

# **SolarJam 2018 Information**

**\*Click [HERE](#) to register\***



**The Top Three Finishing cars in Upper Division (grades 6-8) are invited to race in the TransOptions Junior Solar Sprints' Inter-County Regional Race in Florham Park on Monday, May 21<sup>st</sup> (link [here](#))**

## **Event Basics:**

**Where:** *Outdoor tennis courts at Princeton High School*

*Navigate to 16 Walnut Lane, Princeton [\\*Google map link\\*](#)*

*Parking available in small lot on site and along adjacent streets*

**When:** *Saturday May 19<sup>th</sup> (Rain/Cloudy Date is the next day, Sunday May 20<sup>th</sup>)*

*10:00-10:15 Register, practice, make last minute repairs*

*10:30-10:45 Races begin*

*12:30- 1:00 Final races and awards*

**Who:** *Two age divisions: Lower (3-5) and Middle (6-8)*

**What:** *Solar Car Race. Space available upon request for open-ended "Photon Fair" show-n-tell (anything that uses the sun!)*

*\* This is a No/Low Waste Event. Restrooms and Water Fountains are available inside the building. A small complimentary refreshment (like an ice cream cone) may be available to participating students, but as far as lunch/snack items people are invited to bring their own food and beverages or fill up bottles with water inside. Please attempt to generate as little waste as possible – for example, use reusable containers for food/beverages. Thank you ☺*

## **Race Rules/Info:**

1. Each team must have at least one registered adult as an on-site chaperone.
2. Materials: must use one (1) stock panel and (1) motor from either PITSCO or SolarMade (see links below). Chassis, wheels, etc. can be from a kit or improvised.
3. Vehicle must carry an empty soda can, with its tab intact, as cargo. This can must be easily removable, like cargo, but stay onboard during the races. It cannot be a structural part of the vehicle, or be taped or glued to it, etc.
4. Vehicles will race along fishing line suspended ½" from the ground – Therefore vehicles must have something on their underside for the line to pass through, such as screw eyes or eye bolts (*see important info and images below*).
5. Teams can devise vehicles whose panels are removable, so that panels can be shared among multiple cars while practicing and on race day.
6. The vehicle will start from behind the starting line with all wheels touching the track. One team member will completely shade the vehicle's panel (with a cardboard sheet supplied by SolarJam) while another team member waits at the finish line to catch the vehicle. When the MC signals the start of the race, the team member will remove the cover so the panel is exposed to sunlight. Once the race has begun, team members cannot touch the car or guide wire until the race is final and vehicles are asked to clear the track by the MC. If a car is touched after the start of the race, it will count as an automatic 3<sup>rd</sup> place result in that heat.
7. Teams will compete in a Round Robin-style race structure so that every team is guaranteed at least three chances to race. There are three cars in each heat.
8. An overall winner of SolarJam 2018 will be determined by a final race pitting the 1<sup>st</sup> place from Upper Division against the 1<sup>st</sup> place from Lower Division.



Screw eye

## **\*IMPORTANT CONSTRUCTION TIPS\***

a) Vehicles run along a 0.8 mm thick monofilament guide wire which is pulled tightly at a height of roughly ½” above the ground. Vehicles will therefore need at least one “eye” on the bottom for the line to pass through (contestants usually employ two - one near the front, one near the back).

These “eyes” can be the screw eyes that come with some kits, or small eye-bolts, or something else entirely – their job is to keep the car on the guide wire.

*\*Whatever you choose to use for this job, you must be able to place the car on the wire and remove it without having to untie the guide wire.*

If using screw eyes or eye-bolts, this means they will need to be pried slightly open, about 1 mm. Please do this prior to race day. You may find that you put too much stress on your vehicle if you try to pry open the eye when it is attached to the car – doing so prior to attaching it to the chassis may be a wise move.



Eye Bolt

b) If you are using a soft and/or thin material for the body of the car (like balsa wood), a screw eye may not remain stable (even with hot glue applied) and you may want to use a small eye bolt with nut and washer, like the one shown above.

c) We recommend that you practice getting your cars to run straight without a guide wire – if it does not go fairly straight on its own, it will strain against the line and lose speed.

d) Contestants are encouraged to put vehicles through a “Drop Test” from 12 inches off the ground. If it stays intact and runs well afterwards, it should be able to handle the normal race-day jostling involved with maneuvering the car on and off the wire, etc.

**\*\*\*\*\*Click [HERE](#) to register\*\*\*\*\***

## **Materials and Resources Links :**

Here are links to the two kits whose panel and motor are in compliance with the SolarJam and Junior Solar Sprints' race rules :

[LINK to SolarMade website](#) – kit includes everything but vehicle body (chassis)

Cost: \$27.98

[LINK to Pitsco website](#) – kit includes everything including balsa wood for chassis

Cost: \$52.95

- These links include resources to help guide construction, and you can find more such resources at this [TransOptions website link](#) under “Tips for Building”
- If your team is looking for additional engineering challenges, feel free to source and innovate your own chassis, axles, and wheels. The only items which contestants **MUST** use from one of these purveyors is the panel and motor. In reality, you will need the gears that come with either kit as well, unless you were to fashion your own from scratch.
- There are links on the above pages through which you can buy items piecemeal instead of a kit, which can help if you have multiple teams who are sharing the solar panel but still need their own motor, gears, etc.
- Pitsco's solar panel is much more durable, so if you plan to use it again, for this event or other uses, it may be the better choice.

**\*\*\*\*\*[Click HERE to register](#)\*\*\*\*\***

**Contact Point for Questions or to volunteer:**

**Andrew Lloyd**

***theandrewlloyd@gmail.com***