



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> Nicolo R. Daug	<b>Project Number</b> <b>J1107</b>
<b>Project Title</b> <b>The Effect of Water Temperature on a Sorbent's Ability to Clean Up Oil in an Oil Spill</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project was to determine if water temperature affects how much oil a sorbent can absorb in an oil spill and to find out what temperature of water the sorbent would be most effective in--tropical, temperate, or arctic. <b>Methods/Materials</b> 2.75 liters of water (28-30°C for tropical, 18-20°C for temperate, 2-4°C for arctic) was poured into a pan which was placed in a water bath to regulate temperature. 300ml of motor oil was poured into the water to simulate an oil spill. A 14x14cm polypropylene pad was placed into the middle of the pan to absorb oil for 15 minutes and the soaked pad was weighed to find out how much oil was absorbed. Ten trials were done for each water temperature and the average weight of oil absorbed was compared. <b>Results</b> The pad absorbed the most oil in the tropical setup (70.4g), followed by temperate (60.6g), and lastly arctic (51.8g). In the arctic setup, the pad absorbed 15% less oil than the temperate and 26% less than the tropical. <b>Conclusions/Discussion</b> My conclusion is that the sorbent was most effective in absorbing oil in the highest temperature water (tropical) and least effective in the lowest temperature water (arctic). The results suggest that in a marine oil spill, water temperature is an important factor to consider when choosing the method for cleaning up the spill.	
<b>Summary Statement</b> This project was done to determine if water temperature affects a sorbent's ability to clean up oil in the event of an oil spill.	
<b>Help Received</b> My mother helped me get all the materials I needed and my teacher lent me a Celsius water thermometer.	