



[SUPPLEMENTARY RULES]

Construction Requirements: There are no restrictions on the materials used to construct the “device”, but **ready-made devices are not allowed**. An area is required on the “device” to hold objects.

Functions: The “device” is programmed on the spot to move to its destination and complete tasks through non-jumping or flying means, such as walking, rolling or crawling.

Dimensions: There are no restrictions on the weight of the “device”. The size of the “device” should not exceed $25cm \times 25cm \times 40cm$.

Power Supply Restriction: The “device” must use DC of **24V** or below.

Tournament Structure:

The game is divided into Junior Secondary Group and Senior Secondary Group; the schedule is divided into preliminary, semi-finals and finals rounds.

- **Preliminary Round:** The participating teams are divided into groups by drawing lots, with 2 teams from each group competing against each other. On the day of the competition, the teams will be required to program their own “device”, according to the pitch conditions, so as to allow the “device” to **operate fully automatically**, and move from the “Device Zone” (hereafter referred to as “starting point”) to the arrival marker (hereafter referred to as “destination”), which is of the same colour as the starting point, and also completing specified tasks while moving along the path.

The first team to complete the mission and get the “device” to the destination is then promoted. Advancing to the next round of the tournament, obstacles setting on the pitch may vary. If neither team can complete the mission and reach the destination within the time limit, neither team will advance. If there are either less or more than 16 teams from the preliminary rounds, a separate selection will take place.

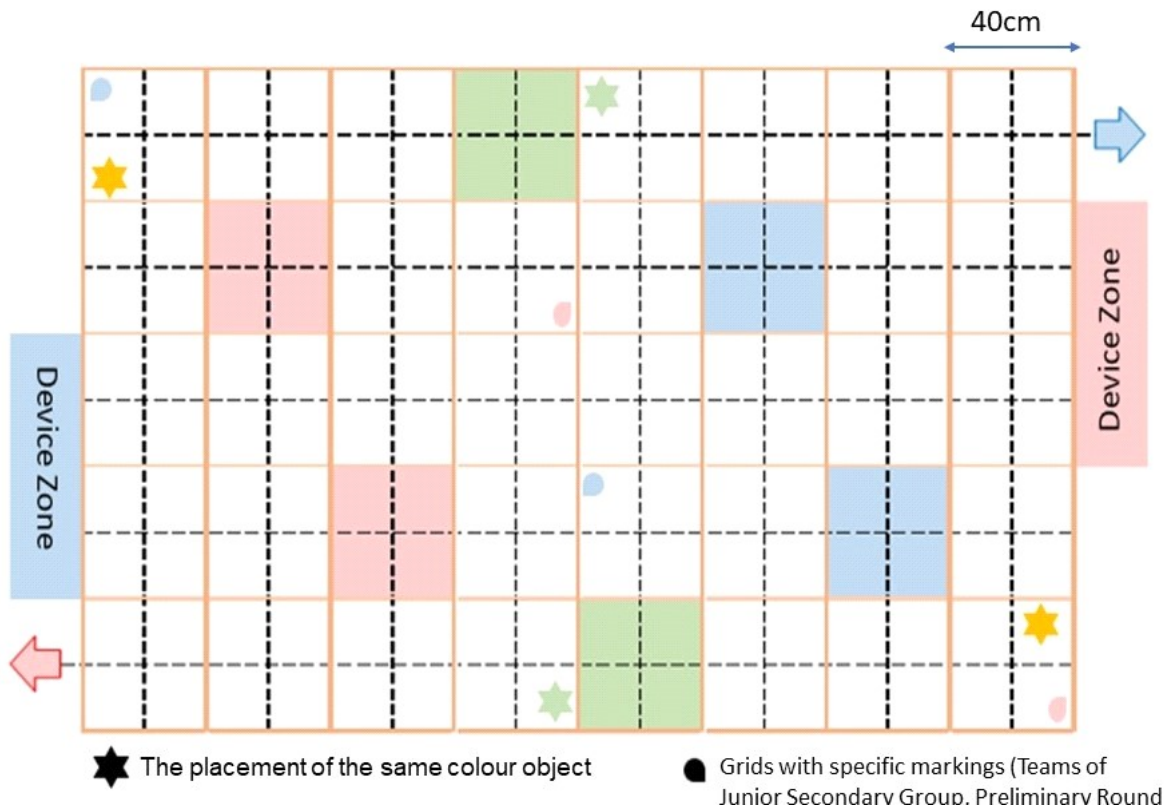
- **Semi-finals & Finals Round:** The 16 teams qualified for the Semi-finals are then divided into groups by drawing lots, with 2 teams from each group competing elimination. Each team of Junior Secondary Group will be allocated a fixed number of “Direction Cards” and each Senior Secondary team will be allocated a fixed number of “Direction Cards” and a “Task List”.

The Junior Secondary Group team advancing is determined as the first one to complete the task and get the “device” to the destination; while the Senior Secondary Group team advancing is determined by the number of points scored by the “devices” that reach the destination within the time limit, with the highest scoring team being promoted. Whether it is the junior or the senior secondary teams, each team has to design a path from the starting point to the destination using the “Direction Cards” they were given, and then program their own “device” to move according to the designed path on the spot and complete the task.



Pitch:

A $200\text{cm} \times 320\text{cm}$ rectangle field is divided into several $40\text{cm} \times 40\text{cm}$ grids using colour lines, with black crosses in each grid to support the dotted lines. Inside the field, different colours and symbols identify a particular square and mission location. Outside the field, there are two coloured “device zones” and “arrival marker” to indicate the destination. The layout of the field can be seen in the attached diagram.



Competition Method:

Preliminary Round:

The organizer will announce the location of obstacles on site at the competition day, allowing the participating teams to program their “devices” immediately and compete in the order of lots drawn. The location of obstacles in the field may differ for each team, so it is recommended to pay attention to the on-site announcement on the day of the competition.

- **Junior Secondary Group:** Teams have 5 minutes to place their programmed “device” in the “Device Zone”. After inputting the start command once, the “device” will **move automatically** from the “Device Zone” to its destination. The moving path of the “device” can be programmed freely by the participating teams. However, in the process of moving to the destination, the “device” must pass through the certain grids with specific markings and bypass the obstacles. The team that finishes the task the fastest will be promoted to the next round of the Competition.



- **Senior Secondary Group:** Teams have 6 minutes to place their programmed “devices” in the “Device Zone”. After inputting the start command once, the “device” will **move automatically** from the “Device Zone” to its destination. The moving path of the “device” can be programmed freely by the participating teams. At the same time, the “device” must also carry and transport 3 objects of specified colours. Before the “device” reaches its destination, it must unload the objects into the same colour grid (e.g. green sandbags in the green grid) and bypass the obstacles. The fastest team to complete the task will be promoted to the next round of the Competition.

Semi-finals & Finals Round:

Junior Secondary Group:

- Observe the location of the obstacles on the field. Each team can use the 22 “Direction Cards” (14 “Forward One Grid”, 4 “Left One Grid” and 4 “Right One Grid”) assigned to them to design a path from the starting point to the destination (**Note: 3 of the “Direction Cards” must be used according to the sequential order of the numbers on the cards**). Within the **15-minute time limit**, the team need to program their path and stick the “Direction Cards” on the solid-line grid of the field. Please note that each “Direction Card” can only be used once and the determined path cannot be changed.
- After the team has placed the “device” at the starting point and input the start command once, the “device” loaded with 2 designated objects must move within the **8-minute time limit** inside the solid-line grid where the Direction Card is attached, to unload the designated objects to the designated place and reach the destination. If the “device” deviates from the pre-set path or is in need of repair, the team must restart from the starting point after reassembling the “device”, and any tasks completed before reassembling will be considered incomplete.

Senior Secondary Group:

- Observe the location of the obstacles on the field. Each team can use the 25 “Direction Cards” (13 “Forward One Grid”, 6 “Left One Grid” and 6 “Right One Grid”) assigned to them and a Task List to design a path from the starting point to the destination. Within the **15-minute time limit**, the team need to program their path and stick the Direction Cards on the solid-line grid of the field. Please note that each Direction Card can only be used once and the determined path cannot be changed.
- After the team has placed the “device” at the starting point and input the start command once, the “device” loaded with **3 designated objects (one is a mandatory task and the other two are optional tasks)** must move within the **10-minute time limit** inside the solid-line grid where the Direction Card is attached. The mandatory **task to be completed** must include transport and unloading of one of the designated objects from the “device” to any grid identical in colour to that of the “device” starting point. If the “device” deviates from the pre-set path or is in need of repair, the team must restart from the starting point after reassembling the “device”, and any tasks completed before reassembling will be considered incomplete.



- The first team to reach the destination and declare they have finished will receive 100 points; the second team to reach the destination and declare they have finished will receive 70 points. In addition, when the “device” is moving towards its destination, the team is free to choose (or abort) completing one or more of the tasks on the Task List. Points will be awarded for each completed task, but the points will only be counted once if the same task is completed repeatedly. The team with the highest total score will win the game. In case of a tie, the first team that declare they have finished will win the game.

Types of Objects to be Delivered: Sandbag, about $4cm \times 4cm \times 4cm$, weighing 80-100g.



No.	Optional Tasks available for completion by the Senior Secondary Group	Score
1.	Use fewer than 8 (maximum 7) “Forward one grid” Directional Cards.	+10
2.	Go through 1 grid with a different colour from your side's “Device Zone” (non-white colour).	+5
3.	Go through 2 grids with a different colour from your side's “Device Zone” (non-white colour).	+15
4.	Go through 3 grids with a different colour from your side's “Device Zone” (non-white colour).	+30
5.	Move or push a green object on the field into the green grid.	+10
6.	Transport an object from your “device” to the opponent's colour grid.	+20
7.	Transport an object from your “device” to the green grid.	+15
8.	Move or push an orange object on the field into the opponent's “Device Zone”.	+40

Directional Cards: Three types in total

 Right One Grid	 Left One Grid	 Forward One Grid
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2025年度通訊博物館電子裝置製作比賽

Museu das Comunicações – Concurso de Construção de Dispositivos Electrónicos, 2025
Communications Museum - Electronic Device Construction Competition, 2025

Timeout and Maintenance:

There will be no time-out for the competition. Repair or re-programming is allowed within the competition time limit, but the “device” can only be taken out for repair after signaling to the referee and obtaining the referee's approval and any tasks and objects moved/completed will be reset. Competition time will not be paused during the repair period, and the repaired “device” must be placed back at the starting point to be restarted.

Violation of Rules:

Teams may be disqualified, depending on the severity of violations, as regulated below:

1. Intentionally causing damage to the pitch or objects during the competition;
2. Touching the “device” during the competition without pre-approval;
3. Using “device” that violates specification as determined by the supplementary rules;
4. Deliberately obstructing other teams or their “devices” from competing;
5. Using “device” not previously inspected by the organizer;
6. Using an unqualified battery that not previously inspected by the organizer;
7. Team members entering the restricted pitch area during competition without permission;
8. Disobeying the instruction of the staff, interfering or stalling the competition;
9. Using insults, abusive words or actions directly to other participating teams;
10. Violation of the principles of fair play.

Others:

1. All teams should pay attention to electrical safety, the organizer shall not provide power supply;
2. Maintenance tools are the sole responsibility of the participating teams, the organizer shall not provide them;
3. Participants are allowed to use the test pitch at the museum during opening hours prior to the competition;
4. Should any dispute arise, the decisions of the organizer shall be final;
5. Final decisions shall be made by organizer should any unexpected situations happen during the competition;
6. In case of any discrepancy in the different language versions of the regulation, the Chinese version shall prevail.