



**CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY**

Name(s) Cole N. Barker	Project Number J0201
Project Title Is a Solar Car's Performance Affected by the Angle of Its Solar Panel?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective is to learn if placing a solar panel on a model car at different angles to the sun affects the speed the car traveled. I think the angle that is the most direct toward the sun will have the best performance.</p> <p>Methods/Materials Materials: 1.solar car kit 2.sunlight 3.stopwatch Procedure: 1. Perform test on a sunny day at 12:00 noon when sun is directly overhead 2. Measure and mark one meter on flat sidewalk 3. Run the model car at the first angle and record time. 4. Run the model 3 more times at this angle and direction and record the time 7. Repeat steps 3-5 with the panel at different angles and opposite direction</p> <p>Results The flat panel averaged 3.455 seconds to travel one meter. At a 45 degree angle with the panel facing south, the average sped up to 2.2525 seconds. And at a 90 degree angle facing south, the average went to 2.22 seconds. With the panel facing north at 45 and 90 degree angles the panel must not have received any light because the car didn't move. Also, facing this direction and laying the panel flat the time was 4.3225 seconds.</p> <p>Conclusions/Discussion My testing found that while the car traveled fastest with the panel facing south at 45 and 90 degrees, it did not move at all with the panel facing north. Therefore, my conclusion is that the panel worked best when laying flat and directly facing the sun at 12:00 noon. Using this information, I believe solar powered cars can have improved performance and practicality and soon be a larger part of the automobile industry. My project shows that a flat panel had fairly acceptable performance.</p>	
Summary Statement Testing the performance of a solar panel at different angles to the sun	
Help Received My Dad helped me build the solar car kit.	