



SOLAR CHALLENGE

Solar Boat Cruise Event Rules and regulations 2023

INTRO

This solar boat cruise is a new event this year. It aims to offer a different challenge and could prove to be lots of fun. As it is new the rules will be fairly open to see how we can build this event but we hope it will provide plenty of learning and innovation.

SPIRIT OF THE COMPETITION

We ask students to enter the “Spirit of the Competition”. We hope students will learn new skills and be prepared to be involved in fair and fun racing. Again being a new event we may not think of everything so we will just need to see how it plays out and will be keen to get your feedback.

THE AIM

The aim of the challenge is to encourage exploration of solar energy through design and construction of working models powered by the sun using solar cells. The objective is to develop a boat that will most effectively travel along the water using the power of the sun and a remote control to guide it. Two boats will race against each other with the winners moving on to determine an overall winner.

Design and constructions is to be carried out by the students with input from teachers and/or parents only when required for safety and education.

EVENT

The boat you design will need to complete the 10m to the other end of the pool, turn around and then head back to the other end of the pond. There will be no guide wires and steering will be via a remote control. This means your boat will travel approx. 20m.

Boat Size: The boat shall be no more than 600mm long and 350mm wide.

Blunt Nose: The front of your boat should be blunt to avoid getting stuck in the 13mm holes in the starting gate mesh. If unsure about this, please ask.

Solar cells: The boat is to be powered by commercially available silicon photovoltaic cells of up to 350 cm² active area. Boats will not share panels.
No storage devices or batteries can be used to power the boat.

Switch: An ON/OFF switch is to be included in the electrical circuit or via the remote control unit.

Inspection: The solar cells must be removable to reveal the inside of the boat.

Hulls: No commercially built hulls will be allowed.

Motors: The total motor cost must be under \$10.

Propulsion: Any form of propulsion can be used however it must not exceed the size requirement.

Steering: These boats will be remote controlled which will allow for steering via a rudder.

Remote: The remote control unit as well as the servers can be powered by batteries but the propulsion must be solar powered. If you use a motor controller it must be powered by the solar panel.

Aesthetics: This year's theme will be cruise boats. Your boat will need to look like a cruise boat that might take passengers overseas.

Scrutineering: Prior to racing all boats need to be checked to establish if they comply with these regulations. Read these regulations carefully and make sure your boat complies. Boats will be given a race number. This number will be used to call boats to the starting line for racing. Stay alert so when your number is called we can get races started promptly.

Pond size: The pond will be the same as the standard boat event. It is 10.5m long and approximately 1100mm wide. We will use the start gate and the finish line will be the front of the start gate when it is lying in the water.

The Race

The boats will start behind the start gate and will race to the far end of the pond and touch the end, they will then need to turn around using the remote control and race back to the front of the start gate which will be lying in the water and this will be the finish line.

You will have the opportunity to test your boat behind the start gate and then cover the panel to stop the motor or use the remote to turn it off. The starter will call out "ready" "set" "GO" and the start gate will be dropped.

Prizes

This year there will be two categories, Race Winner and Overall Winner. We will award points as follows.

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| Race Win | 50% | Race Winner Prize |
| Aesthetics | 30% | |
| Innovation | 20% | Overall Prize – highest score for the sum of these. |

We hope this new event will provide new challenges and a very different style of event.

If you have any questions or are unsure of any aspect, please contact me before the day so we do not have troubles on the day.

Thanks.

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