



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Krystal E. Mendez	Project Number J0209
Project Title Catching Rays: Analyzing Maximum Solar Efficiency as Related to the Sun's Position throughout the Day	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective is to determine the time of day that produces the maximum solar efficiency as is measured by the time it takes for a solar car to travel a preset distance.</p> <p>Methods/Materials The materials needed for my experiment are: a project kit miniature solar car, a meter stick, and a timer. I will construct a solar powered car from a kit; the solar panel will be on top of the car. I will use a meter stick to measure out four meters on the ground (the distance the car is to travel). At three preset times throughout the day, I will time how long (in seconds) it takes the car to travel the four meter distance. I will record the results and repeat the experiment for a total of fifteen times each preset time. I will repeat the process over a period of days.</p> <p>Results The overall results of my project confirm that the afternoon time produces the most efficient solar energy.</p> <p>Morning average time: 74.4 seconds Afternoon average time: 28.467 seconds Evening average time: 744.0 seconds</p> <p>Conclusions/Discussion I learned that the angle of the sun does affect the amount of energy produced by solar panels and so therefore my hypothesis was supported. The afternoon time was the most efficient and caused the car to travel the distance in the fastest amount of time. I think that this is important because solar engineers, scientists, and people like me who do solar projects can use the angle of the sun to their benefit.</p>	
Summary Statement My project is about determining the time of day and the angle of the sun that causes the solar panels to produce the most amount of energy.	
Help Received Brother helped to construct the solar car; science teacher helped with editing and advising	