



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Annick-Marie S. Jordan</b>	<b>Project Number</b> <b>S0513</b>
<b>Project Title</b> <b>Making and Testing Soap</b>	
<b>Abstract</b> <b>Objectives/Goals</b> Throughout this whole project, I have created various types of soaps and other ingredients that contribute to the soap making process. There are many different ingredients that are needed to create a great soap. I created three soaps made with vegetable oil, and three soaps made with vegetable shortening. I predicted that the soaps made with vegetable shortening would turn out the best. I felt that the soaps made with vegetable oil would not be as creamy, or evenly mixed compared to the other soaps made with vegetable shortening. Later, I performed a survey to see what the most popular soap would be. I had ten female students and ten male students wash their hands with every soap I made. Then, they told me which soap smelt the best to them, and which soap lathered or felt the best. I also produced three different types of essential oils through the process of distillation. I also tested the pH of different manufactured shampoos, using a pH meter. <b>Methods/Materials</b> Distillation: Condenser Tube, Rubber Tubing, Petri Dishes and Lids, Flask, L-Shaped Tube, Hot Plate, Beakers, 4 Tablespoons of ground coffee, orange peel, and lemon peel, Rubber stoppers, vegetable oil, reagent alcohol. Shampoo Testing: pH meter, 1 oz. bottles, 6 Different brands of manufactured shampoos, Beakers. Soap: Sodium Hydroxide, Spring Water, Vegetable Oil, Vegetable shortening. <b>Results</b> The soaps made with vegetable shortening turned out exceptionally well. They were creamier, evenly mixed, and just turned out better, as a whole. After completing the survey, it was apparent that the oatmeal soap was most popular and the vegetarian soap was least popular. All of the shampoos had a pH that was near 7, which is what they all should have read. <b>Conclusions/Discussion</b> After analyzing the survey I came to the conclusion that if I was to market the soaps, I would create a soap with the fragrance of the Oatmeal Soap, and the texture of the country apple soap for the females. For the males, however, I would just market the Oatmeal Soap the way it is. The distillation process worked in creating three different types of essential oils (orange, lemon, and coffee) that can be used in making more soap. All of the manufactured shampoos that I tested are perfectly fine. The pH of all of the shampoos is correct, and none of the shampoos should stop being marketed.	
<b>Summary Statement</b> I made and tested various types of soaps and many other ingredients that make up soap.	
<b>Help Received</b> I used Ribet Academy's chemistry lab	