

Pre-build 2. Solar-powered car – *Updated Jan 25, 2024

Your task is to design and build a model of a solar-powered car that goes the farthest distance in a fixed amount of time.

The car must be built from cardboard only, except for the wheel shaft, motor, gears (if needed), solar panel, electronic components (if needed), and connecting wires. The size of the car cannot exceed 25 cm in height, width, or length.

No energy of any kind can be stored in the car before the start of the trial. The car must have an easy way for the judges to verify that no energy has been stored.

Judges will provide a standard light source for all teams, shown here: [Rechargeable Flashlight 250000 High Lumens, Powerful Led Tactical Flashlights with Zoomable, 7 Modes & COB Light, IPX5 Waterproof, Brightest Flashlight for Camping, Emergencies, Dog Walking : Amazon.ca: Tools & Home Improvement](#)

The light source will be set to a continuous high-beam setting. The team may adjust the focus of the beam only.

The light will be placed on a table that is maximum 74 cm high.

The team should provide a stand to hold the light source and direct the light in the desired direction. The stand should be maximum 25 cm in height, length, or width including the mounted light source. The stand and the light have to remain on the table during the trial. The stand may allow for some movement of the light source during the trial, but this motion may only be powered by gravitational energy and cannot move the light outside of the allowed stand dimensions. In that case, the movement has to start simultaneously with switching the light on. No one may touch the flashlight, its stand, or the car after the start of the trial.

The trial will begin when the flashlight is turned on and will last for two minutes. The car should move as far as possible during the two-minute trial.

Scoring

The score will be the distance traveled in mm, measured as the straight-line distance perpendicular to the start line – see picture, below. If there is a tie, the heavier car wins.

Each team has only one trial, and the preparation and the trial cannot take longer than 5 minutes from the time the team's time allocation begins.

