



AMI SHISHU MANDIR
IN COLLABORATION WITH
FIZ ROBOTIC SOLUTIONS
PRESENTS

INTER-SCHOOL CHAKRAVYUH CHALLENGE

ON 22ND DEC 2025

POWERED BY
TECHKRITI'26
IIT KANPUR



<https://fizrobotics.com/icc>

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INVITATION

Respected Fellow Principal,

Greetings from **AMI SHISHU MANDIR!**

It is with great excitement and enthusiasm that I invite your esteemed institution to participate in our upcoming **Inter-School Chakravayuh Challenge 2025**, to be held in collaboration with **FIZ Robotic Solutions & Techkriti, IIT Kanpur** on **22nd December 2025** at **AMI Shishu Mandir, Gwalior**.

This fest aims to ignite innovation and foster a spirit of healthy competition among young minds. It offers students an exceptional opportunity to showcase their technical prowess, creativity, and teamwork through a variety of engaging and intellectually stimulating events. We believe that collaboration and interaction among schools play a crucial role in shaping the future of education and technology. We would be delighted to have your school join us for this event.

Please confirm your school's participation by registering at <https://fizrobotics.com/icc> or contacting us on taruna.amishishumandirgwl@gmail.com by **15th Dec, 2025**.

We look forward to welcoming your students and faculty to this exhilarating event and fostering a shared passion for technology and innovation.

Warm regards,
Ms. Veena Singh
Director, AMI Shishu Mandir



About Events

Date: 22nd December 2025

Venue: AMI Shishu Mandir, Gwalior

**Presented by: AMI Shishu Mandir in collaboration with
FIZ Robotic Solutions**

Technical Event Partner: Techkriti, IIT Kanpur

Where Science, Maths & Robotics Meets Creativity In collaboration with **AMI Shishu Mandir & FIZ Robotic Solutions** brings the **Inter-School Chakravyuh Challenge** competition an innovative platform blending science, maths, robotic and digital creativity to inspire young minds. This inter-school event fosters innovation, problem-solving, and teamwork while showcasing talent in both STEM and digital design.



About Events

Ganit Yodha Competition:

1. **Model Presentation:** Teams will build a sports-themed working model that displays real-time mathematical calculations used to win a game. The competition showcases how math drives strategy, performance, and victory in sports.

Vigyan Kawach Competition:

1. **Model Presentation:** Teams will develop working models inspired by space and defence challenges, solving real-life problems with scientific innovation. The competition empowers participants to take their ideas from project to product, showcasing mission-ready solutions for the future.

Robotics Events:

1. **Hoverush** – Build and control your own hovercraft to navigate through challenging tracks with precision and speed.
2. **Manoeuvre** – Test your robotic design and control as your bot overcomes obstacles and completes complex movement-based tasks.
3. **Battle of Balloons** – Compete in an exciting robo-war match where strategy, coordination, and robot performance determine victory.
4. **Flying Machine** – Design and fly your own water rockets to achieve the best flight duration, stability, and creativity.

Guidelines & Registration

Guidelines

- Registrations will open from 15th November 2025 and close on 15th December 2025.
- Participants or teams must register once for their selected event(s).
- Multiple entries are allowed, but event timings will not be adjusted for overlaps.
- Confirmation of registration will be provided on the registered email after verification by the Organizing Committee.
- Participants must carry their school ID card and registration confirmation slip/email on the event day.

How to Register

- Visit the website and register via google form.
- Send your responder's copy via email on **taruna.amishishumandirgwl@gmail.com**
- Thereafter the organizing committee will verify the details and thereafter will confirm your participation in the event.
- **Note:** Each school may nominate 2-science exhibits, 2-maths exhibit and 3-robotic events students in total, a maximum of 7 students per school will be permitted to participate in the entire event.



Website: <https://fizrobotics.com/icc>

Scan and Register now!

Schedule at a Glance

REPORTING TIME: 9 AM

S. NO.	EVENT NAME	TIME	VENUE
1.	Ganit Yodha	10:00 AM to 12:30 PM	Auditorium
2.	Vigyan Kawach	10:00 AM to 12:30 PM	Auditorium
3.	Hoverush	09:30 AM to 11:00 AM	BasketBall Court
4.	Battle of Balloons	09:30 AM to 11:00 AM	BasketBall Court
5.	Flying Machine	11:30 AM to 12:30 PM	Playground
6.	Manoeuvre	11:30 AM to 1:00 PM	Fountain Pond



GANIT YODHA

SPORTINGLY MATHEMATICAL



1

GANIT YODHA COMPETITION

[Event Duration - 2.5 Hours]

THEME : SPORTS (MODEL MAKING)

Participants : Team of 2 students

Model Allowed : One Per Team/School

Escort Teachers : One Per Team/School

Classes : VI-VIII

Event Description & Rules (Sports Theme + Real-Time Math Calculations):

- Teams will be evaluated on creativity, scientific approach, originality, technical skills, presentation quality, and how effectively their working model demonstrates real-time mathematical calculations used to win a sports game.
- Each model must be fully functional and show how maths—such as force, angles, speed, trajectory, timing, and scoring strategy—directly impacts performance in sports.
- Students may use charts to support and explain their calculations and gameplay strategy.
- Each school will be given 30 minutes to set up their model and other requirements.
- Extension cords will not be provided; all models must operate on batteries. Sockets will be available only for charging batteries, not for powering the model continuously.

Example: (This example is only for reference and does not need to be followed exactly.)

A working billiards model where sensors calculate the exact angle, cue force, rebound path, and collision points needed to pocket a ball. The system displays these calculations in real time, showing how mathematical precision determines every winning shot.



VIGYAN KAWACH

SCIENCE IS ARMOR, INNOVATION IS POWER



1

VIGYAN KAWACH COMPETITION

[Event Duration - 2.5 Hours]

THEME : SPACE AND DEFENCE (MODEL MAKING)

Participants : Team of 1-2 students

Model Allowed : One Per Team/School

Escort Teachers : One Per Team/School

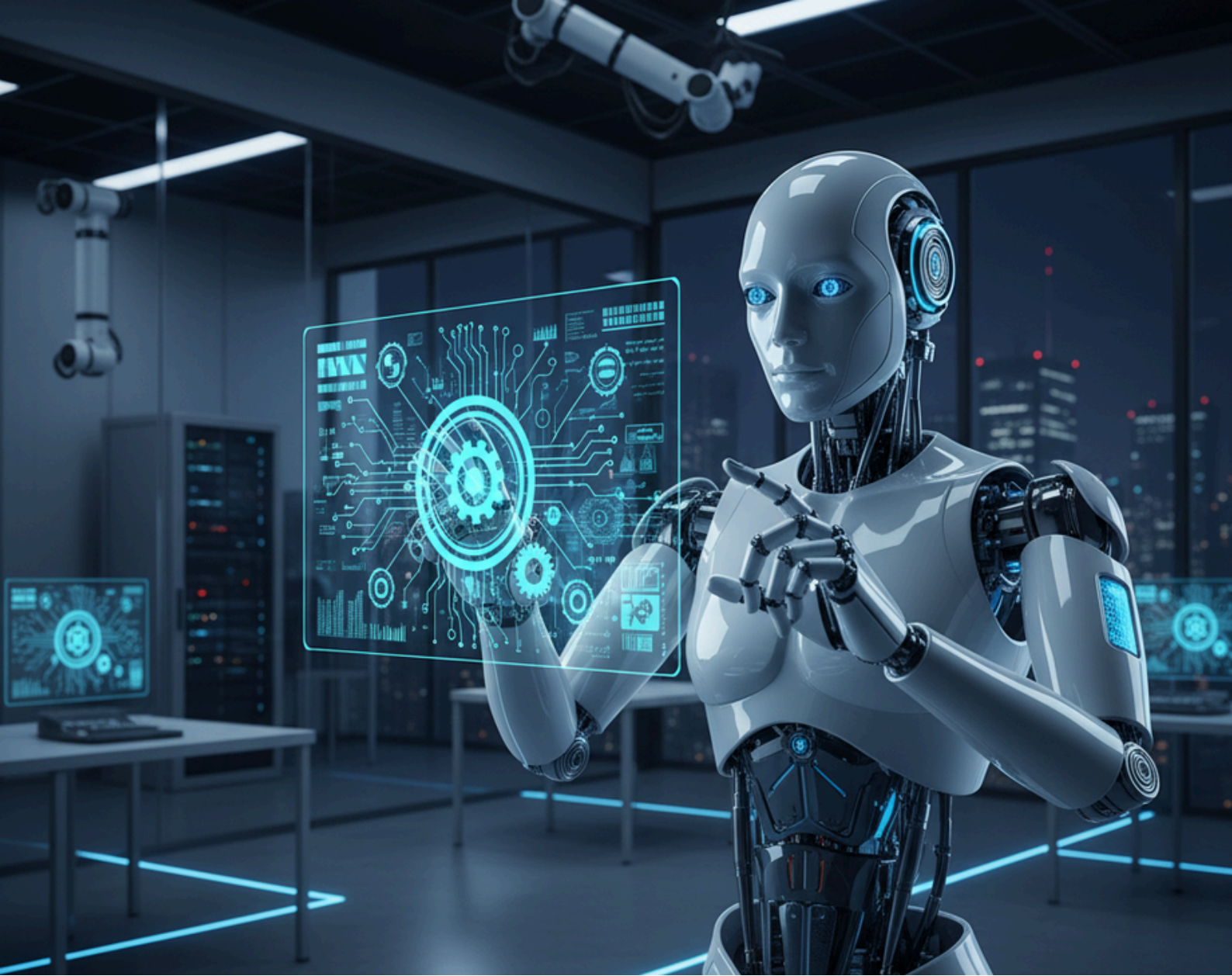
Classes : IX & XI

Event Description and Rules :

- Teams will be evaluated on creativity, scientific thinking, originality, technical skills, presentation, market ready and how effectively their working model demonstrates real-time scientific principles used in space and defence missions.
- Each model must be fully functional and should clearly showcase scientific concepts such as propulsion, aerodynamics, energy transfer, targeting mechanisms, navigation systems, communication technologies, or surveillance related techniques essential for mission success in space or defence operations.
- Students may use charts to support and explain their calculations and gameplay strategy.
- Each school will be given 30 minutes to set up their model and other requirements.
- Extension cords will not be provided; all models must operate on batteries. Sockets will be available only for charging batteries, not for powering the model continuously.

Example: (This example is only for reference and does not need to be followed exactly.)

A working model of a missile guidance system where sensors calculate the projectile's optimal angle, thrust, and trajectory to accurately hit a target. The model displays these calculations in real time, demonstrating how precision maths and navigation are critical in defence missions.



ROBOTICS EVENTS



1

Hoverush

(TECHKRITI, IIT KANPUR ZONAL EVENT)

[Event Duration - 2 Hours]

Grade: VI - IX & XI

Format:

- **Team Size: 3 students**
- **Hovercraft Design:** The hovercraft must be self-built (no readymade/lego kits/3D printed parts will be allowed), a minimum lift height of 3 cm at full throttle. Only electric motors are allowed, and metal propellers are prohibited.
- **Match Rules:** Teams must follow the track, avoiding penalties for obstacles, human intervention, or deviating from the path.

Rules:

- **Maximum bot dimensions:** 50x50x50 cm
- **Maximum bot weight:** 2 kg
- **Operating voltage:** Maximum 12V DC

Scoring System: Racing points are awarded based on successful track navigation, obstacle avoidance, and time taken. The final score will be calculated as Total Points. Penalties will be added for hand-touch, position reset of bot and bot failure.



2

Manoeuvre

(TECHKRITI, IIT KANPUR ZONAL EVENT)

Grade: VI - IX & XI

[Event Duration - 2 Hours]

Format:

- **Team Size: 3 students**
- The bot must be manually controlled and capable of gripping various blocks or shapes. It should be able to insert them into corresponding grooves carved into a cubic block. The gripping mechanism should be precise and able to handle various shapes securely. The bot should be completely hand-made, no ready made/lego chassis will be allowed.
- The bot can be either wired or wireless. Wireless control options include a dual-frequency remote, Bluetooth, or Wi-Fi.
- The bot should be able to precisely align and place the blocks into their respective grooves, requiring accurate control of its movements and gripping mechanism.
- For wireless bots, ensure the control mechanism provides a stable connection and sufficient range to operate effectively within the task area without any interference or lag.

Rules:

- **Maximum bot dimensions:** 50x50x50 cm
- **Maximum bot weight:** 3 kg
- **Operating voltage:** Maximum 12V DC



3

Battle of Balloons

[Event Duration - 2 Hours]

Grade: VI - IX & XI

Format:

- **Team Size: 3 students**
- Teams compete in an exciting bot battle where each bot carries a balloon attached to its side. The objective is to defend your own balloon while attempting to burst your opponents' balloons using offensive mechanisms.
- All bots will be lined up inside the battle arena, and the last bot with an intact balloon will be declared the winner.
- Bots can be controlled using wired or wireless remote systems.
- Use of ready-made/LEGO chassis or grippers is strictly prohibited.
- Bots must be equipped with non-destructive mechanisms — any design intended to cause structural damage will lead to disqualification.

Rules:

- **Maximum Bot Dimensions:** 50 x 50 x 50 cm
- **Maximum Bot Weight:** 3 kg
- **Operating Voltage:** Maximum 12V
- **Bot Limitation:** Each team can field only one bot in the arena.
- **Mechanisms:** Only safe and non-destructive popping mechanisms (like pins, needles, or spikes) are allowed.
- **Balloon Placement:** Balloons must be placed on the perimeter of the bot as instructed by the event coordinators before the match begins.
- **Disqualification:** Any act of human interference or intentional damage beyond balloon popping will lead to immediate disqualification.
- **Victory Condition:** The last standing bot with its balloon unpopped wins the Battle of Balloons!



4 Flying Machine

[Event Duration - 2 Hours]

Grade: VI - IX & XI

Format:

- **Team Size: 3 students**
- Participants must design a single stage water rocket to achieve maximum distance and accuracy. The competition will have two rounds.
- Each team gets two launch attempts per round.

Rules:

- Rockets must not exceed 2L in capacity.
- Only water and compressed air can be used as propellants.
- Safety measures (e.g., proper assembly and handling) must be followed.
- Launcher has to be fabricated by the teams individually, sharing of launcher is prohibited. Teams making their own hand made launchers will be rewarded with bonus points.
- Manual and electronic pumps are permitted in the event; however, teams must bring their own. The organizer will not provide launchers or pumps to any team.



General Rules

General Terms & Conditions

1. Participants must bring their own laptops, devices, and robots as required for the competition.
2. All technical equipment (bots, controllers, cameras, software, etc.) must be brought by the participants.
3. Only **1 escort teacher** is allowed per school to accompany the students for all the events.
4. The participants are responsible for the safety and functionality of their equipment.
5. Any violation of competition rules or unethical practices will lead to disqualification.
6. The judges' decision will be final and binding.
7. The participants must adhere to the schedule provided; delays may result in forfeiture.
8. Participants are expected to maintain discipline and abide by the school's code of conduct.
9. Refreshment will be provided to all the participants.
10. Any team participating in one event category cannot participate in the other one.

(Example:- If a participant takes part in any exhibit, they cannot participate in robotic events and vice-versa.)

How to Register:

Visit our official website to register: <https://fizrobotics.com/icc>

Key Dates

- **Last Date to Register:** 15th December 2025.
- **Competition:** 22nd December 2025

INTER-SCHOOL CHAKRAVYUH CHALLENGE



THE ORGANIZING TEAM

TEACHER INCHARGE

MS. TARUNA SINGH

+91-9977300796

STUDENTS CORE TEAM

- Yatharth Sharma
- Maitri Verma
- Yuvraj Singh Kaurav
- Vaibhav Singh Gurjar
- Dhara Kushwah

COORDINATOR TEAM

ROBOTICS & SCIENCE

- Sarang Chavhan
- Avik Jain
- Manomay Verma
- Aditya Dalela
- Bhavesh Marathe