# STEMROBO STEAM INNOVATION LEAGUE 2026

# INNOKIT MAKERLEAGUE

## KIT NAME: TAPPY BOT (SCREEN-FREE ROBOT KIT)

## IMPORTANT NOTE – KIT PURCHASE

- Participation in Category 1 competitions requires teams to purchase the official Tappy Bot (Screen-Free Robot Kit).
- To purchase the kit or for any related queries, kindly contact:
- Email: contact@steaminnovationleague.com
- Toll-Free Number: 1800-120-500-400


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## 1. ROBO SOCCER CHALLENGE GRADE: 1 TO GRADE 3

**Overview**

The Robo Soccer Challenge is a fast-paced, fun, and highly engaging coding-based sports competition.

Using the Screen-Free Robot Kit, two teams compete against each other on a special soccer mat.

Robots are programmed using coding cards, without any laptop, mobile, or external device.

The objective is simple:

Score as many goals as possible within 3 minutes while maintaining proper control, accuracy, and teamwork.

## GAMEPLAY RULES (DETAILED & CLEAR)

**Match Duration**

- Each match lasts 3 minutes only.
- A referee will start and stop the match using a whistle.

Number of Teams

- Two teams play on the same soccer mat at the same time.

Robot Programming

- Teams must use Screen-Free Robot coding cards only.
- No external devices, sensors, remotes, or coding tools are allowed.

Scoring Rules

- Each goal scored = 10 points
- If the robot:
- Moves outside the mat, OR
- Touches the end line –5 points penalty

Physical Interaction Rules

- Direct physical contact with the opponent's robot is strictly prohibited.
- If any team physically touches the opponent's robot ☒ –5 points penalty

Winning Condition

- The team with the highest total score after 3 minutes is declared the winner.

## GAMEPLAY RULES (DETAILED & CLEAR)

UDGING CRITERIA (30 MARKS TOTAL)

| Criterion | Description | Marks |
|---|---|---|
| Number of Goals Scored | Ability to score during the match | 10 |
| Accuracy & Robot Control | Smooth movement, correct card use, fewer penalties | 10 |
| Team Coordination & Strategy | Role division, planning, teamwork, and gameplay strategy | 10 |

## 2. BEST RANGOLI ART CHALLENGE

**Overview**

The Best Rangoli Art Challenge brings together Art + Coding + Mathematics.
Participants use the Screen-Free Robot Kit to create Rangoli patterns, combining creativity with geometric coding.
Students use coding cards to draw shapes such as:

- Circles
- Squares
- Hexagons
- Right angles
- Straight lines
- Custom combinations

The aim is to design a beautiful, accurate, and well-explained Rangoli pattern on a provided A3 sheet.

## TASK RULES (COMPLETE & CLARIFIED)

**Time Limit**

- Each team gets 5 minutes to complete their design.

**Robot Usage**

- The robot must be programmed only using coding cards.
- No digital screens, apps, laptops, or external accessories allowed.

**Materials Allowed**

**Teams must bring:**

- Their own Screen-Free Robot
- Color pens/markers

**Organizers will provide:**

- One A3-size white sheet per team

**Robot Movement Rules**

- Teams may lift, reposition, and place the robot anywhere on the sheet.

This allows for:

- Multi-shape patterns
- Geometric accuracy
- Complex, artistic Rangoli designs

**Allowed Resources**

- Only Screen-Free Robot Kit components
- Only color pens (no stencils, rulers, tapes, or other tools)

## GAMEPLAY RULES (DETAILED & CLEAR)

**JUDGING CRITERIA (30 MARKS TOTAL)**

| Criterion | Description | Marks |
|---|---|---|
| Creativity & Design Aesthetics | Beauty, uniqueness, and overall appeal | 10 |
| Shape Accuracy & Mathematical Precision | Correct angles, symmetry, proper shape formations | 10 |
| Presentation & STEAM Explanation | Explanation of geometry, coding, and design approach | 10 |

## FAQS (FOR TEACHERS & STUDENTS)

1. Can we use digital devices to control the robot?
No. Only coding cards from the Screen-Free kit are allowed.

2. Can we modify or decorate the robot?
Decorations are allowed, but no extra sensors, motors, or electronics can be added.

3. Can teams bring pre-coded sequences?
Yes, teams may plan coding sequences in advance, but the actual card placement must happen during the match.

4. Are we allowed to touch our own robot during Robo Soccer?
You may pick up your own robot ONLY:
• Before the match begins
• After the referee pauses or ends the match
But
You cannot touch your robot during active play unless it is stuck (referee permission required).
You cannot touch the opponent's robot at all (penalty: −5 points)

5. Can we bring our own A3 sheet for Rangoli?
No. Only the sheet provided by the organizers must be used.

6. Can we use rulers, tape, stencils, or geometry tools in the Rangoli challenge?
No, only:
• The robot
• Coding cards
• Color pens

7. Can teachers assist during the competition?
Teachers can guide students before the competition but cannot assist during the live event.

8. What if our robot runs out of battery?
Teams must ensure the robot is fully charged before the round starts.

# TINKER ORBITS KIT

## IMPORTANT NOTE – KIT PURCHASE

- Participation in this category requires teams to purchase the official **Tinker Orbits Kit (AI & IoT Kit) by STEMROBO.**
- To purchase the kit or for any related queries, kindly contact:
- Email: contact@steaminnovationleague.com
- Toll-Free Number: **1800-120-500-400**


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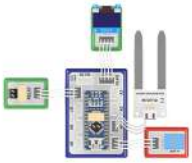


## 1. OVERVIEW

- The STEMROBO STEAM Innovation League (SIL) is a global competition for K–12 students, focused on innovation using STEAM (Science, Technology, Engineering, Arts, Mathematics), coding, robotics, and design thinking.
- Tinker Orbits is one of the supported kits in SIL, specifically the **AI & IoT Kit** designed by STEMROBO.
- The theme for this category is **"Think · Tinker · Transform"**: participants must identify a real-life problem and build an innovative solution using only the components available in one or more Tinker Orbits kits.

## 2. COMPETITION STRUCTURE & ELIGIBILITY

- Teams: Maximum 2 students per team
- Grade Levels: Grade 4 to Grade 6

**Kit Use Restrictions:**

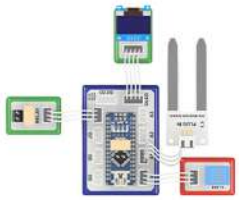
1. Teams can use only Tinker Orbits kit modules and sensors.
2. Teams may use more than one Tinker Orbits kit if required; however, no external modules, sensors, or microcontrollers are allowed.
3. Extra jumper wires (Externally) are permitted.

4. For structural or body parts of the project (chassis, housing, etc.), teams may use:
   - 3D-printed parts (PLA)
   - Sunboard / acrylic sheets
   - Wood / MDF / metal
   - Tinker Orbits PBL parts
- Originality: Projects must be original and must not directly copy existing products or projects.
- Functionality: The prototype must be functional and demonstrate real working behavior, not just a static model.

## 3. SUBMISSION & PRESENTATION

- Presentation Time: Each team gets 5 minutes to present and demonstrate their project.

During the presentation, teams should cover:



1. Problem Identification – The real-world problem being addressed
2. Solution Explanation – Circuit design, code logic, and use of Tinker Orbits modules
3. Design & Prototype – Physical structure, connections, and working demonstration
4. Impact – Practical relevance, scalability, and real-world usefulness

## 4. JUDGING CRITERIA (TOTAL: 50 MARKS)

| Criterion | Description | Marks |
|---|---|---|
| • Innovation | Originality and uniqueness of the idea | 10 |
| • Design | Aesthetic appeal, structural design, and craftsmanship | 10 |
| • Problem-Solving | Relevance and practicality of the solution | 10 |
| • Presentation | Clarity, technical explanation, demo, and communication | 20 |

## 5. REGISTRATION & FEES

•Registration fee for SIL 2026 is ₹999 per team.
•Teams must register via the official SIL registration platform.

**During registration, teams must submit:**
•School name, address, and city
•Team name
•Participant details (names, emails, contact numbers)
•Mentor / coach details
•Statement of Purpose (SOP): Description of the real-life problem

## 6. VISION & PURPOSE

- SIL aims to empower young innovators to become future-ready problem-solvers.
- The competition focuses on sustainability, economic viability, and social impact.
- Students develop 21st-century skills including critical thinking, collaboration, design thinking, and technical skills.

## 7. KEY RESOURCES & SUPPORT

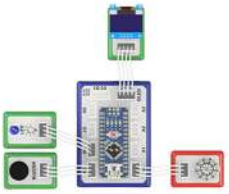
- **Tinker Orbits Kit:** The only approved electronics kit for this category.
- **STEMROBO Learn: Free "AI & IoT Kit** – Tinker Orbits" learning course.
- **Project-Based Learning (PBL)** resources to support ideation and prototyping.

## 8. RULES & COMPLIANCE

- All electronic components must belong to the Tinker Orbits ecosystem.
- Third-party sensors, controllers, or non-Orbits electronics are strictly prohibited.
- Structural fabrication using approved materials is allowed.
- Extra jumper wires are permitted.
- For any ambiguity, teams should consult the SIL organizing committee in advance.

## 9. INTELLECTUAL PROPERTY (IP)

- Projects must be original and non-infringing.
- Inspired ideas must clearly state references and improvements.
- Teams retain ownership of their work; documentation may be requested during judging.



## 10. AWARDS & OPPORTUNITIES

- National-level winners may get opportunities to present on global platforms.
- Participation strengthens innovation portfolios and STEAM credentials.
- Teams may receive mentorship, visibility, and future development opportunities.

## 11. IMPORTANT DATES & TIMELINE (TENTATIVE)

- Registration opens before the competition window.
- Teams should progress through:

**12. Research & SDG mapping**
**13. Ideation**
**14. Prototyping using Tinker Orbits**
**15. Testing & refinement**
**16. Final presentation preparation**

## 12. FAQS (FREQUENTLY ASKED QUESTIONS)

**Q1**. Can we use non-Tinker Orbits sensors?
A. No. Only official Tinker Orbits modules and sensors are allowed.

**Q2**. How many kits can we use?
A. Multiple Tinker Orbits kits may be used if required.

**Q3**. Can we 3D-print project parts?
A. Yes, for structural components only.

**Q4**. Are jumper wires limited?
A. No. Extra jumper wires are allowed.

**Q5**. Is UN SDG alignment mandatory?
A. Yes. SDG mapping is required during registration.

**Q6**. Is coding mandatory?
A. Yes. Coding is a core evaluation component.

**Q7**. Can mentors or parents build the project?
A. No. Students must perform the core building and coding work.