



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

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Project Title The Efficiency of Various Materials in Cleaning Up an Oil Spill	
Abstract Objectives/Goals The objective is to determine the efficiency of various materials in cleaning up a simulated oil spill by measuring the amount of oil and water absorbed. Methods/Materials Five (1-3/4x1-3/4 inch) strips of ten different materials (burlap, blown polypropylene, cotton, polyester, wool, nylon, acetate, fleece, paper towels, polyethylene) were tested. Each material was individually placed in a beaker filled with 200 mL of water and 10 mL of motor oil. The solution was then filtered through a coffee filter to eliminate excess oil. The amounts of oil left in the beaker, oil gathered by the materials, water left in the beaker, and water gathered by the materials were recorded. Each material was tested a total of ten times. Results The results show that polypropylene picked up the most oil leaving minimal traces of oil in the beaker. Fleece also absorbed a majority of the oil leaving .5 to 1 mL in the beaker. The polyethylene and nylon were both poor in absorbing oil leaving as much as 4 to 5 mL of oil in the beaker. However, polyethylene and nylon also rejected the most water. Conclusions/Discussion The polypropylene absorbed the most oil (average 9 mL) although it collected more water than expected (average 3 mL). Burlap also collected the majority of the oil due to its organic properties. Overall organic materials proved to be most absorbent, but synthetic materials were the most efficient. Polyester and nylon absorbed the least oil but also relatively low amounts of water. This made polyester the most efficient material because 81% of the liquid absorbed was oil.	
Summary Statement The objective is to determine the efficiency of various materials in cleaning up a simulated oil spill by measuring the amount of oil and water absorbed.	
Help Received Mr. Bob McClure of Advanced Cleanup Technologies, Inc. provided information about oil spill clean up.	