TECHNOSCHOOL PRESENTS

DRAFT · SUBJECT TO CHANGE

MechspireX 2026

Theme Brief

"Machines that Make a Difference"

Every MechspireX project starts with a real problem. Build a robot, a machine or an automated system that solves part of it, then show the jury how it works.

DATE

Saturday, 21 November 2026
Starts 10:00 AM

VENUE

St. Joseph Matric Higher Secondary School
Avadi, Chennai

ENTRY

Teams of 1–4 · ₹999/team
Paid after confirmation

01 · THE CHALLENGE

Start with a real problem

MechspireX asks every team to choose a problem they have actually seen, at home, in school or in their city, and to build a robot, machine or automated system that solves part of it. The jury is not looking for the most expensive kit. It is looking for a build that works, a team that understands it, and a clear line from the problem to the solution.

Three categories

Category	Classes	Theme	Team
Junior	Classes 3–5	**Helper Bots**	1–4 students
Intermediate	Classes 6–8	**Smart & Sustainable Cities**	1–4 students
Senior	Classes 9–12	**Autonomous Systems for Real Problems**	1–4 students

Rules of thumb

- Every member's class must fall within the team's category.
- Kits, recycled parts and 3D-printed parts are all welcome. The team must be able to explain every part it built or programmed.
- No fire, open flame, hazardous chemicals, or supply above 24 V.
- Bring everything the project needs to run: robot, laptop, cables, spare batteries. A power point is provided at each table.

How to use this brief

Read your category's page, pick one problem, and start building early. Test it often. The teams that do well are the ones whose robot works on the day, not just on the bench.

02 · JUNIOR CATEGORY · CLASSES 3–5

Helper Bots

A robot or moving model that makes a job easier at home, in class or on the street.

Pick one small, everyday problem and build a machine that helps with it. It can be simple: what matters is that it moves, it works, and your team can explain how.

Project ideas

- A plant-watering bot for the classroom
- A smart dustbin that opens on its own
- A line-following delivery cart
- A toy sorter that sorts by colour or size

These are starting points. Original ideas are encouraged.

What the jury expects

- A working model that moves or responds to something
- Motors, sensors, simple circuits or a beginner kit are all fine
- Every team member can explain one part of the build

On the day

Set up at your table, then present to the jury: what problem you chose, how your build works, and a live demonstration. Every member should be ready to explain their part. The jury will ask questions about your design choices and what you would improve.

> **Planning checklist:** pick the problem · sketch the idea · list parts · build a first version · test and fix · practise the presentation · pack spares.

03 · INTERMEDIATE CATEGORY · CLASSES 6–8

Smart & Sustainable Cities

Automation that makes a city cleaner, safer or easier to live in.

Choose a problem your city faces, such as waste, water, traffic, energy or safety, and build a robot or automated system that tackles part of it. Show the sensor input, the decision and the action.

Project ideas

- An automatic street light that saves energy
- A waste-segregation conveyor
- A flood or water-level alert system
- A smart parking or traffic-signal model

These are starting points. Original ideas are encouraged.

What the jury expects

- At least one sensor driving an automated action
- A programmed microcontroller (Arduino, micro:bit or similar)
- A short explanation of the city problem and who it helps

On the day

Set up at your table, then present to the jury: what problem you chose, how your build works, and a live demonstration. Every member should be ready to explain their part. The jury will ask questions about your design choices and what you would improve.

> **Planning checklist:** pick the problem · sketch the idea · list parts · build a first version · test and fix · practise the presentation · pack spares.

04 · SENIOR CATEGORY · CLASSES 9–12

Autonomous Systems for Real Problems

Robots that sense, decide and act on their own, in agriculture, healthcare, disaster response or accessibility.

Design and build an autonomous or semi-autonomous system for a real problem. The jury will look for sound engineering, a clear control logic, and evidence that you tested it.

Project ideas

- A soil-moisture and crop-monitoring rover
- An obstacle-avoiding assistive device
- A search-and-rescue bot for confined spaces
- A medicine-reminder and dispensing system

These are starting points. Original ideas are encouraged.

What the jury expects

- Autonomous behaviour: sensing, decision-making and actuation
- Original code, with the logic explained to the jury
- Evidence of testing: what failed, and what you changed

On the day

Set up at your table, then present to the jury: what problem you chose, how your build works, and a live demonstration. Every member should be ready to explain their part. The jury will ask questions about your design choices and what you would improve.

Planning checklist: pick the problem · sketch the idea · list parts · build a first version · test and fix · practise the presentation · pack spares.

05 · JUDGING

How projects are scored

Each team is scored out of 100 by the jury of its category. Scores are weighted towards a build that works and a team that understands it.

Criterion	What it means	Weight
Working demonstration	Does it do what the team says it does, reliably, on the day?	30%
Innovation and idea	How original is the approach to the problem?	25%
Relevance to the theme	How clearly does the project address its category theme?	20%
Presentation and teamwork	Can every member explain their part with confidence?	15%
Jury questions	How well does the team handle questions about its design choices?	10%
Total		100%

Key dates

- **Registrations close:** 14 November 2026, 11:59 PM IST
- **Team confirmation and payment:** after our team contacts you
- **Competition day:** Saturday, 21 November 2026, from 10:00 AM, St. Joseph Matric Higher Secondary School, Avadi, Chennai

Register at mechspirex.technoschool.in

₹999 per team, paid only after your team is confirmed. Lunch is provided to every registered participant.

This brief is a draft and may change. The final version will be shared with registered teams by email and published on the website.