**IYRC 2015 Game Categories – ver1.0**

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| 1. | **Kinder Mission** |

**Summary**

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| Level | Kindergarten ( 6-7 years old) |
| Team | Individual |
| Robot | Educational Robot Kit |
| Mission | Simple Addition & subtraction questions |
| Robot Building | In advance |
| Game Method | Mission completion within fixed time frame |

**Rules and Regulation:**

The goal of this competition is to provide an event that requires students to solve some simple mathematics calculation and move the correct answer cube to the answer area.

The students are not allowed to use any tools to do the calculation when pick a question from the box provided. After solving the math problem, the student must move the answer cube to the answer area before picking a new question. They must try as fast as possible to do the calculation and move the answer cube to the answer area in the time given. Points will be given only for the correct answer.

A. Picking up a math question(Card) from a box **ONLY** when the referee instruct to do so, PLACE the card on the left of the start point, solve the question and control the robot to move the correct answer to the answer area, only one answer(block stick with number) can allow to be move in the answer area. Quickly control the robot back to the start point and pick up another question when the referee approve. Solve as many questions as possible during 3 minutes.

B. Each correct answer will score 1 point and the student with the higher points will be the winner. Answer is accepted and checked only after cube moved inside answer area. Robot allowed to move any cubes outside answer area freely.

C. Prizes and trophies will be awarded to the Top 6 participants.

D. Time limit for each game is 3 minutes.

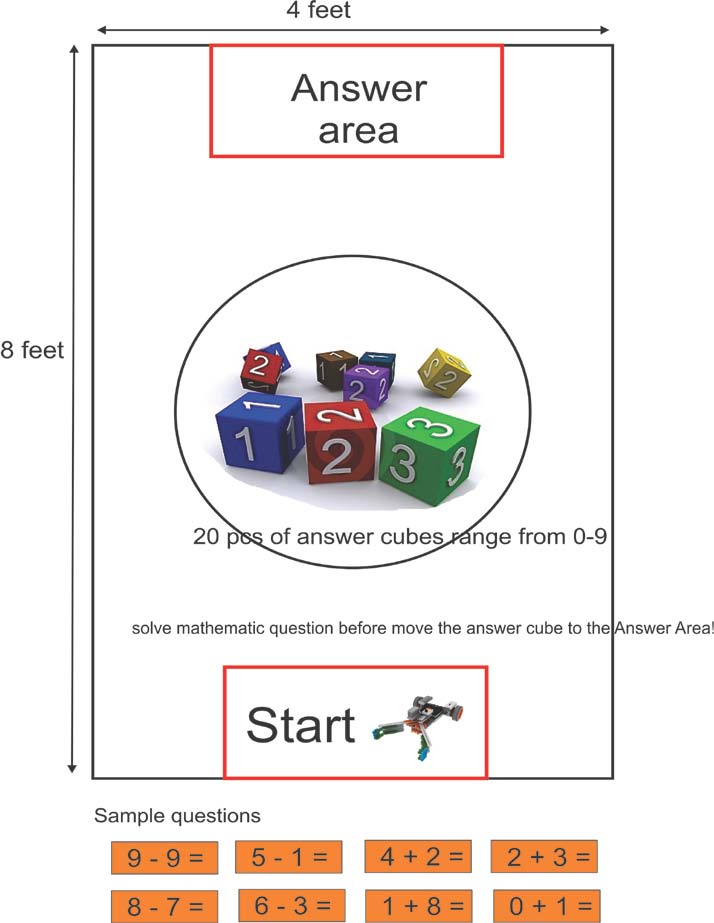
E. No Extra time shall be played in an event of a DRAW. The winner will be decided by their age. (example: a 6 and 7 year old participants scored the same points, the 6 year old participant will be the winner due to smaller in age.)

F. The robot must not have any foreign part(includes rubber band, black tapes and scotch tapes). If found guilty, the player would be **IMMEDIATELY** disqualified.

G. Maximum size of robots are limited to **25 cm×25 cm×25 cm. (※ Robot size will be examined before starting the competition)**

H. Players are not allowed to touch the robots unless permission is given by the referee.

I. Upon removal or a robot from the playing area, it can only re-enter the game upon referee’s approval.



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| 2. | **STEAM Mission Game** |

**Summary**

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| Level | Primary School (7-12 years old) |
| Team | Individual |
| Robot | STEAM-focused Educational Robot Kit |
| Mission | 5 Missions |
| Robot Building | In advance |
| Game Method | Mission completion and record |

**Rules and Regulations :**

A. Use after school robot teaching aids that operate in infrared rays/IR method. Robot building and programming should be completed prior to the game (modification at the game site is unavailable).

B. Maximum size of robots are limited to **25.0cm×25.0cm×25.0cm. (※ Robot size will be examined before starting the competition)**

C. There are no limitations on robot motions, but it is prohibited to use equipment not included in the teaching aids officially recognized by the game.

D. Robot should be motioned by a remote control. It should be equipped with more than 2 wireless communication channels in infrared ray (IR) method.

E. Participants can install a device on robot arms and legs to move or push the object. The device should be manufactured using officially recognized robot teaching aids. Using recycling or other materials is prohibited.

F. The number of DC motor/servo-motor to be used is not limited, but modifying the motor will result in disqualification.

G. If it is necessary to have a laptop, individual participants should prepare it.

H. It is completely prohibited to jointly use the manufactured robot with other teams.

I. Participants bear the responsibility on damage and loss of robot incurred by their carelessness.

J. The maximum game time is 5 minutes.

K. At the call of the referee, 1 robot built by the called team should be located at the designated starting point in the game room.

L. In accordance with the referee’s directions and turn, pre-guidance, participation and robot checking procedures should be made to proceed to mission taking (Only 1 mission taking opportunity will be given and its point will be recorded as the final record).

M. The followings are considered to be the end of the game.

1) Robot safely arrives at the destination after accomplishing the mission (point calculation/recording)

2) Robot stops during the competition for more than 10 seconds.

3) Participants touch the robot physically.

4) During robot traveling, other game parts (mission objects, obstacle-Ping-Pong balls, Yogurt bottles, robot parts) pass the measuring instrument by the robot (point calculation, record 0 point).

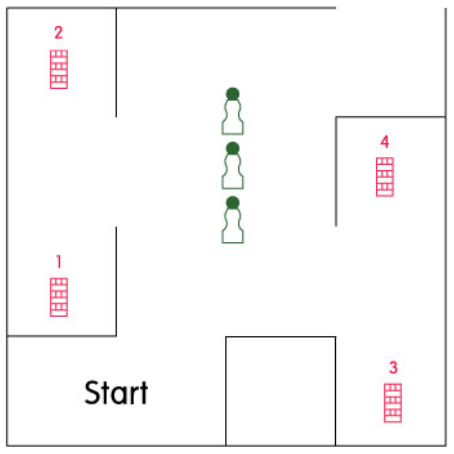
N. There are 5 types of missions (knocking down by solving questions, dropping,pushing in, pushing to get scores, etc.). There are also cases that participants should solve robot quizzes or the four fundamental arithmetic operations to fulfill the missions (for details, refer to 7. Game Rules and Details)

O. After fulfilling the missions, participants confirm the referee’s record and mission accomplishment by putting his/her signature.

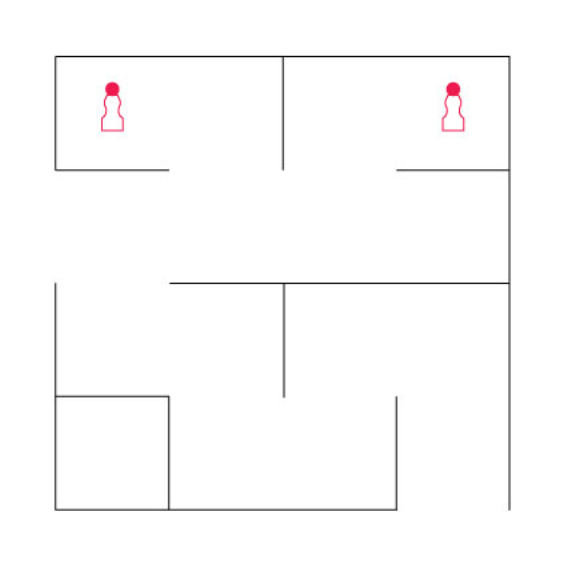
P. More details about STEAM mission, please refer to the attached file of STEAM mission introduction.

Mission:

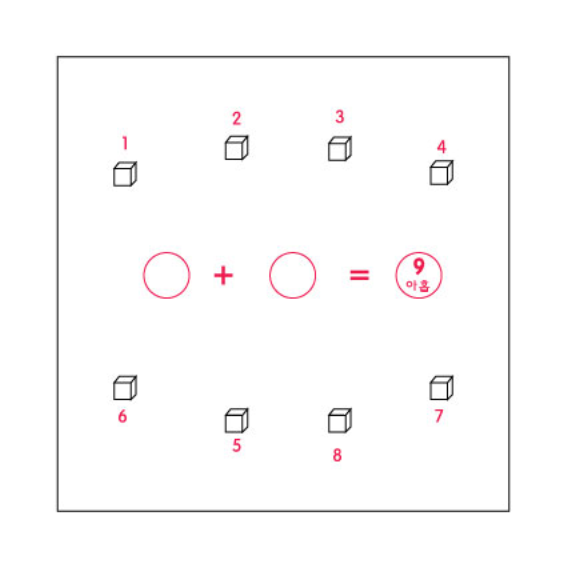
◆ Mission**1** Knocking Down Zenga



◆ Mission**2** Ping-Pong Ball Dropping on Yogurt Bottles



◆ Mission**3** Moving woodchips to complete a formula

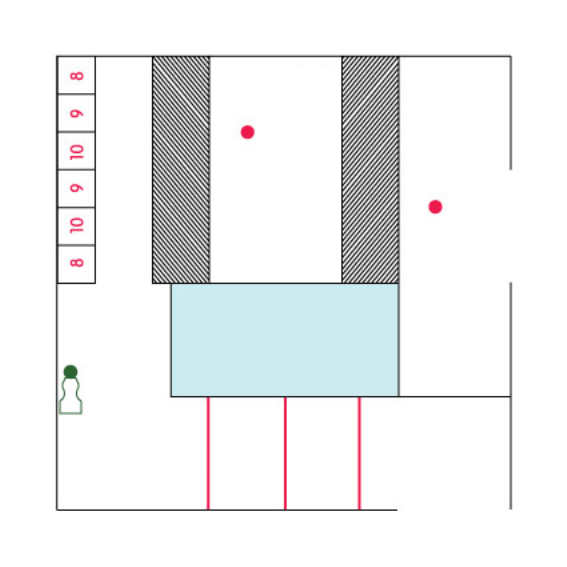


◆ Mission**4** Pushing balls to get scores

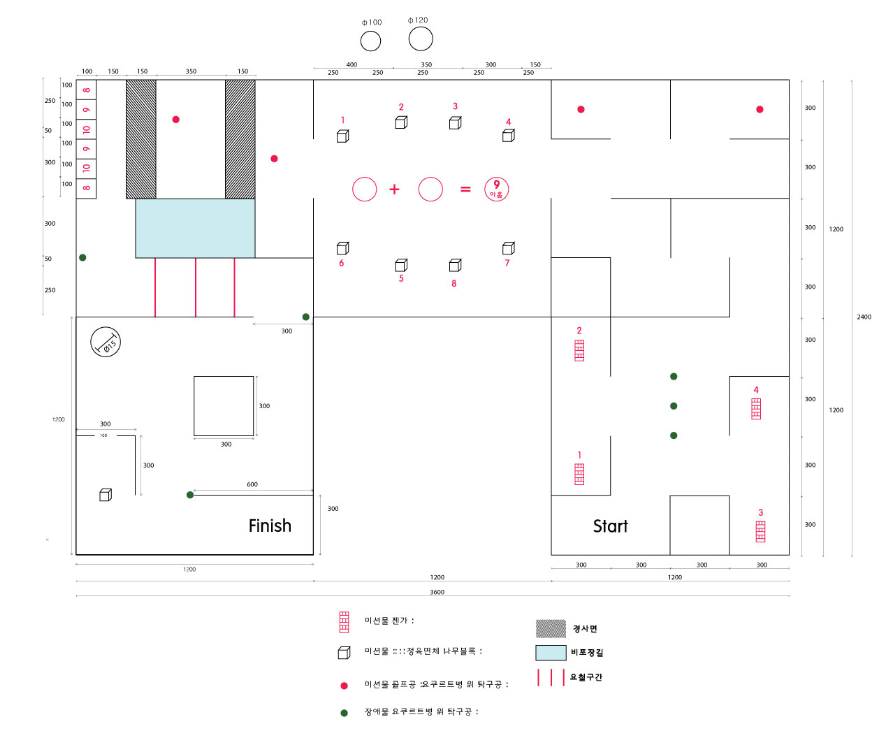
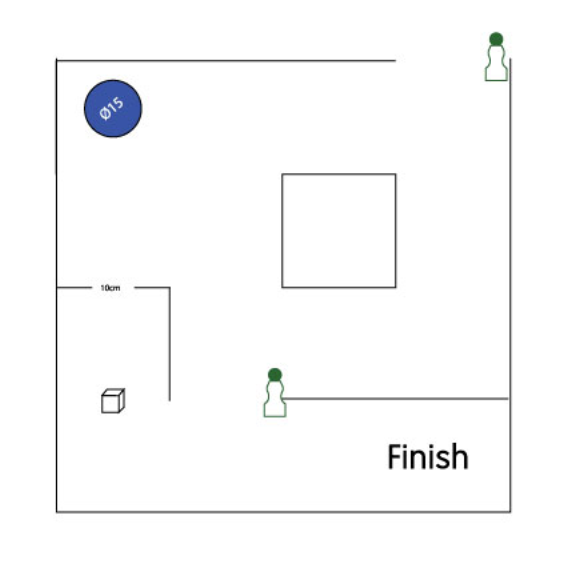
Declaration Strip

Slope

Unpaved Road



◆ Mission**5** Passing the woodchip between walls



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| 3. | **R-Sports Mission (individual - Golf)** |

**Summary**

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| Level | Primary School (7-12 years old) |
| Team | Individual |
| Robot | Educational Robot Kit |
| Mission | Similar to Golf game and send the ball in to hole cup. Par3, Par4, Par5. |
| Robot Building | In advance |
| Game Method | Mission completion and record |

**Rules and Regulations :**

A. Similar to real golf game, a robot shall hit the ball with a (golf) club to roll into the hall.

B. Electronic device use: IR Remote control

C. The participants who accomplished the mission with the best score (the lowest strokes) will be the winner.

D. The robot must not have any foreign part (including rubber band, black tapes and scotch tapes). If found guilty, the player would be IMMEDIATELY disqualified.

E. Players are allowed to touch the robots to change the degree and direction .

F. Maximum dimensions may not be exceeded. Robots are limited to 25cm (Width) \* 25cm (Length) \* 25cm (Height).

E. Robot should have motor to make a swing movement to hit the ball with golf club without moving the robot (by servo or DC).

F. The general rules will be the same as human golf games.

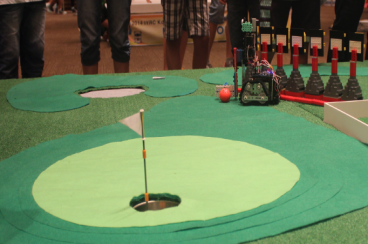
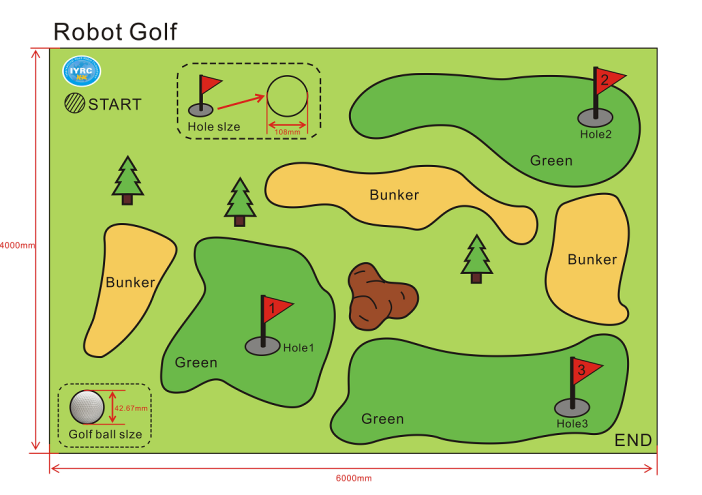
G. Every score over double par shall be regarded as double par.

H. Swing method and Robot move.

- When hitting the ball, participants should only use golf club attached to the robot. If participants hit or touch the ball with other parts, they will try again.

- Participants should only hit the ball with swing, instead of pushing or holding the ball.

- To send the robot to tee box (starting point) of each hall or the spot where ball is placed, participants can hold the robot.



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| 4. | **3vs3 Soccer Robot** |

**Summary**

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| Level | Primary School (7-12 years old) |
| Team | 3 participants per team and 3 robots per team |
| Robot | Educational Robot Kit |
| Mission | Soccer match using Remote Control |
| Robot Building | In advance |
| Game Method | Team tournament |

**Rules & Regulations:**

A. All the games will be based on “knock out” system. All the teams will be distributed in opposing pairs

by committee randomly.

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

choose between two roles variants: 1 defender + 2 strikers or 2 defenders + 1 striker.

Defenders:

* cannot leave his area (his half of the field), therefore cannot enter opponents area.
* allowed to enter own penalty area to protect the gate, but stay there not more than 10 seconds

Strikers:

* allowed to enter both own and opponent’s area
* does not allowed to enter own penalty area
* allowed to enter opponent’s penalty area to hit the gates, but not for more than 5 seconds.

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.

C. Prizes and trophies will be awarded to the Top 3 teams.

D. Time limit for each game shall be 5 minutes.

E. Extra time shall be played only in the event of a draw.

F. The ‘knock-out’ stage shall not consist of any points and the winner of the game shall proceed to the next round. Extra time shall be played in an event of a **DRAW**. The time limit for extra time shall be 1 minute.

G. 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. ‘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.

H. The robot must not have any foreign part (includes rubber band, black tapes and scotch tapes). If found guilty, the player would be **IMMEDIATELY** disqualified.

I. Maximum dimensions may not be exceeded. Robots are limited to **25cm (Width) \* 25cm (Length) \* 25cm (Height).**

J. There is no goal keeper and the defending robot can only stay within the penalty area for a maximum of 10 seconds.

K. A robot may not handle the ball for more than 5 seconds.

L. Players are not allowed to touch the robots unless permission is given by the referee.

M. Upon removal or a robot from the playing pitch, it can only re-enter the game upon referee’s approval.

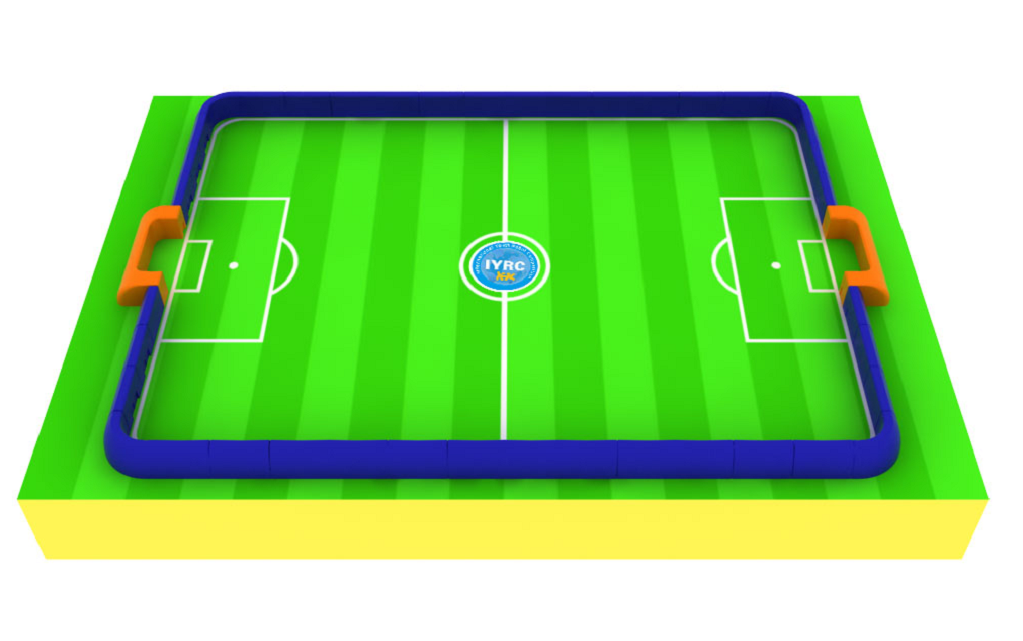
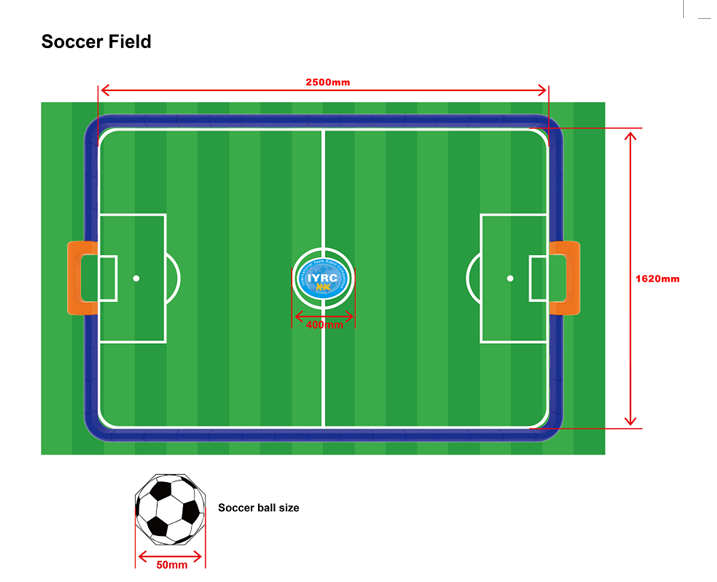
N. An offender will be issued a yellow card. Upon receiving 2 yellow card, the player will be removed.

O. The team that concedes the goal will restart the game from position pointed by referee.

P. For penalties ball will be placed on a certain point of the circle. Robot which making a shot should start its movement from the point, hit the ball and can not push the ball into the gate.

Q. In a time breaker Penalty after game take from one side only.

R. After penalty during normal play, penalty score or miss, restart the game



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| 5. | **Coding Mission** |

**Summary**

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| Level | Primary School (7-12 years old) // Middle School(13~15 years old) |
| Team | 1 participants for 1 team (1 robot per team) |
| Robot | Educational Robot Kit |
| Mission | To follow the line with programming with missions  Beginner Course for Primary School 7~12 years participants  Advanced Course for Primary School 13~ 15 years participants. |
| Robot Building | In advance (on spot programming) |
| Game Method | Time record + Mission completion |

**Rules and Regulations :**

A. Participants shall make a program(1~2 hours) on spot to follow the line and complete some missions.

B. The participants who accomplished the mission with the shortest time will be the winner.

C. Players are not allowed to touch the robots unless permission is given by the referee.

D. Maximum size of robots are limited to **25.0cm×25.0cm×25.0cm. (※ Robot size will be examined before starting the competition).**

E. Robot can have structure to push or grab the object.

F. Spare robot can be allowed after checked by referee.

G. No Remote controller, only the robot will be moved by itself with IR 5 sensors.

H. Not allowed special battery and motors, main board, foreign material, allowed 9V battery pack (In approved kit).

I. During programming (1 or 2 hours), participants has 2 times to test on the real play ground.

J. Game will be ended in case of the following:

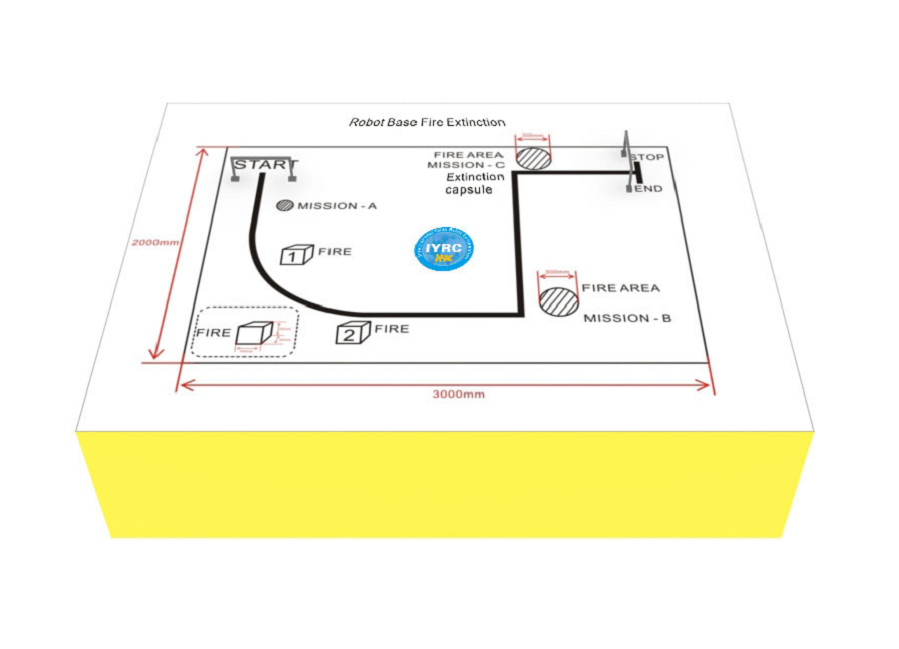
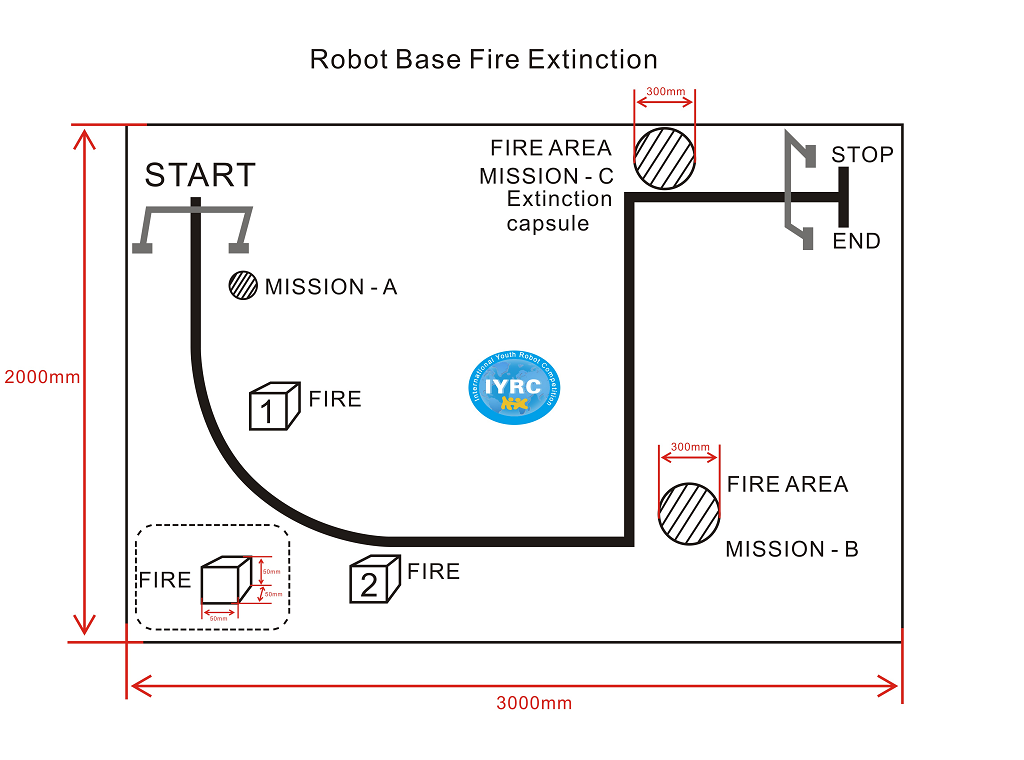
- After mission clearing, a robot is arrived at the end point safely (time record)

– A robot is stopped for more than 10 seconds

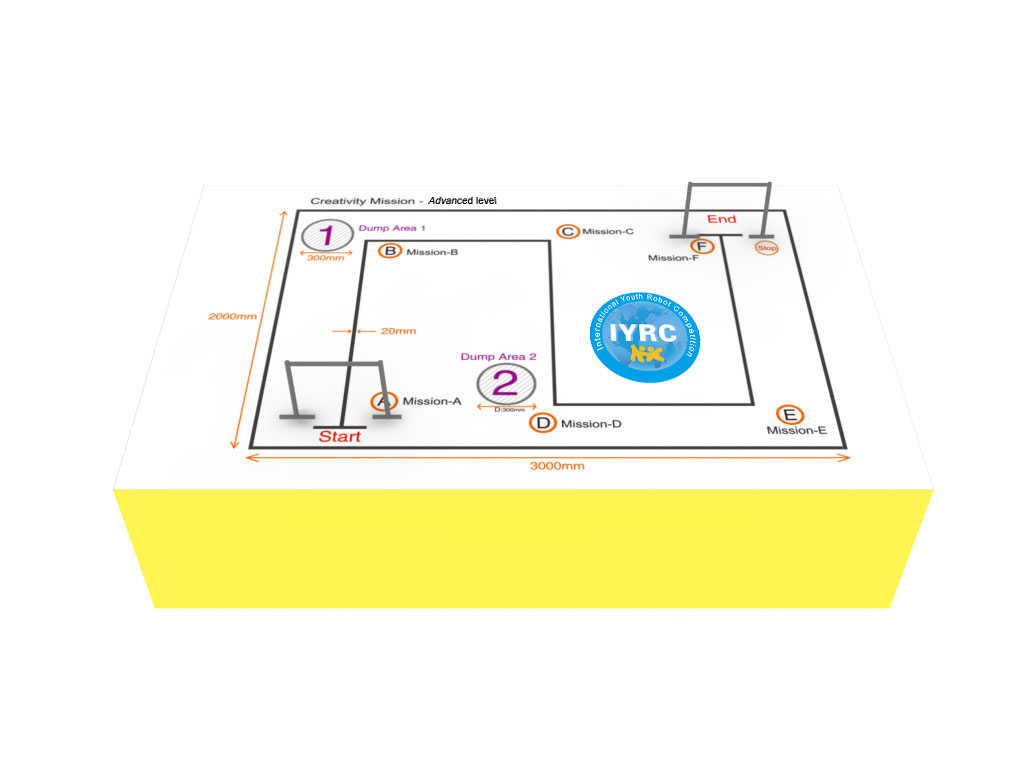
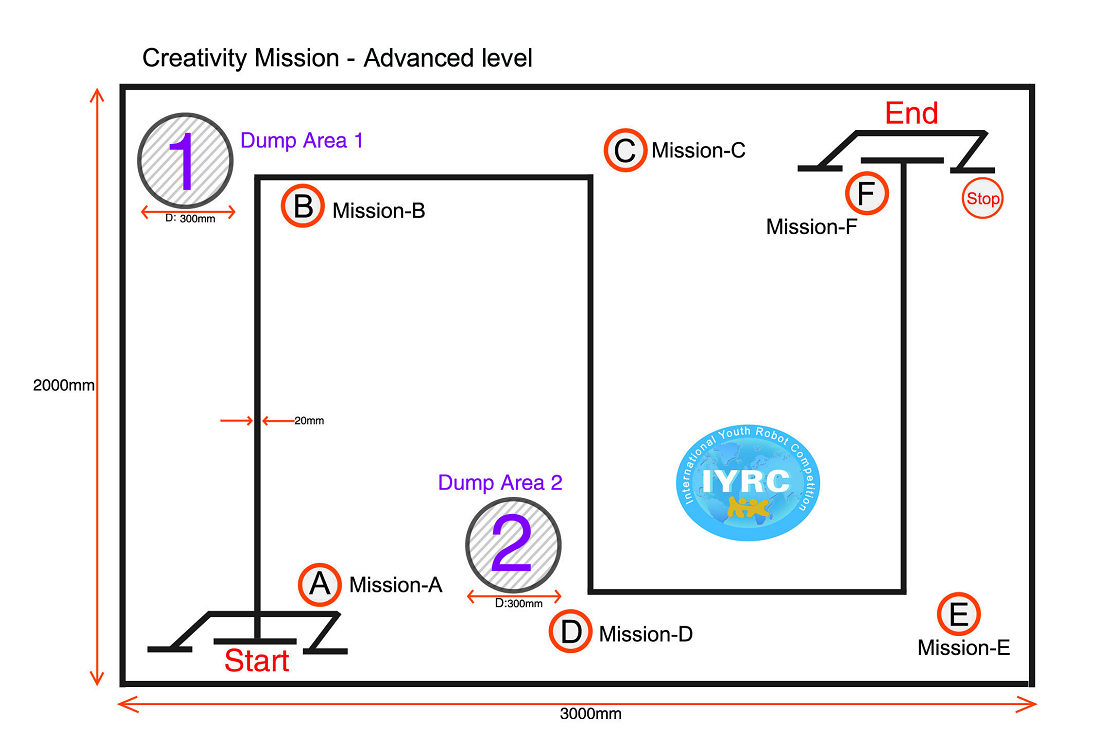
- A participant touches the robot without referees approval.

- A robot is moved outside of the playground.

**Beginner Course :**



**Advanced Course :**



Record Sheet

**Beginning Level:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time (seconds) | Time Rank | Time Point | Start Mission | Fire 1 | Fire 2 | Mission A | Mission B | End Mission | Total | Rank |
| 25 | 1 | 100 | 10 | 10 | 10 | 10 | 10 | 10 | 160 | 1 |
| 30 | 4 | 85 | 10 |  | 10 |  | 10 | 10 | 115 | 4 |
| 27 | 2 | 95 | 10 | 10 | 10 |  |  | 10 | 135 | 3 |
| 28 | 3 | 90 | 10 | 10 | 10 | 10 | 10 | 10 | 150 | 2 |
| 35 | 5 | 80 | 10 | 10 |  |  |  | 10 | 110 | 5 |

**Advanced Level:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time (seconds) | Time Rank | Time Point | Bottle Mission | Mission B | Mission D | End  Mission | Total | Rank |
| 25 | 1 | 100 | 30 | 10 | 10 | 10 | 170 | 1 |
| 30 | 4 | 85 | 20 |  | 10 | 10 | 125 | 4 |
| 27 | 2 | 95 | 25 | 10 | 10 |  | 140 | 2 |
| 28 | 3 | 90 | 20 | 10 | 10 | 10 | 140 | 2 |
| 35 | 5 | 80 | 15 | 10 | 10 |  | 115 | 5 |

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| 6. | **Creative Robot** |

**Summary**

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| Level | Primary School (7-12 years old) |
| Team | 1~5 participants for 1 team (1 robot per 1 team) |
| Robot | Educational Robot Kit |
| Mission | Create a robot expressing the given theme |
| Theme  Robot Building | **"IoT (Internet of Things)"**  In advance |
| Game Method | Presentation and demonstration |

**Rules and Regulations:**

A. Participants shall build a robot considering the given theme.

B. The theme is “IoT (Internet of Things)”

How that robot connected with internet can help human beings, Which functions it will have.

How the robot closed to our life with internet.

C. Participants should submit the robot manual and the related material such as photos and videos to the organizer.

D. Based on the manual, participants has to introduce their robots to the referee on the stage.

E. Score shall consist of Creativity, Uniqueness, Function, and Presentation skill.

