-build	
Game Method	Mission completion	

1.0 Objective

The goal of this game is to test students' ability to construct and program robot to follow line. This game relies heavily on good communication and teamwork.

2.0 Robot Dimension and Weight

The size of the robot at the start and end box shall not exceed 20cm (H) by 20cm (W) by 20cm (L).

Robots are **NOT allowed** to expand at any time.

3.0 Restriction on Robot Design

- 3.1 Only MRT Series, MRT-X & HUNA educational robot kit (not include My Robot Time Toy series and MRT Soccer Robot) parts are to be used to build the robot. There is no limitation to the amount of blocks used to build the robot. You are allowed to cross use the parts from the above mentioned systems for the robots.
- 3.2 May use maximum up to 5 IR sensors, 4 DC motors, 1 tracer sensor block and 1 mainboard are allowed to use for the competition.
- 3.3 Robots shall not damage any part of the field or obstacles deliberately.
- 3.4 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.
- 3.5 Robots shall not cause any danger to the arena & surroundings in anyway whatsoever.
- 3.6 Robots will need to protect their sensors if necessary from any outside interference.
- 3.7 The robot design needs to take into account of crossing small gaps between two cards.

4.0 Game Rules

4.1 Length of a Match

4.1.1 Each game is stipulated for 3 minutes.

4.1.2 In the following cases, a match will end before 3 minutes

- When both the robots reached the end point.
- In the event of disqualification.
- When the referees judge that continuation of the match is impossible.
- First robot unable to reach the End point will have one more attempts. Game stop if second attempt fail.
- Second robot unable to reach the Start point also has another attempt if the first attempts failed.
Game stop if second attempt fail.

4.2 Building of Robot

Prebuilt & pre-program

4.3 Competition Tasks

4.3.1 All robots will be collected by referees before the competition begin, cannot share the same robot with other participants.

4.3.2 One participant stays at Start Point area and the other one stays at End Point area with their robot placed at the Robot box accordingly.

4.3.3 The route cards will be placed at the Stack of Cards box (each box has Straight Line Card x 15, Curve Line Card x 10 and one Start & End Point Card). There are 3 routes for participant to choose randomly. (refer to route section below).

4.3.4 Whistle will be blown as a sign at start of the match and participants start to place the cards onto the map according to the chosen route. One card can only put on a square box on the map that fit to the size of the card. Timing will begin after whistle blown.

4.3.5 Participants have to first place the Start Card on the Start Box and End Card on the End Box. Then, arrange the route (using the cards provided) to let the robot across the bridge at the center and then to the end point. Shape of the arranged route is not allow to change during the game.

4.3.6 Once the route is arranged (continuous line from start to end), put and turn on the Line Tracing Robot at the Start point (any part of robot is not allow to exceed the Start Card area) and let it move from start point to the end point.

4.3.7 If the referee judges that the continuation of the first robot is impossible, second attempt is allow by referee instruction. The participant has to collect the robot and turn it off then put it on the Start box again. The participants are allow to tidy up the route(optional) if needed before the robot is turn on again. The timing is keep on going.

4.3.8 Right after the first robot reached and stop at the end point, the robot can be removed by the first participant with the approval of referee. Second robot now can placed at End box (any part of robot is not allow to exceed the End Card area) by the second participant and turn it on to let it move from End point to the Start point. Before the second robot turn on, it is allow to tidy up (optional) the route if needed.

4.3.9 If the referee judges that the continuation of the second robot is impossible, second attempt is allow by referees instruction. The participant has to collect the robot and turn it off then put it on the End box again. The participants are allow to tidy up the route if needed before the robot is turn on again. The timing is keep on going.

4.3.10 The parts which are fallen or broken from the robots cannot be fixed back onto the robot during match.

4.3.11 Once the robot is moving, participants MUST keep a distance from the map and not allow to touch the robot and the cards on the route. Participants can touch the robot only with referee approval.

4.3.12 Participants only allow to touch or tidy up the route(optional) in the situation below :

- Before second attempt start. (after first attempt failed, robot turn off and put on the Start or End box)
- Before second robot start. (first robot reached the End box and second robot put on End Box)

4.3.13 The cards of "Start" and "End" must be placed on the corresponding box, and robot moves at "Start" box.

4.3.14 Timing will stop once all tasks completed.

4.4 Deciding the winner

The winner will be the team completed the mission with the highest point and shortest time.

4.5 Points and Disqualification

4.5.1 Points

- Robot that successfully crosses the bridge will be awarded 10 points.
- Robot Stops at End Point (For robot 1) and Start Point (For robot 2) will be awarded 5 points each

accordingly.

- Arrange the cards follow the chosen route, 10 points for the Start section and 10 points for the End section.

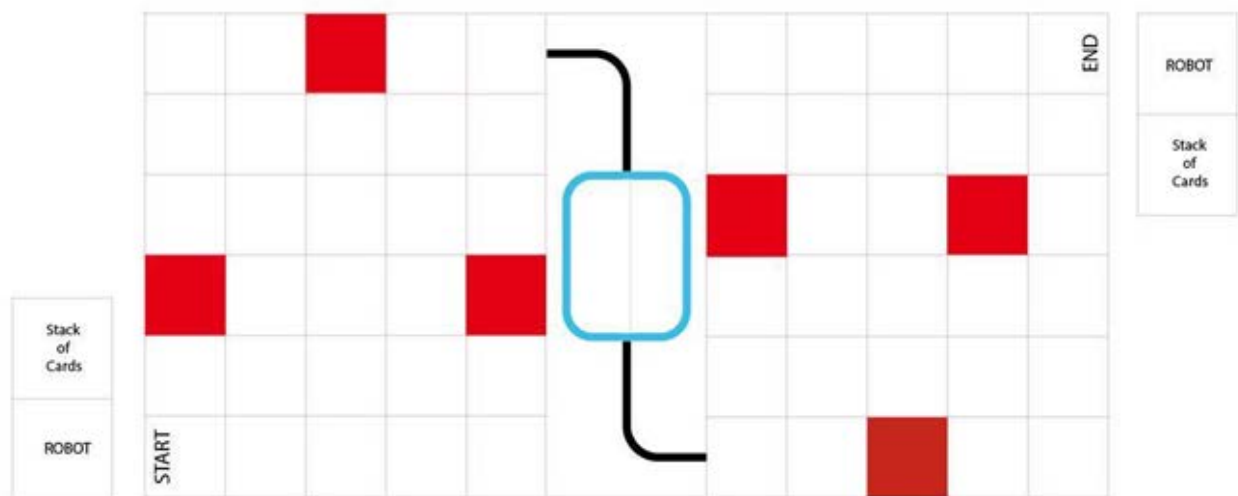
4.5.2 Disqualification

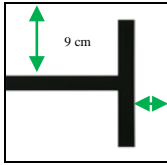
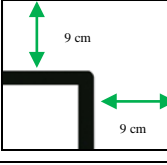
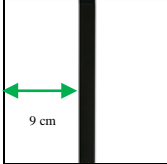
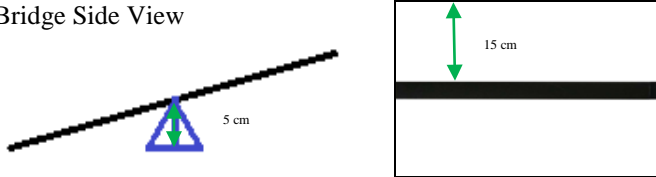
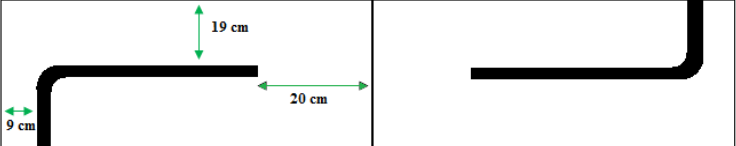

- Touching the robot while the match is in progress.
- A stalemate of more than 5 seconds.
- Robot does not comply with the size restriction.
- Robot move out of the route for more than 5s (apply to second attempt only).

Sample score record

Name	Cross Bridge	Stop at End Point	Stop at Start Point	Route (Start Section)	Route (End Section)	Total Points	Time Taken(s)	Ranking
A	20	5	5	10	10	50	150	1
B	20	5	0	10	10	45	156	2
C	10	5	0	10	10	35	Task not completed	3

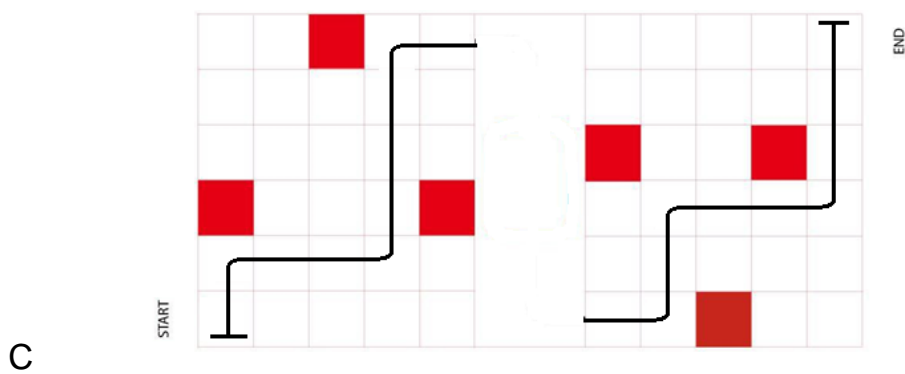
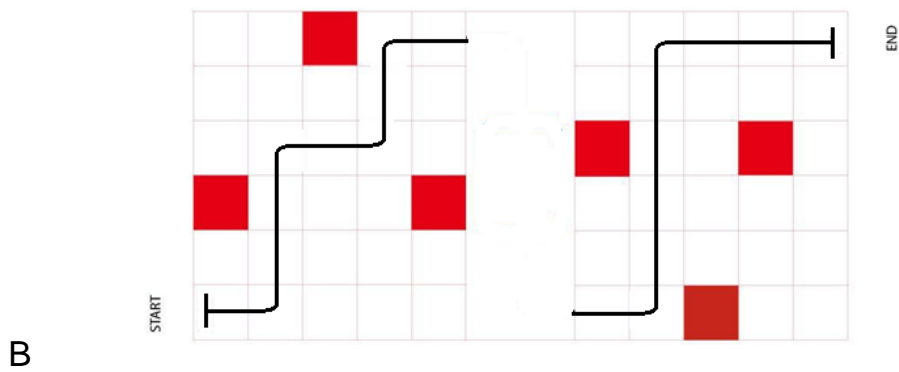
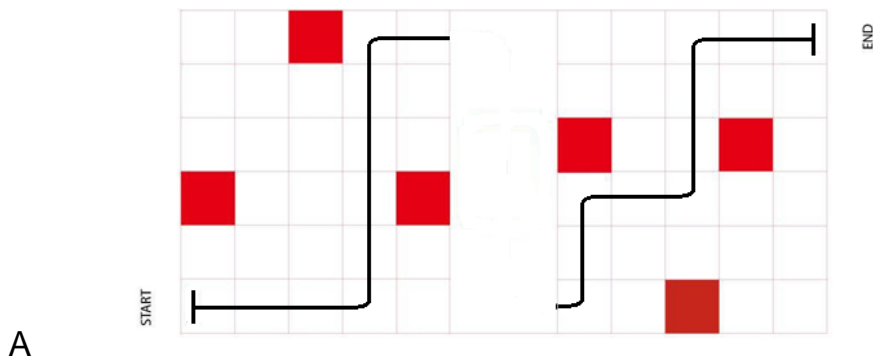
5.0 Game Field :



<p>Start / End Card 20 cm x 20 cm Thickness : 5mm Width of black line : 2 cm</p>	
<p>Curve Line Card 20 cm x 20 cm Thickness : 5mm Width of black line : 2 cm</p>	
<p>Straight Line Card 20 cm x 20 cm Thickness : 5mm Width of black line : 2 cm</p>	
<p>Bridge Card 44 cm x 32 cm Thickness : 5mm Width of black line : 2 cm</p>	<p>Bridge Side View</p> 
<p>Route to up / down bridge 40 cm x 60 cm each Thickness : 5 mm Width of black line : 2 cm</p>	
<p>Obstacle 20 cm x 20 cm Not allow to put any cards on it.</p>	

6.0 Route

- On the spot, one of the participant has to throw a dice to determine the Route A, B or C to arrange.
- Route A, B & C will be displayed as reference for the participants.



6) Junior Creative Design

Age	Junior : 7-12 years old	
Team	Team (2-5 students and 1 teacher)	
Robot Kits	MRT series of products	
Mission	Create a robot expressing the given theme	
Robot Building	Pre-build	
Game Method	Presentation and on/off-line evaluation by panel	

1.0 Objective

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

2.0 Robot Dimensions and Weight

The size and weight of the robot is not limited.

3.0 Restrictions on Robot design

- 3.1 Only MRT series of products are to be used to build the robot. There is no limitation to the amount of blocks used to build the robot. You are allowed to cross use the parts from the above mentioned systems for the robots.
- 3.2 Robots shall not damage any part of the field or obstacles deliberately.
- 3.3 Robots may include LSM ((Line Core M Servo motor) or MRT products (include all MRT new products: MRT-Coconut, MRT-duino, Blacksmith, etc) and there is no limitation on number of sensors and motors used.
Robots are allowed to move or make motion autonomously OR use remote control.
- 3.4 Robots can use and add other materials such as camera, sensors, paper, rings, clips, chopsticks, paper cups, and 3D Printing materials etc.
- 3.5 VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.
- 3.6 Robots shall not cause any danger to the arena & surroundings in anyway whatsoever.
- 3.7 Robots will need to protect their sensors if necessary from any outside interference.
- 3.8 Robots RC receivers will need to be protected from any outside interference.

4.0 Game Rules

- 4.1 Method of a Match
 - 4.1.1 Participants shall build a robot in advance.
 - 4.1.2 Participants are given 2 hours duration to prepare their robot.
 - 4.1.3 Each group has presentation time of 5 minutes to introduce their robots to the referee on the stage.
Presentation can be done in English. If they are unable to present in English language, they have to prepare their own translator.
 - 4.1.4 Robots may be displayed in/around the venue. The team members or teacher may keep the robots and explain to the public.
 - 4.1.5 Participants should carry the printed manual (presentation). About the manual, please refer to the rule

4.3.3 and 4.3.4.

4.2 Theme : UN's Sustainable Development Goals (SDGs)

The 5 themes are selected among 17 SDGs proposed by the United Nations. The robot can be based on one of the following field ONLY:

- Zero Hunger
- Good Health and Well-Being
- Clean Water and Sanitation
- Affordable and Clean Energy
- Sustainable Cities and Communities

You are strongly recommended to study what the themes above mean at

<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

4.3 Robot Registration in Advance

4.3.1 Participants should submit the requirements IN ADVANCE to the official email (HQ.IYRA@gmail.com) and the organizer shall upload the files at <http://www.mrtacademy.org>.

4.3.2 Please check the important dates;

- Deadline for sending requirements to email : October 31 (all participants)
- Online Evaluation : November 15 (by 5-9 referees)
- Confirmation to the qualified teams : November 20 (IYRA HQ)

4.3.3 The requirements are as below;

- More than 3 pictures containing robot, all your team member faces, and teacher together in one photo
- Video showing your robot working/moving (10 seconds to 1 min.
- Manual (Presentation file) including 1) Robot Name 2) Purpose 3) Team Member introduction and task allocation 4) Introduction of the project 5) Specification and features 6) how to program (if needed) 7) functionality of robot

4.3.4 The manual must be in English.

4.4 Deciding the Winner

4.4.1 The judges will check if the team meets the requirements or not, and evaluate teams' works online first.

4.4.2 The judges will notice the results If the participants are qualified or disqualified. For those qualified projects will be uploaded to www.mrtacademy.org to be shared with everyone.

4.4.3 If the participants are qualified, then they are allowed to advance to the final round, a.k.a. IYRC Thailand

4.4.4 Score shall consist of :

- Relevance to theme (10 score) : online evaluation
- Creativity & Uniqueness (30 score) : online evaluation
- Robot Functionality (30 score) : on spot evaluation
- Team work (10 score) : on spot evaluation
- Presentation skill (20 score) : on spot evaluation

5.0 What is different from Junior and Senior

5.1 Creative Design Senior rules are same as Junior except additional point system.

5.2 Creative Design Senior has additional points when;

- Robots make motion or move autonomously. (+5 points)
- Participants submit how to code or programing code (+5 points)
- Participants use more than two MRT products together. (+5 points) e.g.) LSM + Blacksmith coding board + MRT Blocks

Eg: Coconut + MRT Sensors + 3D Printing materials

6.0 Awards:

6.1 ALL the qualified team will be awarded.

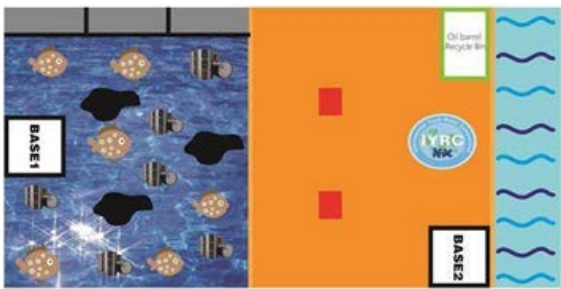
Gold, Silver, and Bronze winners may get Trophy + Certificates, and the others may get certificates only

6.2 The teachers of the winning team will be awarded separately.

Judges will be 5-9 experts from various nations recommended by National Partners of IYRA

SENIOR CATEGORIES

1) MARINE TRANSPORTER

Age	13-17	
Team	2 persons / team	
Robot Kits	MRT Series, MRT-X & HUNA educational robot kit (not include My Robot Time Toy series and MRT Soccer Robot)	
Mission	Require participants to use remote control robot to transport the marine creature to a safer environment and to clean the oil barrel & oil spill in the ocean. Promote teamwork.	
Robot Building	Pre-build	
Game Method	Mission completion	

1.0 Objective

The goal of this game is to test student ability to construct and control a robot to transport the marine creature to a safer environment and to clean the oil barrel & oil spill in the ocean.

2.0 Robot Dimension and Weight

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

Robot is allowed to expand to any size after the game starts.

3.0 Restriction on Robot Design

- 3.1 Only MRT Series, MRT-X & HUNA educational robot kit (not include My Robot Time Toy series and MRT Soccer Robot) parts are to be used to build the robot. There is no limitation to the amount of blocks used to build the robot. You are allowed to cross use the parts from the above mentioned systems for the robots.
- 3.2 May use maximum up to 2 motors, 2 servos motor, 1 mainboard only.
- 3.3 Robots shall not damage any part of the field or obstacles deliberately.
- 3.4 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.
- 3.5 Must not cause any danger to the arena.
- 3.6 RC Receiver will need to be protected from outside interference.

4.0 Game Rules

4.1 Length of a match

- 4.1.1 Each game is stipulated for 4 minutes only.
- 4.1.2 In the following cases, a match will end before 3 minutes.
 - Completion of all tasks and stop at the start point.
 - In the event of disqualification.
 - Damages on the field blocks.
 - When the referees judge that continuation of the match is impossible.

4.2 Building of Robot

Pre-build and programmed robot.

4.3 Starting of Robot

4.3.1 Whistle will be blown as a sign of start of the match.

4.3.2 Participants is allowed to start (switch on) the robot using single switch operation.

4.3.3 The participants who remote control the robot shall keep distance with the game field area without touching or disturbing the game.

4.4 Completion Task

4.4.1 This is a mission completion game with maximum 4 minutes time.

4.4.2 Each team will have 2 students and each student needs to control their own robot and complete their own missions in their own BASE area.

4.4.3 Robots will place at "Base 1" & "Base 2" separately, and all missions must be completed in sequence within the given time.

4.4.4 Once the match has begun, each robot can move to any direction in their own area.

4.4.5 For robot at "Base 1" field:

Mission 1 : The robot has to collect and send all Fish to the Base 2 field;

Mission 2 : And then collect all Oil Barrel and send to Base 2 field;

Mission 3 : After all fish and oil barrel have been cleared, the robot has to go to sorbents storage area to get the sorbents and put onto the oil split areas (3 spots).

Mission 4 : After all missions done and stop inside Base box.

4.4.6 For robot at "Base 2" field:

Mission 1: The robot has to transport all the fish and put it into clean sea.

Mission 2 : After that, robot has to transport the oil barrel into "Oil Barrel Recycle Bin".

Mission 3 : After all mission done and stop inside Base box.

4.4.7 Once all fish and oil barrel have been cleared, and get all sorbents put onto the oil split areas (3 spots), the two robots has to go back to its Base areas and stop.

4.4.8 Timing will stop once all missions are completed.

4.4.9 The parts which are fallen or broken from the robots cannot be fixed back onto the robot during the match.

4.4.10 All robots will be collected by referees before the competition begin, cannot share the same robot with other participants.

4.5 Deciding the Winner

4.5.1 The winner will be the team who has score the highest and if the team has same points then the shortest time of completion will be the winner.

4.5.2 There are total of 7 tasks for both robot. (save marine life and put into clean sea, collect oil barrel and put into recycle bin, and ocean cleaning)

4.6 Points, Penalties and Disqualification

4.6.1 Points

- Safely transport the fish to clean sea, each fish 5 points.
- Collect the oil barrel and put into recycle bin, each barrel 5 points.
- Place the sorbents onto the oil spill area, each sorbents placed correctly 5 points will be awarded.
- Completed task and back to base area, 10 points will be awarded.

4.6.2 Penalties

- If the items are accident/purposely put into the wrong area for example (putting marine creatures to the recycle bin or putting oil barrel into clean sea) 10 points will be deducted strictly!
- For Robot Base 1, Oil Barrel sent to Base 2 area before all fish has been cleared, each barrel will be deducted 10 points.
- For Robot Base 2, Oil Barrel sent into recycle bin before all fish has been cleared, each barrel will be deducted 10 points.
- No points awarded if the sorbents are not properly placed on the oil split area.

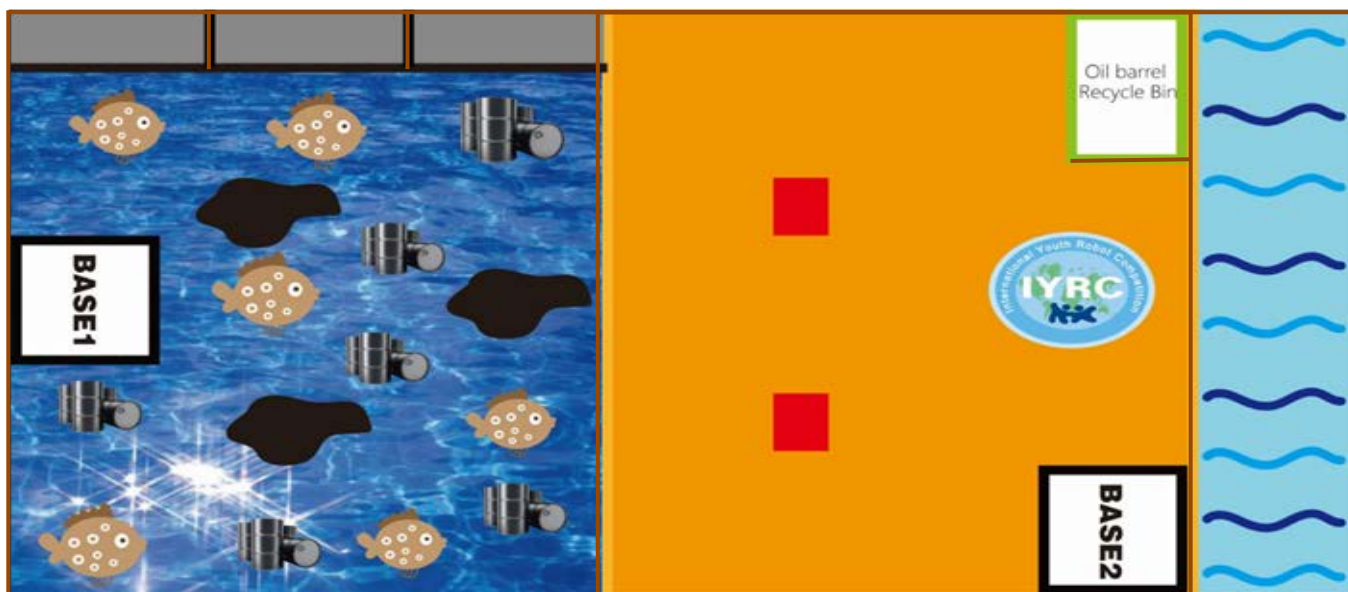
4.6.3 Disqualification


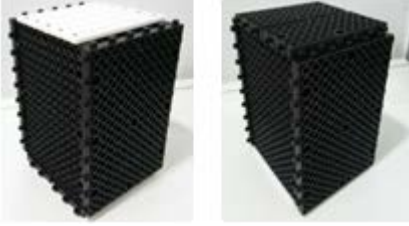



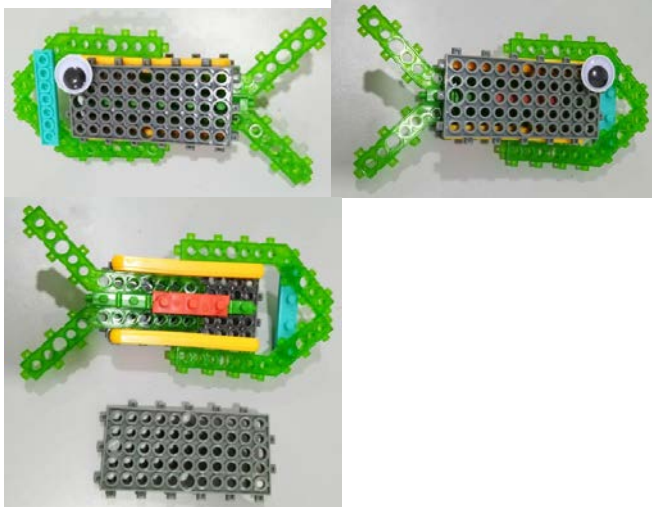




- Touching the robot or the item in the arena while the match is in progress.
- A stalemate of more than 10 seconds.
- Robot does not comply with the size restriction.

Sample score record

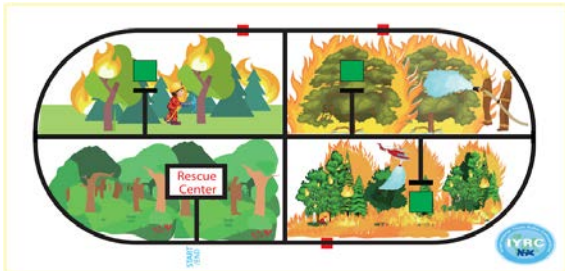
TEAM	Marine Creatures Transported Safely	Oil Barrel Into Recycle Bin	Sorbents Placed on the Oil Split Area	Task Completed and Back to Base area	Penalty	Total Points	Time Taken (s)	Ranking
A	60	60	15	10	0	145	170	1
B	60	50	0		0	110	180	3
C	60	60	15		15	120	170	2

5.0 Game field



Obstacle 	 <p>L : 7.5cm, W : 8.5cm, H : 12cm</p>
Oil Barrel 	 <p>MRT1 Big Wheel</p>
Fish 	
Sorbents 	 <p>(3 pcs place at sorbents storage area)</p>
Oil Spilt spot 	<p>L : 15cm, W : 15cm</p>
	<p>Surrounded by a wall height 8cm.</p>

2) SAVE THE FOREST

Age	13-17	
Team	Individual	
Robot Kits	MRT Series, MRT-X & HUNA educational robot kit (not include My Robot Time Toy series and MRT Soccer Robot)	
Mission	Program the line tracing robot that able to trace the line and trigger the IR sensors (put out fire), carrying items(survivors) back to rescue center.	
Robot Building	Pre-build	
Game Method	Mission completion and Time record	

1.0 Objective

The goal of this game is to test student's ability to program the robot to save and preserve the remaining nature and also to save the survivors. This also will test the student's decision making as to save which one first the forest or the survivors.

2.0 Robot Dimension and Weight

Robot must not exceed 20cm(H), 20cm(W), 20cm(L).

Robot is **NOT allowed** to expand at any time.

3.0 Restriction on Robot Design

3.1 Only MRT Series, MRT-X & HUNA educational robot kit (not include My Robot Time Toy series and MRT Soccer Robot). No limitation to the number of blocks used to build the robot.

3.2 May use maximum up to 4 DC motors, 2 servos, 5 IR sensors, 1 tracer sensor block and 1 mainboard only.

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

3.4 Robots are not allowed to have any power supply more than 9V DC. VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.

3.5 Must not cause any danger to the arena.

4.0 Game Rules

4.1 Length of a match

4.1.1 Each game is stipulated for 3 minutes only. Each participant is allow to make two attempts and the highest score attempt will be recorded.

4.1.2 In the following cases, a match will end before 3 minutes.

- In the event of disqualification.
- When the judge sees that continuation of the match is impossible.
- Damages on the arena
- Completion of time
- Damages the forest

4.2 Building of Robot

Pre-built and program

4.3 Starting of Robot

4.3.1 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.

4.3.2 Whistle will be blown as a sign of start of the match.

4.3.3 Participants is allowed to start (switch on) the robot using single switch operation.

4.4 Completion Task

4.4.1 Once the match has begun, the robot must move by its own to complete the task.

4.4.2 Collect and bring the survivors to the rescue center.

4.4.3 Go to the affected area of the forest (burning area only), trigger the IR sensor to put out the fire (LED Red change to Green).

4.4.4 The parts which are fallen or broken from the robots cannot be fixed back onto the robot during match.

4.4.5 Back and stop at starting point.

4.5 Deciding the Winner

4.5.1 The winner will be the participants who able to complete the task with highest score.

4.5.2 If the score is the same for two participants, the shortest time will be the winner.

4.6 Points, Penalties and Disqualification

4.6.1 Points

- 10 points will be awarded for each survivor if properly placed in the rescue center. If physically any part of survivor body outside the rescue center box, consider as out of the box, no point.
- Put out the fire (triggered the IR sensor to turn LED Red to Green) will be awarded 10 points each.
- If LED not turn to Green, there is no point.
- Robot return and stop at starting point will be awarded 20 points.

4.6.2 Penalties

Placing the survivor at any affected area of the forest will receive a penalty which is the deduction of 15 points.

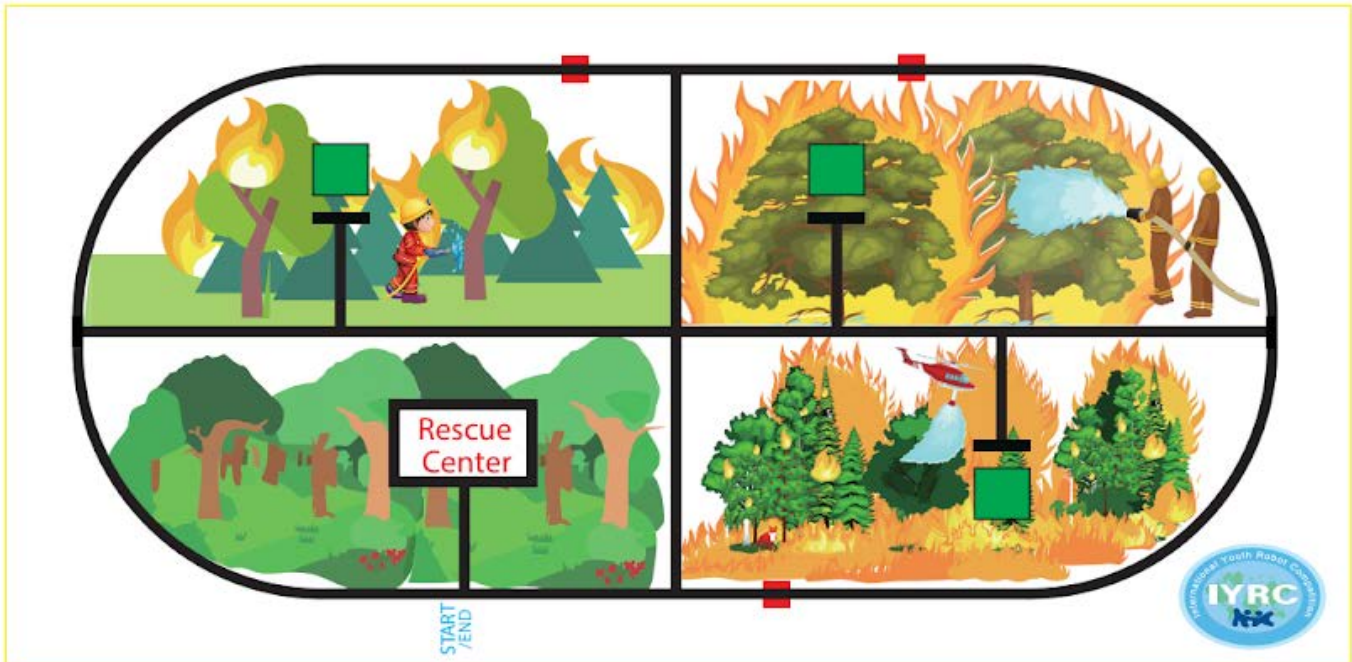
4.6.3 Disqualification

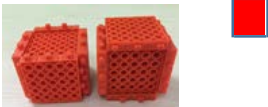

- Touching the robot or the item in the arena while the match is in progress.
- Robot does not comply with the size restriction.
- A stalemate of more than 10s.
- The robot moves out of the line for more than 10s.

Sample score record

TEAM	Survivor Saved	Put out fire	Penalty	Stop at starting point	Total Points	Time Taken (s)	Ranking
A	30	30	0	20	80	180s	2
B	30	30	0	20	80	160s	1
C	20	30	-15	20	55	130s	3

5. Game Field



<p>Survivor</p> 	<p>Assembled by 4 pcs of 5*5 Blocks</p>
<p>Sensor to be triggered</p> 	<p>L : 10cm, H : 15cm , W:7cm</p> <p>Height of IR sensor from ground : 5.5 cm</p>

3) Senior Creative Design

Age	Senior : 13-17 years old	
Team	Team (2-5 students and 1 teacher)	
Robot Kits	MRT series of products	
Mission	Create a robot expressing the given theme	
Robot Building	Pre-build	
Game Method	Presentation and on/off-line evaluation by panel	

1.0 Objective

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

2.0 Robot Dimensions and Weight

The size and weight of the robot is not limited.

3.0 Restrictions on Robot design

- 3.1 Only MRT series of products are to be used to build the robot. There is no limitation to the amount of blocks used to build the robot. You are allowed to cross use the parts from the above mentioned systems for the robots.
- 3.2 Robots shall not damage any part of the field or obstacles deliberately.
- 3.3 Robots shall include LSM ((Line Core M Servo motor) or MRT products (include all MRT new products: MRT-Coconut, MRT-duino, Blacksmith-Coding Board, etc) and there is no limitation on number of sensors and motors used.
- 3.4 Robots are allowed to move or make motion autonomously OR use remote control.
- 3.5 Robots can use and add other materials such as camera, sensors, paper, rings, clips, chopsticks, paper cups, and 3D Printing materials etc.
- 3.6 VAC (Volt of Alternating Current) power supplies are strictly prohibited for safety reasons.
- 3.7 Robots shall not cause any danger to the arena & surroundings in anyway whatsoever.
- 3.8 Robots will need to protect their sensors if necessary from any outside interference.
- 3.9 Robots RC receivers will need to be protected from any outside interference.

4.0 Game Rules

4.1 Method of a Match

- 4.1.1 Participants shall build a robot in advance.
- 4.1.2 Participants are given 2 hours duration to prepare their robot.
- 4.1.3 Each group has presentation time of 5 minutes to introduce their robots to the referee on the stage.
Presentation can be done in English. If they are unable to present in English language they have to

prepare their own translator.

4.1.4 Robots may be displayed in/around the venue. The team members or teacher may keep the robots and explain to the public.

4.1.5 Participants should carry the printed manual (presentation). About the manual, please refer to the rule

4.3.3 & 4.3.4

4.2 Theme : UN's Sustainable Development Goals (SDGs)

4.2.1 The 5 themes are selected among 17 SDGs proposed by the United Nations. The robot can be based on one of the following field ONLY:

- Zero Hunger
- Good Health and Well-Being
- Clean Water and Sanitation
- Affordable and Clean Energy
- Sustainable Cities and Communities

You are strongly recommended to study what the themes above mean at

<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

4.3 Robot Registration in Advance

4.3.1 Participants should submit the requirements IN ADVANCE to the official email (HQ.IYRA@gmail.com) and the organizer shall upload the files at <http://www.mrtacademy.org>.

4.3.2 Please check the important dates;

- Deadline for sending requirements to email : October 31 (all participants)
- Online Evaluation : November 15 (by 5-9 referees)
- Confirmation to the qualified teams : November 20 (IYRA HQ)

4.3.3 The requirements are as below;

- More than 3 pictures containing robot, all your team member faces, and teacher together in one photo
- Video showing your robot working/moving (10 seconds to 1 min.
- Manual (Presentation file) including 1) Robot Name 2) Purpose 3) Team Member introduction and task allocation 4) Introduction of the project 5) Specification and features 6) how to program (if needed) 7) functionality of robot

4.3.4 The manual must be in English.

4.4 Deciding the Winner

4.4.1 The judges will check if the team meets the requirements or not, and evaluate teams' works online first.

4.4.2 The judges will notice the results If the participants are qualified or disqualified. For those qualified projects will be uploaded to www.mrtacademy.org to be shared with everyone.

4.4.3 If the participants are qualified, then they are allowed to advance to the final round, a.k.a. IYRC Thailand

4.4.4 Score shall consist of :

- Relevance to theme (10 score) : online evaluation

- Creativity & Uniqueness (30 score) : online evaluation
- Robot Functionality (30 score) : on spot evaluation
- Team work (10 score) : on spot evaluation
- Presentation skill (20 score) : on spot evaluation

5.0 What is different from Junior and Senior

5.1 Creative Design Senior rules are same as Junior except additional point system.

5.2 Creative Design Senior has additional points when;

- Robots make motion or move autonomously. (+5 points)
- Participants submit how to code or programing code (+5 points)
- Participants use more than two MRT products together. (+5 points) e.g.) LSM + Blacksmith coding board + MRT

Blocks

Eg: Coconut + MRT Sensors + 3D Printing materials

6.0 Awards:

6.1 ALL the qualified team will be awarded.


Gold, Silver, and Bronze winners may get Trophy + Certificates, and the others may get certificates only

6.2 The teachers of the winning team will be awarded separately.

Judges will be 5-9 experts from various nations recommended by National Partners of IYRA

OPEN CATEGORIES

1) Humanoid Robot Dance

Age	ALL (no limits)	
Team	3 persons with 3 robots	
Robot Kits	LINE Humanoid	
Mission	Creating Robot Dance to the music	
Robot Building	Pre-build, autonomous	
Game Method	Dance Performance	

1.0 Objective

To test students' skills in creating and making motion of LINE Humanoid

2.0 Robot Dimensions and Weight

- 2.1 Only LINE Humanoid robot parts can be used to build the robot
- 2.2 You are only allowed to modify the mechanical parts but not electronic parts. The participant would be IMMEDIATELY disqualified, if found guilty
- 2.3 Robot shall not damage any part of the field or obstacles deliberately
- 2.4 Robot shall not cause any danger to the arena & surroundings in anyway whatsoever
- 2.5 Robot will need to protect their sensors if necessary from outside interference
- 2.6 Robots RC receiver will need to be protected from any outside interference

3.0 Game Rules

- 3.1 Length of a Match
 - The length of song is within 2 minutes.
- 3.2 Building of Robot
 - 3.2.1 Prebuilt and programmed
 - 3.2.2 The battery specification, length of robot leg and arm should strictly adhere to the instruction manual (LINE Humanoid)
 - 3.2.3 The appearance of the humanoid can be modified by changing color and accessories
 - 3.2.4 The movement of the robot can be programmed freely
 - 3.2.5 Each participant can prepare one backup LINE Humanoid
- 3.3 Starting the Robot
 - 3.3.1 Whistle will be blown as a sign of start of the match
 - 3.3.2 Participant is allowed to start (SWITCH ON) the robot using single switch operation
 - 3.3.3 The participant shall keep a distance from the game field during the game
 - 3.3.4 The humanoid can be controlled using any Android phone.
- 3.4 Competition Tasks
 - 3.4.1 Each team will be given 5 minutes including preparation, introduction and performance.
 - 3.4.2 Robots should be three kits.
 - 3.4.3 Participants shall introduce their team and performance to the referee before playing music.
 - 3.4.4 When participants are ready, background music will be played. Any kind of music shall be allowed. Music length should be within 2 minutes.

3.4.5 The parts which are fallen or broken from the robot cannot fix back onto the robot during the match

3.4.6 During the robot dancing, it is not allowed to touch or control the robot additionally.

3.5 Deciding the Winner

3.5.1 Referee shall be consisted of more than three persons

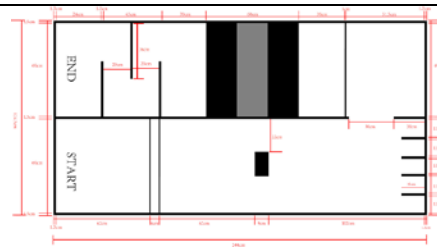
3.5.2 Each performance shall be evaluated based on following method.

- Robot Dance Rationality, Coherent motions, Completeness [20 points]
- Robot Dance Choreography, Innovative and Creative [20 points]
- Robot dance moves in harmony with music [20 points]
- Robot motion complexity, coordination [20 points]
- Salutation before Start and after End of Dance [10 points]
- Teamwork [10 points]

Team	Rationality, Coherent motions, Completeness [20]	Choreography, Innovative, Creative [20]	Harmony with music [20]	Complexity, Coordination [20]	Salutation before and after dance [10]	Teamwork [10]	Total	Ranking

* Whenever robots fall down during the performance, the participants should get permission from the Referees in order to touch the robot.

2) Humanoid Robot Mission

Age	ALL (no limits)	
Team	Individual	
Robot Kits	LINE Humanoid	
Mission	Using shortest time to pass through 5 missions and reach destination control by Android device	
Robot Building	Pre-build, Remote control method	
Game Method	Mission completion and time record	

1.0 Objective

To test students' skill in constructing and controlling of high stability LINE Humanoid to complete the mission.

2.0 Robot Dimensions and Weight

- 2.1 Only LINE Humanoid robot parts can be used to build the robot.
- 2.2 You are only allowed to modify the mechanical parts but not electronic parts. The player would be IMMEDIATELY disqualified, If found guilty
- 2.3 Robot shall not damage any part of the field or obstacles deliberately.
- 2.4 Robot shall not cause any danger to the arena & surroundings in anyway whatsoever.
- 2.5 Robot will need to protect their sensors if necessary from outside interferences.
- 2.6 Robots RC receiver will need to be protected from any outside interferences.

3.0 Game Rules

- 3.1 Length of a Match
Each game is stipulated for 5 minutes

4.0 Building of Robot

- 4.1 Prebuilt and programmed
- 4.2 The battery specification, length of robot leg and arm should strictly adhere to the instruction manual (LINE Humanoid)
- 4.3 The appearance of the humanoid can be modified by changing color and accessories
- 4.4 The movement of the robot can be programmed freely
- 4.5 Each participant can prepare one backup LINE Humanoid. Not allow to use other participant robot to complete the game.
- 4.6 Participant should prepare their own Android device (Airplane Mode) to control the robot.

5.0 Starting the Robot

- 5.1 Whistle will be blown as a sign of start of the match.

5.2 Participant is allowed to start (SWITCH ON) the robot using single switch operation

5.3 The participant shall keep a distance from the game field during the game

5.4 The humanoid can be controlled using any Android phone under flight mode

6.0 Competition Tasks

6.1 Once the game stated, the robot must go through the route of the game to complete all the mission set.

6.2 Robot must STOP at the END POINT after finished all the missions for time recording purpose

6.3 Once the whistle blown, the robot can start to move from the START POINT

6.4 All robots will be collected by referees before the competition begins. Not allowed to share robot with other participants.

6.5 The parts which are fallen or broken from the robot cannot fix back onto the robot during the match.

6.6 Once robot stops at END POINT, timer will be stop.

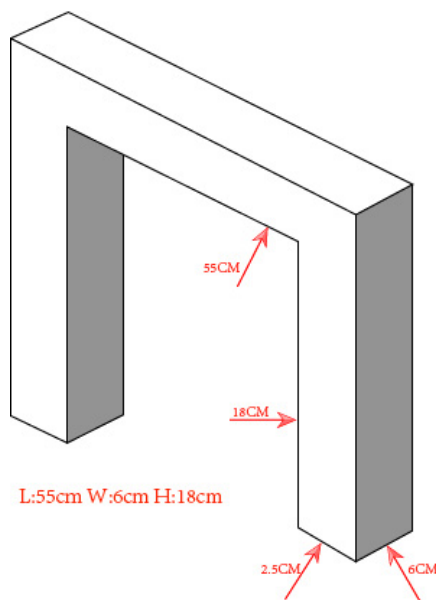
6.7 In the middle of the game if robot out of battery and not be able to control anymore, game will be terminated.

7.0 Deciding the Winner

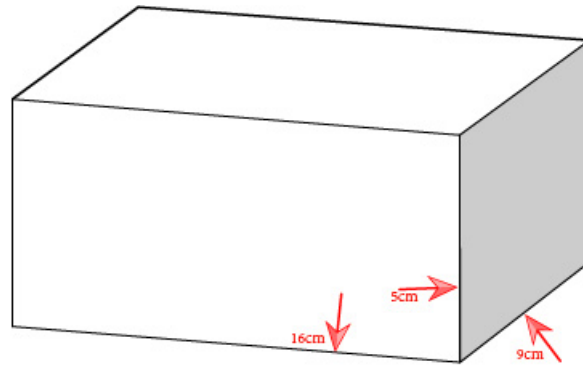
7.1 Robot reached the END POINT with highest points will win the competition. If same point, shortest time will be the winner.

7.2 Total 5 Missions

- Mission 1 : Robot needs to crawl under obstacles placed on the passage. Successfully completed mission will be awarded 20 points.

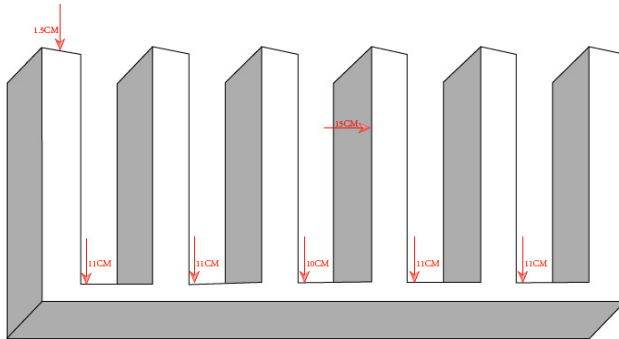


- Mission 2 : Robot needs to use hand to carry the props (6cm soft sponge cube) and robot legs must cross the red line before dropping the props to designated area. Successfully completed mission will be awarded 20 points.

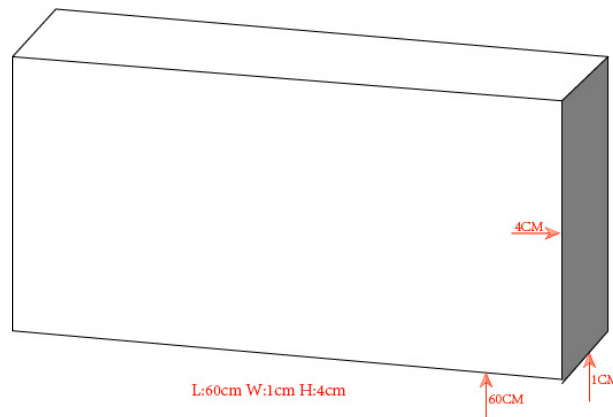


Rectangle: L:16cm W:9cm H:5cm

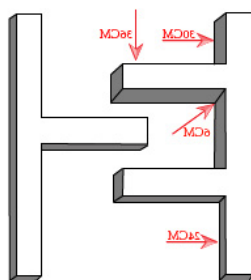
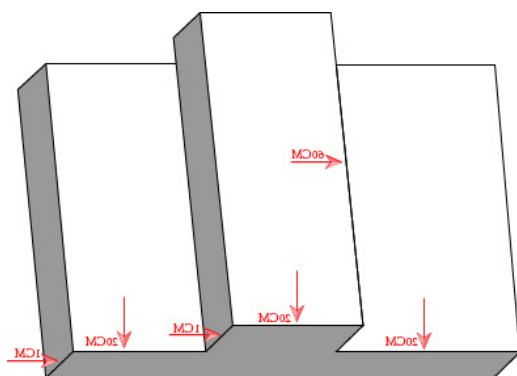
- Mission 3 : The robot needs to use a foot to kick the soccer ball(there are 2 balls) into the slot label with 16/18/20/18/16. The ball successfully enters into the highest point slot will be recorded.



- Mission 4 : Robots need to cross above the obstacles placed in the passage. Successfully completed mission will be awarded 20 points.



- Mission 5 : Robot can only walk through the two steps staircase (walk up stairs 5 points, walk down stairs 5 points) and then walk through the Z- type route to reach the end (10 points).



- If the participant unable to complete mission 1, 2, 4, 5, allow to reattempt with referee approval. Maximum 2 attempts. Allow to give up the mission and there will be no score for this mission.
- For mission 4 & 5, robot is not allow to roll over. There will be no points if roll over.
- Robot moves out of game field, referee is responsible to put it back in the game field. Participant is not allow to touch the robot during the game. After two warning given by referee, game terminated.
- If foul during the match, no points will be given even the robot stops at the END POINT.
- Participant can give up any mission without any points. Must get approval from referee beforehand.

Sample score Record :

Name	Mission 1	Mission 2	Mission 3	Mission4	Mission 5	Total	Time (Sec)	Ranking
A	20	20	20	20	20	100	90	2
B	20	20	20	0	15	75	92	3
C	20	20	20	20	20	100	85	1

4.0 Game Field

