TAMILNADU ROBOTICS LEAGUE

SOUTH INDIA'S BIGGEST ROBOTICS COMPETITION

SEASON - 2

Propeller Technologies

AI | ROBOTICS | DRONES | 3D PRINT

STEM.ORG REVIEWED #46788206 | STEM.ORG ACCREDITED #39786611 | STEM.ORG CERTIFIED #46766422

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EVENTS AND REGISTRATION

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Events

1. **Robotics Junior**: To solve the arena based on the problem statement
2. **Robotics Senior**: To solve the arena based on the problem statement
3. **Makeathon**: To design the solution for any social problem

Registration

- **The registration fee per student per event is Rs. 499/-**
- **You can contact the below mentioned mobile number to initiate the registration process 7540040071 / 79**
- **Event venue - National College, Trichy**
- **Date - October - 14 - 2023**

PRIZES

Robotics Junior

- Winner
- First Runner up
- Second Runner Up
- Best Robot Design
- Best Robotics Controller
- Best Team

Robotics Senior

- Winner
- First Runner up
- Second Runner Up
- Best Robot Design
- Best Robotics Controller
- Best Team

Makeathon

- Winner - **Cash Prize**
- First Runner Up
- Second Runner Up
- Best Novel Idea

Special Prizes:

- Overall Championship
- Empowering Excellence: School that motivates maximum students to participate in competitions to get exposure

TAMILNADU ROBOTICS LEAGUE - 2K23

South India's Biggest Robotics Competition

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Junior Level Problem Statement

Theme

The theme for the Tamil Nadu Robotics League 2023 is "Simple Machines." The entire arena will consist of tasks based on simple machines such as the Wheel and Axle, Levers, Wedge, and Pulley systems that we have studied in our curriculum.

Who can Participate?

Grade 5, 6 and 7

Team Members

A team can have a minimum of 3 and maximum of 4 members who will be playing following roles

- 1st Member - Robot Controller (who will be operating the Bot)
- 2nd Member - Operator (who will be in the assembly line build a circuit and make the simple machine move)
- 3rd and 4th Member - Task Force (These individuals are responsible for calculating certain values using simple equations and assisting the runner in choosing the appropriate block, enabling the robot to complete the task successfully).

Robot Specification:

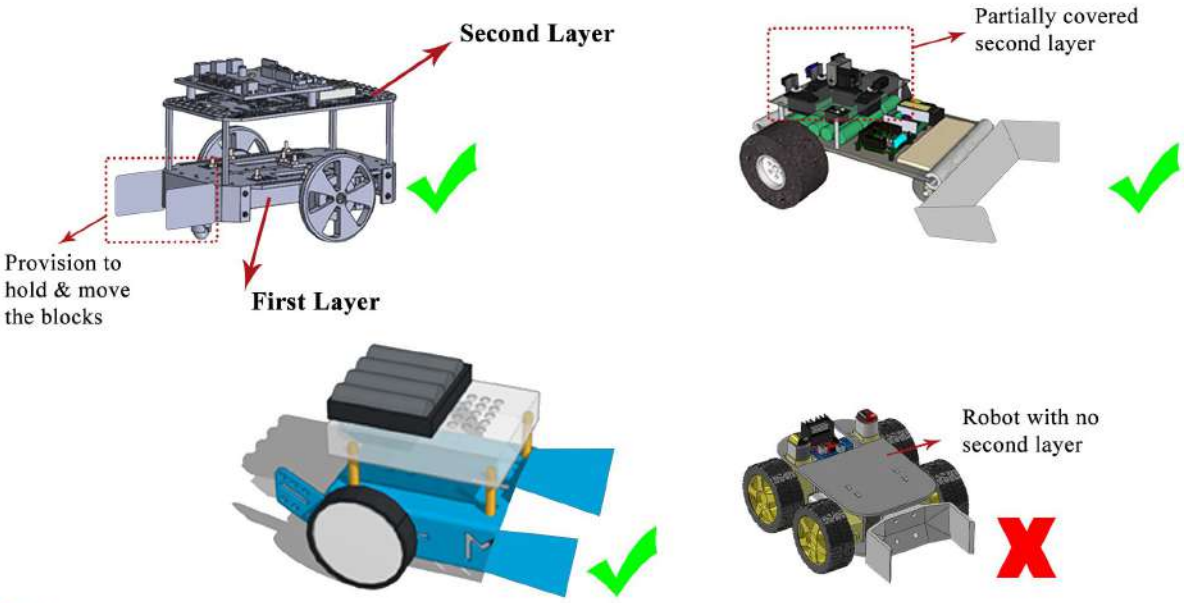
The Junior team will be building a wired robot with the following specifications that can carry out a specific task

Length	Breadth	Height
10 Inch (Maximum)	10 Inch (Maximum)	6 Inch (Maximum)

Junior Level Problem Statement

Reference Design for the Robot:

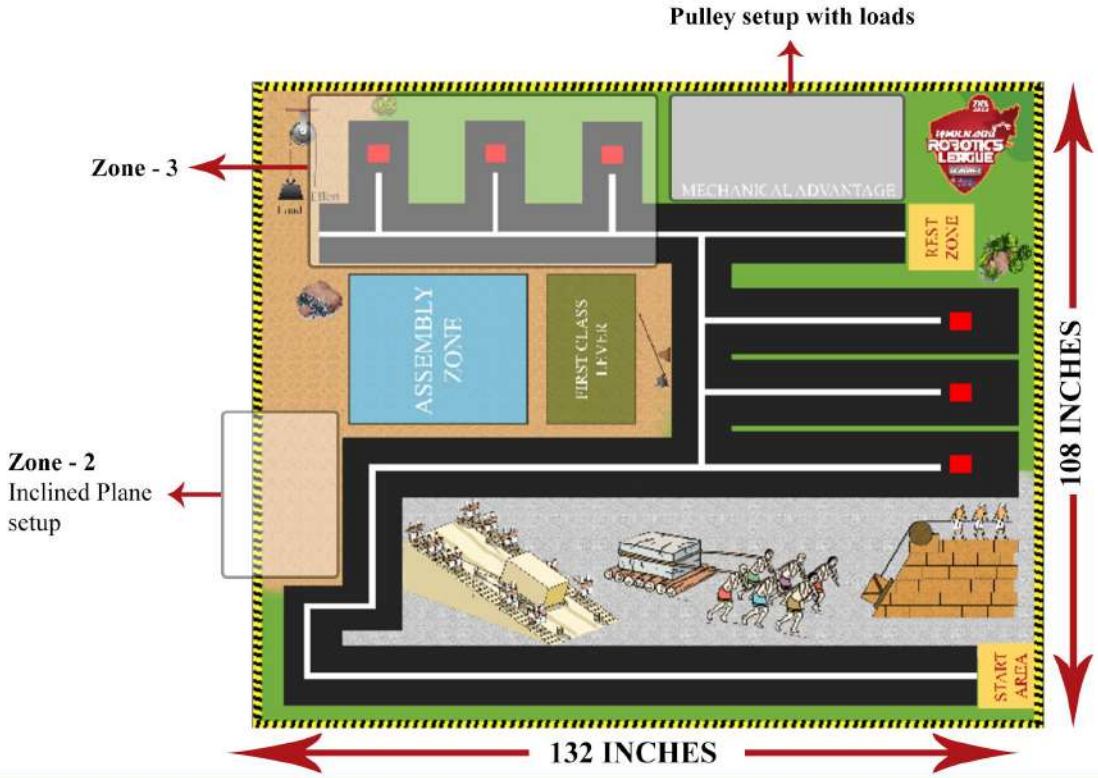
It is mandatory that the robot designed should be two-storied or two-layered and a provision to move the blocks



Note:

The second layer of the robot can either fully cover the first layer or partially cover it

Arena Information



Junior Level Problem Statement

Actual Task Description

1.The race will begin in the start area mentioned in the arena

2.Once the robot reaches zone 2, there will be an inclined plane setup. The robot must move on the inclined plane and push a trolley down, which moves with the help of wheels and axles. If the robot successfully completes the task in zone 2, it earns a point.

3.In the assembly zone, the operator will take the props present in the trolley and start assembling the first-class lever setup. If the setup is built completely, the robot earns a point.

4.The referee will place a block of specific weight at one end of the first-class lever. The team members of the Task Force will then decide and guide which block needs to be taken and placed at the other end of the first-class lever to achieve balance and they will communicate the robot operator to take the respective block and move near the First class lever. Once the lever is balanced successfully, the robot earns a point.

4.On completing the task in zone 2, the robot can move to zone 3, where a pulley arrangement will be kept, and a load of a specific weight will be placed on one side of the pulley. Based on the number of pulley arrangements, the team members have to calculate how many grams of weight should be placed on the effort side so that the load is lifted up.

5.Once the team members have made their decision, they can inform the Robot Operator, who will then move the desired block into the Mechanical Advantage zone and move the robot to wait in the rest zone. Then, the operator has to place the block on the effort end of the pulley. Once the load is lifted successfully, the robot earns a point.

Note:

The exact demo video of how to solve the arena using the robot will be released to all registered participants 15 days before the event. Meanwhile, students can construct the robot and practice navigating them

General Rules:

- The duration of the run will be 6 minutes and there won't be any trial time provided for the run on the event day.
- The robot should be as per the given specifications.
- A score will be given only if the props are placed completely inside the specific area, not partially.
- Students from different grades can also form a team.
- Each member of the team must come from the same institution.
- You can use any materials to build your robot.

WHAT IS TAMIL NADU ROBOTICS LEAGUE

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The **Tamil Nadu Robotics League** (TRL) is South India's Biggest Robotics Competition that aims to celebrate Science, Technology, Engineering and Mathematics (STEM) and make innovation an area of passion for the young minds of the developing world. It intends to capture the attention of young innovators by giving them problems and challenges that not only stretch their imagination but also creates soulutions to burning issues.

With our inveterate vision of **"Together we create makers of the world" Propeller Technologies R&D Pvt Ltd** is missioned to intersperse a myriad of makers across the world by imparting real-world connectivity in Tech education and providing the best **STEM** education imaginable along with STEM kits, Robotics competitions and several other learning resources.

100+ SCHOOLS

250+ ROBOTS

3000+ STUDENTS

THEME FOR TRL - SEASON II

"SIMPLE MACHINES"

We invite students to build bots and navigate through an arena designed using the concepts of simple machines that they have learned in their primary classes. This will help students gain a better understanding of the applications of simple machines in real life and solidify their STEM foundation

GLIMPSE OF TRL -2K22