



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Eddie Martinez	Project Number J1921
Project Title Oil Viscosity and Flow	
Objectives/Goals Which motor oil has the best viscosity and flow under different temperature conditions? After going through a blind test, by looking at the color of the oils and how they flow, I would say that the better brand of motor oil would have to be Quaker State. It has a color that's in between light and dark and has a descent flow.	
Abstract	
Methods/Materials # 30w Motor Oils-Napa, Castrol, Quaker State, Valvoline, Pennzoil # A metal track (24#-12# metal sheet, wood, screws, glue) # Small plastic top wares (at least 8) # Tape # Temperature Laser Gun # 2 Heating Pads (miniature stove) # Freezer # Color marker, or pen # Ruler # Protractor # Paper towels # Droppers (1ml) # Beaker # 80ml (glass cup) # Stopwatch	
Results 1ST TEST- Castrol 1:03:35 Napa 00:44:91 Pennzoil 1:27:36 Quaker State 1:03:28 Valvoline 1:22:35 2ND TEST- heated up to 212 degrees (100 degrees C) Castrol 00:28:29 Napa 00:06:63 Pennzoil 00:28:43 Quaker State 00:04:38 Valvoline 00:05:22 3RD TEST- cooled down to 32 degrees F. (0 degrees C) Castrol 01:04:32 Napa 01:10:76 Pennzoil 01:38:49 Quaker State 01:33:39 Valvoline 01:24:22	
Conclusions/Discussion All motor oils are not the same, even though it might look like they are, theres a slight difference which was proven by my tests. Over all, the better motor oil that would work best, in all these type of weather conditions would be Napa motor oil. The worst or not so good motor oil would be Pennzoil motor oil. After finding this out, my hypothesis was proved wrong.	
Summary Statement Out of five different 30w motor oils, which one has the better viscosity and flow under different temperature conditions.	
Help Received Mr. Minton helped with the idea of this project ; Bob, a friend helped with suggestions ; Cousin helped build and run my experiments ; Mom helped take me to stores ; NAPA, HOME DEPOT, RITE AID, OFFICE DEPOT, provided me with materials	