



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Nora M. Britton	Project Number J0904
Project Title Heat: From Substrate to Water	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To find whether gravel, sand, or clay transfer heat to water the quickest and highest degree Celcius, depending on the temperature they intially have.</p> <p>Methods/Materials Tape a plastic tube to the center of the can, then fill with 3 litres of terra cotta clay, pumice gravel, or sand. Then heat substrate to 60 degrees Celsius. Pour water into tube, and record temperature increase at 2 minute intervals for 30 minutes. Repeat 3 times for each substrate.</p> <p>Results Gravel heated water the quickest, followed by clay, and then sand. Clay heated water to the highest average degree of 45.9, then gravel with an average of 44.5, and then sand with the lowest of 42.</p> <p>Conclusions/Discussion These results support my objective for I found that clay heats water to the highest degree, but gravel the quickest. This is useful information for determining the preferential substrate for an application, especially the application to Geothermal Heating and Energy.</p>	
Summary Statement My project was about finding if sand, gravel, or clay heat water the quickest and to the highest degree, and the result's application to geothermal heating and energy.	
Help Received Besides interviews with Erik Zinn, a geologist, suggestions on project and procedure from parents, and Grammatical Editing from a parent, I received no help.	