



ROBOGENESIS' 2026

THEME OF THE YEAR: SUSTAINABLE CITIES AND COMMUNITIES

CATEGORY 5: WATER ROCKETRY (GRADES 6 TO 9)

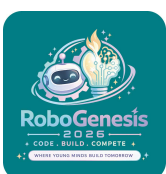
EVENT DATE: 29TH AUGUST 2026

Water Rocket Aerodynamics aims to introduce students to the fundamental principles of flight through a simple, safe, and exciting hands-on activity. The theme emphasizes how water and air pressure work together to generate thrust, allowing the rocket to accelerate and travel across a horizontal path. By experimenting with water levels, pressure variations, and launcher positioning, students gain a strong foundational understanding of propulsion systems and real-world physics

A major focus of this theme is learning how rocket design directly affects stability and distance. Students explore how streamlined shapes reduce drag, how nose cones influence airflow, and how proper fin alignment keeps the rocket travelling in a straight line. The importance of balancing the rocket's center of gravity and center of pressure is also highlighted, helping young learners understand why professional rockets require precise structural design.

Beyond scientific concepts, this theme promotes creativity, teamwork, and eco-friendly engineering. Students build their models using recyclable plastic bottles, safe materials, and clean propellant without chemicals or combustion. Through testing, observing, and improving their rockets, participants develop problem-solving skills and confidence in applying theoretical knowledge to practical challenges—making the water rocket challenge both educational and enjoyable.

Objective: Students should build a water rocket model using plastic bottles and safe materials, which can be launched using air pressure and must travel maximum horizontal distance in a straight path.



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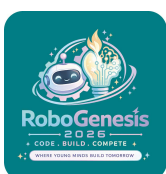
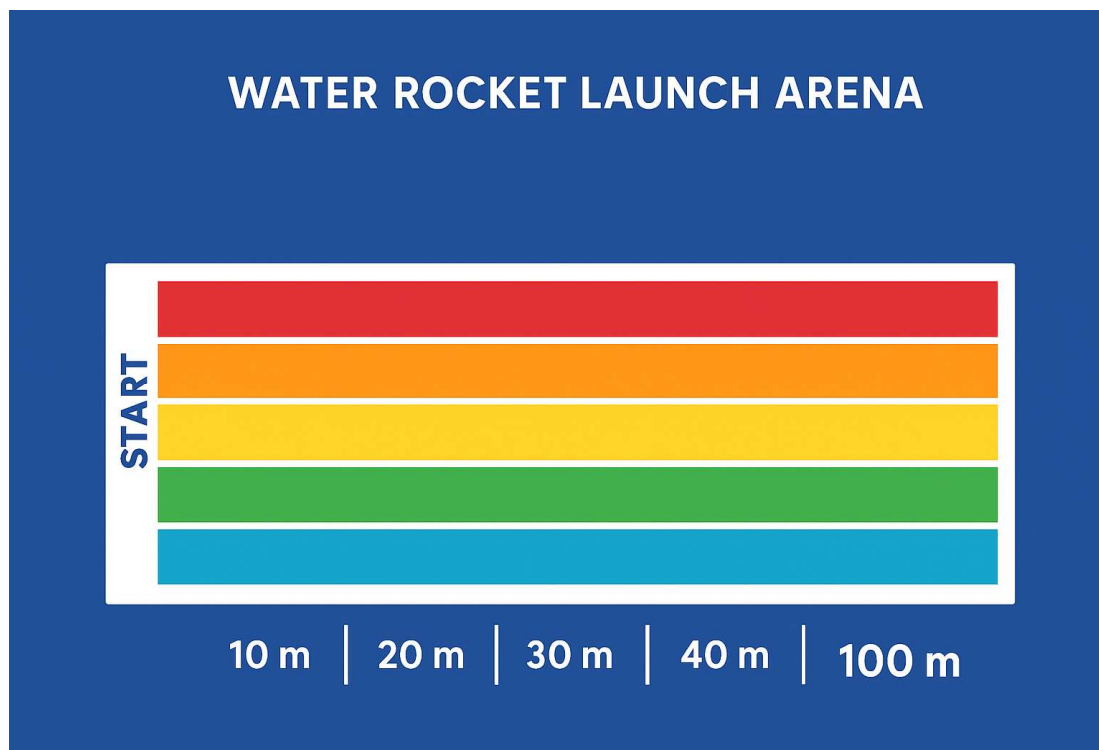


General Rules:

- Each team should consist of 3 students.
- A team should have students only from Grades 6 to 9.
- The rocket should be made using only plastic bottles (max 2 liters) and safe materials such as cardboard fins, plastic cones, tapes etc.
- Only water may be used as propellant, and air pressure will be provided using the standard launcher
- No chemical propellants, flammable materials or metal components are allowed.
- The rocket must travel within the designated horizontal launch lane.

Game Rules: In this category, students should build and bring a water-powered rocket made using plastic bottles and safe materials. The rocket should be able to launch using air pressure and travel the maximum horizontal distance inside the designated launch lane. The performance of the rocket will depend on its aerodynamics, design stability, water level, and launch angle. After filling water at the Water Fill Station, the rocket must be placed on the official launcher, and the team should aim for a stable and well-directed flight.

WATER ROCKET LAUNCH ARENA:



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Prelims:

In the prelims round, all teams must launch their water rockets to achieve maximum horizontal distance in the Straight Launch Lane.

- The rocket must be placed at the Launch Zone and launched using the launcher made by the team.
- The launcher should be capable of changing the angle of launch as per the preference
- Teams must fill water only at the Water Fill Station before the attempt.
- Each team will get ONE launch attempt in the prelims.
- In Prelims, the rocket must be launched at 90°
- **The objective is to ensure the rocket travels the maximum possible horizontal distance in the marked lane along with the maximum height attained.**
- **Rocket's flight time before its first ground hit will also be calculated (Minimum 10 Secs)**
- The rocket must remain inside the designated flight corridor throughout the launch.
- The rocket's distance will be measured from the Launch Line to the first point of ground impact.
- Total time for preparation is 3 minutes.
- Launch begins only after the referee whistle.
- Touching the launcher after the whistle or influencing the rocket physically is strictly prohibited.
- Judges' decision will be final.
- **Scoring Criteria: Based on Distance covered, height attained and flight time**

Finals:

Only the shortlisted teams from the prelims will compete in the finals.

- Each team will get TWO launch attempts in the finals.
- In finals, the rocket must be launched at two different angles:
 - Attempt 1 → Low angle (30° to 45°)
 - Attempt 2 → High angle (60° to 75°)
- The final score will be based on the average of both the attempts



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- The rocket must remain stable during flight and must land inside the marked lane.
- Negative points:
 - For deviation from lane
 - For unsafe design
 - For breakage upon launch
- Total time for setup: 4 minutes per attempt.
- The game starts once the referee gives the whistle.
- Judge's decision will be final.
- **Scoring criteria: Only based on the distance covered; (Exact distance will also be noted)**

SCORING CRITERIA

PRELIMS ROUND SCORING		
S.No	TASK	SCORE (50)
1	Rocket travels between 3 to 10 meters	20 Points
2	Rocket travels above 10 meters	30 Points
3	Height attained above the given mark (5 meters)	10 Points
4	Rocket's flight time before its first ground hit (Minimum 10 Secs)	10 Points
4	<i>Rocket deviates outside the lane</i>	<i>-5 each time</i>
TOTAL TIME TAKEN WILL BE CONSIDERED FOR QUALIFICATION		

FINAL ROUND SCORING		
S.No	TASK	SCORE (100)
LOW ANGLE LAUNCH (30° to 45°)		50 Points
1	Rocket travels between 10 to 20 meters	20 Points
2	Rocket travels above 20 to 30 meters	30 Points
3	Rocket travels above 30 meters	50 Points
HIGH ANGLE LAUNCH (60° to 75°)		50 Points
4	Rocket travels between 5 to 10 meters	20 Points
5	Rocket travels above 10 to 20 meters	30 Points
6	Rocket travels above 20 meters	50 Points
7	<i>Rocket deviates from the launch lane</i>	<i>-5 each time</i>
8	<i>Rocket breaks upon launch or unsafe design</i>	<i>-5 each time</i>
TOTAL TIME TAKEN WILL BE CONSIDERED FOR QUALIFICATION		



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General Info:

- *Pre registration is mandatory; On-spot registration is not allowed*
 - ***Last date for Registration: 20 August 2026***
 - *Participants must come with their school ID card*
 - *Certificate will be provided for all the participants*
- *For Registrations – www.greenfieldchennai.com*
- *For any queries or clarifications - **9499945291 / 7845140131***



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