



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> Meredith A. Brown	<b>Project Number</b> <b>J1005</b>
<b>Project Title</b> <b>Solar Energy: Friend or Foe? A Matter of Perspective</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The goal for this experiment was to find out what the environmental impact of placing solar panels in the desert would be. <b>Methods/Materials</b> Three boxes were built from plywood, approximately 100X36X20 cm. The boxes were filled with sand and solar panels were placed about 4 cm above the sand. The boxes were enclosed in plastic. Thermistors were used to measure the temperature in the core, sand surface, panel surface and air above the solar panels. Readings were taken every half hour using a digital voltage meter. Those readings were converted to temperature. This was done for five days. <b>Results</b> It was found that the sand surface of the box without the solar panel (desert box) responded to temperature changes faster than the two boxes with solar panels. The core of the desert box responded faster to temperature change than the two other boxes. The air above the solar panel boxes was a lot hotter than the desert box. The core of the sand box was always cooler than the surface. <b>Conclusions/Discussion</b> Solar panels did affect the desert environment. They raised the temperature of the air and lowered the temperature of the desert surface. This happened because they provided shade for the ground, keeping it cool, but their dark color heated the air because it absorbed and not reflected the sunlight.	
<b>Summary Statement</b> This project found that there will be an environmental impact if solar panels are placed in the desert.	
<b>Help Received</b> Father helped test and obtain materials, Teacher helped with final notebook and dead lines.	