



# Kre8ivity League-Zonal Round PS

## Introduction

Welcome to the Kre8ivity League!

In this exhilarating competition, the stage is set to show your Creativity through your Robot to demonstrate their prowess in the intricate art of pick and place. The task at hand is deceptively simple yet profoundly challenging - to design, assemble, and program robots that can skillfully identify, grasp, and relocate objects with precision and efficiency.

**Note:** Lego kits are not allowed in the competition.

## Problem statement for Grades 6-8

A Team must assemble a wired/wireless robot that is capable of performing the operation of picking up objects and placing them in target zones to complete the task.

# Robot Specifications

- The robot's dimensions should be less than or equal to 30 cm X 30 cm X 30 cm (LxBxH) failing which the team will be disqualified from the competition (this excludes the dimension of the gripper but includes wheels). The bot can, however, extend its size once the run starts. An error of ( $\pm 5\%$ ) is permitted.
- The bot must be controlled with a wired/wireless remote.
- Teams can use wired/wireless control mechanisms.
- The dimensions of the remote are not included in the size constraint of the bot.
- The participants are allowed to use ready-made gear assemblies.
- Failing to meet any of the above specifications will lead to immediate disqualification.
- AC power supply will not be provided and cannot be used in the competition.
- Participants may use MechanzO Kit or a Similar kit for the mechanical assembly.

# Rules

- The maximum number of students per team is 3.
- The potential difference between any two points of ROBOT should not exceed 12V.
- Use of pneumatics and hydraulics is not allowed.
- The final built ROBOT in the arena needs an additional power source, which participants must have.
- The motors should be DC motors of a maximum of 150 RPM.
- Electric tools are not allowed in this competition.
- There should be several mechanical components in the ROBOT assembly.
- Negative marking would be applied for dragging and displacement.
- Teachers and Mentors are not allowed in Arena.
- To participate at the Zonal level, participants must adhere to all rules.
- The robot should weigh no more than 3kg.
- Dimension of the Robot: Height = 30 cm, Width = 30 cm, Length= 30 cm.
- In case of any discrepancy in Scoring or during the competition the final decision will be of the Judges.
- **The rules of this competition are subject to modification by the organizer, so it is advisable to regularly check the website for any updates.**

# Scoring and Penalties

The general scoring is as follows:

S.No	Task Completed	Points Awarded
1	<b>Time Score</b> - Completed within 6 minutes - Completed within 7 minutes - Completed within 8 minutes	+10 points +5 points 0 points
2	<b>Object Placement Accuracy</b> - Perfect placement - Near-perfect placement - Slight deviation from target (Some parts touches the target) - Significant deviation from target (No part of robot touches the target)	+10 points +5 points +2 points 0 points
3	<b>Design and Innovation</b> - Excellent design and innovation - Good design but lacks innovation - Basic design with no innovation	+5 points +2 points 0 points
4	<b>Collision/Touches Wrong Area</b> - Robot touches the Restricted Area -3 points - Two Robots collide with each other -5 points - A Robot strikes the other robot by mistake or intentionally	-3 points -5 points -5 points for the team that strikes the other robot
5	<b>Object Retrieval and Dropped Objects</b> - Smooth retrieval without errors - Requires minor adjustments - Drops the object multiple times	+ 5 points 0 points -1 per drop
6	<b>Miscellaneous</b>	Points assigned based on judges' discretion

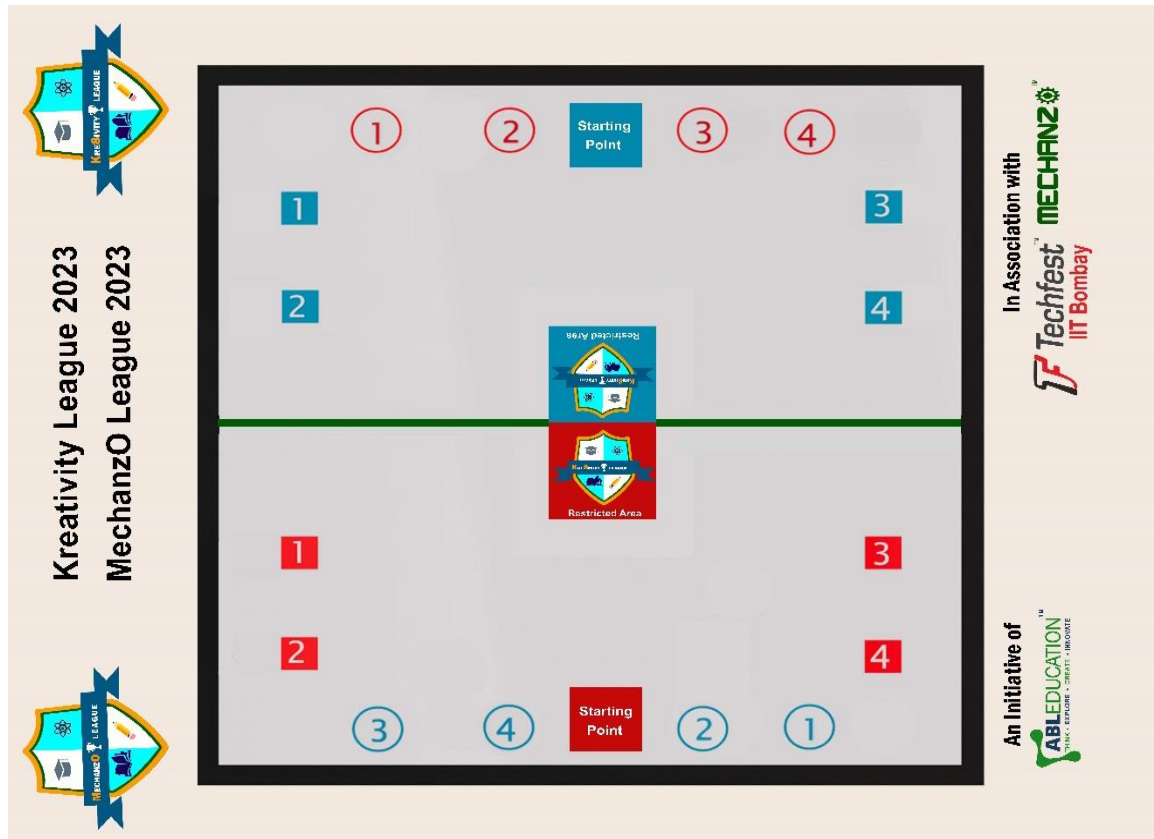
# Arena Specifications

- The outer dimensions of the arena are 166 cm X 170 cm (LxB).
- The object dimensions are 6.35 cm x 6.35 cm x 6.35 cm (LxBxH).
- Drop point dimensions are 8 cm x 8 cm (LxB).
- Object weight is less than 100 grams.
- Checkpoints are not available.
- Objects are indicated by squares with numbers 1-4.
- Drop spots are indicated by circles with numbers 1-4.

Note: The above dimensions may vary during the competition

# ARENA

Top View



Note: The above pictures are just for representation and it does not resemble the arena.

# Gameplay

- This game can only be played between two teams at once.
- Both Robots are initially placed at starting point.
- Both robots will start at the same time when judge says.
- Both robots will be assigned one color either Red or Blue.
- The Robots must avoid touching the Restricted Area while moving.
- In order to win, the robot must collect the precise color objects and carry them to the allocated drop location of the same color.
- Both teams must finish in the least amount of time feasible while not making fouls.