



# CALIFORNIA STATE SCIENCE FAIR 2008 PROJECT SUMMARY

<b>Name(s)</b> <b>Diego A. Ramirez</b>	<b>Project Number</b> <b>J0923</b>
<b>Project Title</b> <b>Solar Cooking in Humboldt County</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My objective was to find out if it is possible to cook frozen veggies in a homemade solar oven in Humboldt County where the temp never gets very high. My hypothesis was that yes you can cook frozen veggies in a homemade solar oven in Humboldt County because I think the oven will heat up by the light that goes in and not by the temp outside of it.</p> <p><b>Methods/Materials</b> I built a small solar oven out of a box, styrofoam, aluminum foil, glass and black paper. I used a glass container to cook the frozen veggies in and I put a thermometer inside the oven and another on the outside of the oven. I waited for a sunny day and placed the oven directly in the sun. I recorded the temps inside and outside of the oven every hour. I also adjusted the oven about every 15 minutes to make sure it was directly in the sunlight.</p> <p><b>Results</b> I did 4 tests with my solar oven and highest temp reached was 168°F. I was able to cook frozen veggies and an egg. The 1st test I did for a total of 2 hrs. The temp inside the oven reached 100°F and the temp outside was only 76°F. The 2nd test I did for a total of 4 hrs and the temp inside the oven reached 168°F and the temp outside was only 78°F. The 3rd test was done for a total of 2 hrs and temp inside the oven reached 130°F and the temp outside was only 66°F. The 3rd test was cut short because the sun started to go down and the temp of the oven was decreasing. The 4th test I did for a total of 4 hrs and the temp inside the oven reached 152°F and the temp outside was 80°F. I had better results with tests 2-4 than with test 1 because in test 1 I was using plastic wrap for the top of my oven. I was able to get a piece of glass for the top and my results were much better. I also found that the highest temps were reached 12 and 1pm.</p> <p><b>Conclusions/Discussion</b> I found that you can cook frozen veggies in a homemade solar oven in Humboldt County. I found that it is important to have a glass top on the oven and to make sure it is directly in the sunlight. I found that it would be better to have the top of the oven slanted to catch the lower sun rays. I learned that the temp outside of the oven doesn't matter as long as there is sunlight going through the glass on the top. My project is a cheap, fun and environmentally friendly way to cook in the outdoors. Solar ovens can be very useful to people who enjoy the outdoors or for people who live in isolated areas where gas and electricity are not available.</p>	
<b>Summary Statement</b> Solar cooking in Humboldt County where the temperature outside is not very warm.	
<b>Help Received</b> Mom helped type report, neighbor cut glass	