

# Ramp Rush

## Eco Rescue Rulebook



# Ramp Rush Rules



## 1. Objective:

Ocean pollution, primarily caused by plastic waste and discarded materials, seriously threatens marine life and ecosystems. The challenge is to design a robot that can help clean up polluted water bodies. To achieve this, the robot must navigate from a designated starting area, and cross a ramp to reach a simulated polluted water zone filled with waste, such as plastic items and cans. The robot will then collect the waste and transport it back to a recycling zone, demonstrating the importance of cleaning up our oceans and promoting recycling to protect marine environments.

## 2. Team Composition:

-Team Size : **3 : 5** people guided by a Coach.

-Teams will be divided into two age categories:

-Junior: Ages **7- 12** years (**LEGO KITS**).

-Senior: Ages **13 - 18** years (**NON-LEGO KITS**).

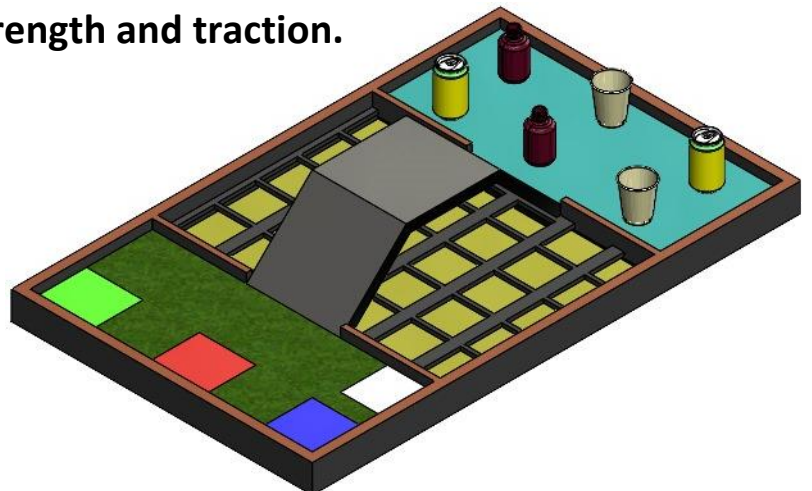
## 3. The Robot:

1. Must be built using **LEGO kits or NON-LEGO**.
2. Control is **manual** (Any type of controller is allowed).
3. Maximum size: **25cm x 25cm** base, unlimited height.
4. Maximum weight: **2 kg**.

### 3. Playing Field

#### ❖ Specifications & Dimensions:




1. **Arena Dimensions (250cm x 150cm).**
2. **Starting Area (25cm x 25cm white square):**
  - This is where the robots will begin their journey.
3. **Ramp Area (120cm x 50cm):**
  - A ramp with a **30-degree** incline that robots must cross to reach the polluted water area. This adds an extra challenge for navigation.
4. **Polluted Water zone (65cm x 150cm):**
  - This section will simulate a polluted water body. Use baby blue banner to represent water and scatter small waste pieces (plastic, paper, metal) to simulate pollution.
5. **Recycling Zone (65cm x 150cm):**
  - This is where the robots will deposit the collected waste. There are marked areas representing various types of waste (plastic (**Red**), paper (**Blue**), metal (**Green**)) each of them will be **30cm x 30cm**.
6. **Ramp Safety:**
  - A safety net will be positioned beneath the ramp to protect the robot in case of a fall. If the robot falls off the ramp, it must be relaunched from the starting position, and the collected waste within the robot at the time of the fall will be forfeited.
7. **Waste Items:**
  - **6** waste objects **2** of each (small plastic bottles, metal cans, paper cups) representing pollution.
8. **Material & Surface:**
  - The flat areas will be made from banner material, while the ramp will be built from wood for strength and traction.



## 4. Game Specifications:

- **Time Limit:** Each team has **5 minutes** to complete the task.
- **Task Completion:**
  - Robots Start from the starting area, they must climb the **45-degree** ramp, retrieve as many waste items as possible from the polluted area, and return them to the Recycling Zone.
  - Only waste items placed within the Recycling Zone will count.
- **Waste Handling:**
  - Waste must be moved safely, dropped items outside the Recycling Zone will not be counted.
- **Robot Control:**
  - Teams cannot physically intervene with the robot during the run, except to control it remotely.

## 5. Scoring System:

| Waste Type | Metal Can   | Paper Cup  | Plastic Bottle  |
|------------|---|--|---|
| Image      |  |  |  |
| Points     | <b>2 pts</b>  | <b>3 pts</b>   | <b>5 pts</b>  |

- **Time:** The time taken to complete the task, with faster times earning higher scores.
- **Waste Collected:** Number of waste items successfully returned to the Recycling Zone.
- If the final score of two teams or more is **the same**, the team **with less time** will be considered the winner.

## 6. Judging Criteria

1. **Speed:** Time to complete the task.
2. **Waste Collected:** Number of waste items successfully collected.
3. **Robot Design:** Creative and functional designs for navigating the arena and retrieving waste.

## 7. Penalties:

1. **Time Penalties:** For physically touching the robot or dropping waste items outside the Recycling Zone.
2. **Disqualification:** For violating size/weight limits or damaging the arena.

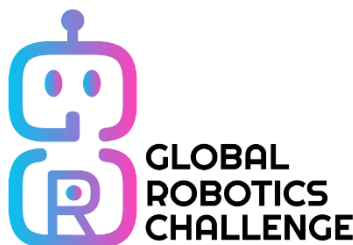
## 8. Safety Regulations:

Ensure that all robots are safe to operate and do not pose a risk to participants or the arena.

## Note:

To download the playground ready for printing click this link:

<https://drive.google.com/drive/folders/1AVgkTYsisSLfkFITkhCkkZpljgW6cgk1?usp=sharing>



**Good Luck**