



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Jacob M. Noblett	Project Number J0213
Project Title What Type of Motor Oil Will Cause the Least Amount of Friction?	
Abstract Objectives/Goals This project is being done to test which engines oils cause the least amount of friction. The reason I chose this project is to learn which oils are better for cars. Is synthetic really the best or is high mileage better for older cars as well as new cars. Methods/Materials The oils being used are all 20W-50-multi grade motor oil. One each of synthetic, standard and high mileage. To test the drag caused by friction we built a sheet metal slide, reinforced it with 48 inches aluminum flat stock, and held it up with a few 14 inches long threaded rods. A hinged landing on the top is where we will place the 3 brass freeze plugs, which weigh 33.6 grams. So to start them I just lift the lever on top and record the results. Results To get the most accurate results I did two kinds of tests. One was cold, just apply the oil and let go, the other was a warm test. I put a heat lamp under the track and waited 30 minutes for it to heat the track. Once it is fully heated I continued the normal procedure. The results were: Warm tests - Synthetic 36 inches, High Mileage 36 inches, Standard 34inches. Cold test - Synthetic 36 inches, Standard 35 inches, High Mileage 34 inches. Conclusions/Discussion The averages in both (warm & cold test) were: Synthetic 36 inches, High Mileage 35 inches, Standard 34 1/2 inches. So my conclusion is that Synthetic is over all the best, after that is High Mileage, and last is Standard.	
Summary Statement My project is meant to determine which motor oil will cause the least amount of friction.	
Help Received Grandpa drilled holes for slide. Grandma picked up parts and supplies.	