

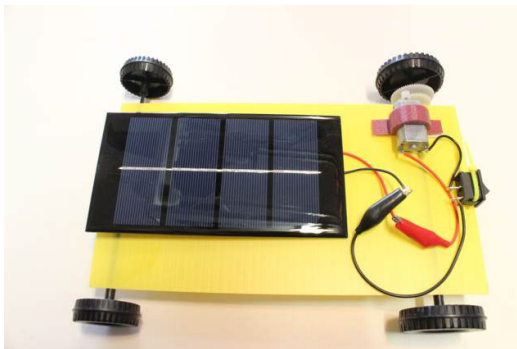
# Online Mini Solar Vehicle Competition

## Overview and Rules

**Entries close 11:59pm AEDT 5 November 2023**

### Overview

This activity will provide students with insight to Sustainability, Statistics and STEM and allows plenty of room for creativity and fun!



#### Individual students or teams of students:

- ❖ build a Mini Solar Vehicle (SV) from the approved kit<sup>1</sup> with at least certain elements<sup>2</sup>
- ❖ test and redesign to achieve the best speed
- ❖ race along a 10m distance (once in each direction) per track rules<sup>3</sup>
- ❖ video record (per track rules<sup>3</sup>) the race & transit times
- ❖ submit online (via the registered teacher) the verification video, recorded time, and names of students.

***There are 3 Divisions – entry is based on the School Grade of the oldest participant in a group.***

***Primary (Grades 3-6) – Junior Secondary (Grades 7-10) – Senior Secondary (Grades 11-12)***

***Why not run a class, grade or whole-of-school Mini SV competition!*** Per Division you may submit results for:

- all teams/individuals who participate; **or**
- the top 3 mini SVs, plus a separate list of all participants so they may receive recognition of participation.

***Why not compete against other schools – coordinate an inter-school competition in your region!***

***Share details (pre- and post-event) for us to upload to the website!***

### <sup>1</sup>Approved Kit

- ❖ [Kite Magic Advanced Model Solar Car Kit](#)
- ❖ Each school may order [via online EOI](#) up to **5 free kits** and, if ordered with the free kits, **up to 5 additional kits at \$15 per kit** (incl GST & postage). *Those home-schooling* may order 1 free kit. Further kits are \$29.75 per kit (plus GST & postage).



### <sup>2</sup>Your Mini SV

- ❖ Must use:
  - only 1 Kite Magic 2 Volt 700mA solar panel
  - only 1 Kite Magic F18 motor
  - the kit's on/off switch (Solar, Off, Battery)
  - a 2 X AA battery pack without batteries (but useful as part of testing)
- ❖ Students may use any materials for the construction of the chassis, axles and wheels.
  - Family input is encouraged!
  - Consider how you will approach your design, testing and improvement – you may be able to also use this as a submission into the [National Schools Poster Competition!](#)

### 3 Track Rules and Submission

- ❖ A teacher (or home-school educator) must register via the [www.ssss.org.au](http://www.ssss.org.au) website.
  - ❖ All submissions are via the registered teacher or home-school educator
- ❖ A submission may be for an individual or team of 2 to 5 members.
- ❖ All submitted names will receive certificates!  
So if only entering the top few results (for the best performing mini SV groups), ensure you also provide the separate list of ALL who participated (where prompted to do so)!
- ❖ Your recorded submitted race result must be based on solar power (the Sun) – the attached battery case must be empty.

❖ **For each entry, the registered teacher/educator must:**

- ❖ **UPLOAD** A video of the mini SV's performance on a track meeting the criteria<sup>4</sup>
- ❖ **ENTER (where identified online)**
  - First race time
  - Return race time
  - Total across both runs
  - Names of those who created the mini SV
  - The names of anyone who participated (but whose entry wasn't uploaded as not producing a competitive time)

### 4 Video of the mini SV's performance on a track meeting the criteria

❖ **Establish your track (any surface)**



- ❖ Mark start and finish lines 10m apart.  
***We recommend you have clearly visible start and finish points (cones or other designs)***
- ❖ Place from the start to finish lines an extended tape measure that is 10 metres long.
- ❖ ***[Click here to view a 30-second video for proving the correct setup](#) – the steps are noted below***

❖ **Video record the following continuously** – no cut aways (*actions or positioning are noted*):

1. Start and finish lines and 10m measurement on the tape measure between  
*Record from the start line, follow the 10m tape along to the finish line.  
Zoom out (move away from finish line) until the start and finish lines are visible (raising off ground level or swivelling camera (off the perpendicular) may assist)*
2. A stopwatch recording the time, and it being started at time of release of mini SV, and stopped at the point where the mini SV first crosses the finish line
3. Vision of the mini SV racing from the start through to finish lines
4. Vision of the mini SV racing in the reverse direction from original finish to original start lines  
*(this demonstrates a track without gradient...i.e., track is level, or to take into account any potential slope in the track in either direction)*

- ❖ Record your measurements to the nearest one-thousandth of a second
- ❖ Sum the two measurements (total time across both runs)
- ❖ **Entries close midnight 5 November 2023**

Additional Hints and Videos – available via Resources Menu item 'How to build a mini SV' once you have registered & completed the survey.