



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Holly C. Borg	Project Number J1905
Project Title The Oil Effect: The Removal of Oil from Bird Feathers using Common Household Solvents	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my experiment was to determine the most effective and safest way to remove motor oil from bird feathers.</p> <p>Methods/Materials The materials I used in my experiment were motor oil, 18 untreated craft feathers(that weigh .1grams each), T-Gel shampoo, L'Oreal Kids Shampoo, Dawn Dishwashing Detergent, Baby Powder, Baking Soda, Suave Conditioner, Water, Measuring Utensils, Clear Plastic Tupperware, Triple Beam Balance, Paper Towels, Toothbrush, Stopwatch, Composition Book, and a pen. I tested the buoyancy and weight of each feather at different intervals during the experiment. I tested the buoyancy of the feather at the beginning of the experiment, and after the whole process. I tested the weight at the start, then again after exposed to oil, and after cleaned with solvents. I 3 feathers for each solvent for 3 minutes. I used a toothbrush and water along with the solvent to cleanse the feather. The weight and buoyancy levels of each feather determined how much oil was removed.</p> <p>Results My hypothesis, that T-Gel shampoo would remove the most oil from the feather, was incorrect. Instead I found that L'Oreal and Dawn removed oil the best from the feathers tested. I found that L'Oreal and Dawn both returned their feathers to .3 grams after cleansing; all feathers weighed .1grams at the beginning of the experiment. Yet, the buoyancy test, proved different results. Baby Powder returned all its tested feathers to their original buoyancy level, while Suave Conditioner made all its feathers sink, and all other solvents retained the buoyancy of one feather while the other two sunk.</p> <p>Conclusions/Discussion L'Oreal and Dawn Shampoo were the most effective ways to remove motor oil from bird feathers. But, since my hypothesis was to find the safest and most effective way to remove oil from bird feathers, my results show that L'Oreal shampoo proves my hypothesis. Not only is L'Oreal gentle, it is tear free. So now, if the volunteers chose to use the shampoo, they could remove the oil from the birds head, moreover making the bird safer and healthier when it is returned to the wild. Since I found that Baby Powder enables the bird feathers to float again after exposed to oil, I have detected another process in which to remove oil. This data proves that L'Oreal and Baby Powder could be an alternative to Dawn Dishwashing detergent that is safer, more effective, and less time consuming.</p>	
Summary Statement My project tests which household solvents will remove motor oil most effectively and safely from bird feathers.	
Help Received I did my project completely on my own.	