



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

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| <b>Name(s)</b><br>Cameron E. Merten  | <b>Project Number</b><br><b>J0918</b> |
| <b>Project Title</b><br><b>Going Green: The Battle of Two Solar Water Heaters</b>  |                                       |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>I want to make the planet a better place to live in and keep it healthy. As well I want future generations to be safe and have the same habitat as the generation before them. I figured that I could really help by doing a science fair project on solar energy.</p> <p><b>Methods/Materials</b><br/>The procedure that I used to conduct the experiment is to: build solar water heaters. Conduct experiment number one, which is asking the question: What heating method will heat a pool up to the highest temperature in two hours? Record results during the test and at the end of the test. Conduct experiment number two, which is asking the question What heating method will heat a pool up the quickest to seventy-five degrees Fahrenheit? Record results during the test and at the end. Conduct the second trial for each question. Record results for both tests during and after the test is completed. Add up all the costs of the different supplies used for each solar water heater separately. This will be answering the question: Which heating method is the most cost effective? Record results. The main materials that I needed were cooper, black vinyl, a board, black paint, water and buckets, there were many other materials needed for the making of the solar water heaters</p> <p><b>Results</b><br/>The results for tests one and two (both trials) did not match the hypothesis. However, for the question: Which solar water heater will be the most cost efficient? the results did match the hypothesis.</p> <p><b>Conclusions/Discussion</b><br/>When I looked back at my results I found out that the black vinyl had probably had the best results for questions one and two because the cold air in the sunroom had allowed the copper to absorb more of the cold and. Whereas the black vinyl did not. Therefore, in the morning when the experiments were conducted the copper and started out at a lower temperature that the black vinyl did. This gave the black vinyl an advantage in heating up to a higher temperature.</p> |                                       |
| <b>Summary Statement</b><br>I built to solar water heaters and then I tested them.   |                                       |
| <b>Help Received</b><br>Mother revised work; Father helped drill holes and supervise the building of the solar water heaters   |                                       |