

# STEM - 100m Race

## Rules and regulations -2019

### **INTRO**

This event is aimed at tying into a unit of work at school or maybe even an outside project. Using the outline brief below we hope you will be as innovative as possible to solve this problem. We believe it will require all elements of STEM to produce a good solution. This is a student based project and only using teachers and parents as mentors and guides.

### **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. Your solution should be your own work and we hope it will involve a team of up to four people with lots of ideas and learning.

### **THE BRIEF**

We invite your team to build a fast, scaled model solar powered 4 seater car to race on the 100m figure 8 SunSprint track. It needs to comply with the standards below and will be judged on the criteria listed. Not only does it need to be fast but also it will definitely need to look cool to win this event. Good luck and have fun.

### **THE CAR**

#### **Standards**

The car will be powered by commercially available solar panels  
The car will have a majority of student input in construction  
Will be no wider than 320mm  
Electronics are allowed (also see criteria)

#### **Must Have**

An on off switch and be clearly marked On Off  
16mm clearance under the car  
Branding to identify the school and car name.  
Ability to see inside the car for scrutineering.

### **Judging Criteria**

First place in the race = 20 points  
Second place = 18 points, Third place = 16 points, All other cars who completed at least one lap 10 points.  
Log book for your project Maximum 5 points  
Design = 10 points  
Circuit diagram = 5 points (if electronics installed a full explanation of how it works needs to be included)  
Brief interview of team = 10 points

# STEM Solar Challenge

## **YOUR CHALLENGE**

Before the racing starts you will need to design and build a model solar car strong and robust enough to survive a knock race competition.

While you score good points by winning the race you will need to do well in all areas to win the overall event. Good teamwork and planning will get you through this event.

Log Book – throughout the whole process your team will need to keep a log book. We are looking for a working book not just a pretty book. Hand notes and sketches, calculations and testing results are some of the things we will be looking for. The log book will be submitted one week prior to the race for judging. It may be in paper format or electronic but please check with us before submitting to ensure it is compatible.

Design – Design will be judged on the Friday of the event and we will look at the following points.

- How well it covers of the outline above.
- Innovative ideas
- Use of materials

Circuit Diagram – This needs to be in paper format and submitted on the Friday. If you have used any form of electronics in your car you will need to explain how it works and why you have chosen to use it.

Interview – On the Friday of the event after scrutineering each team will be asked to do a short presentation about their car. This can take any form but you will need to organise it and should take no longer than 4mins. You will then be asked questions about your presentation and the car.

## **SCRUTINEERING**

Your car will be assessed according to the standards above and also ensuring it has all the items listed. You will need to have your circuit diagram at the time of presenting your car.

This process shouldn't take long. We will also take photos of your car and team plus check the actual circuit wiring from your diagram to the car.

## **RACING**

This will be a knock out event. In the first round the winners will move on to the second round. The cars who do not win the first round will race each other in a knock out and the winners of these races will also join the second round.

Once we have all the cars in the second round it will be a straight knock out event to establish a final race which maybe determined by a best of three race.

Once cars are submitted for scrutineering on the Friday they will be required to stay at the event until the Saturday. This means you will not be allowed to rebuild your car on Friday night. Repairs and minor changes of course can be done at any time over the two days.

The actual racing will be held on the Saturday but you may challenge any other car to a race on the Friday. Time will be allocated for this on the Friday Schedule.

## **FINAL NOTE**

If you are unsure of any aspect of the rules or how things will work please contact Michael.

We are looking for a model car not just a racing shell, it needs to be as life like as possible.

Thanks.

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