



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Todd A. Nugent	Project Number J2225
Project Title "Punked" at the Pump: Are You Getting the Most Bang for Your Buck When You Buy a Gallon of Gas?	
Abstract Objectives/Goals With gas prices on the rise, and consumer confidence at an all time low, I felt it was important to find out if we are getting what we pay for at the gas pump. My research showed that it is harder for independent gas stations to make a profit compared to corporate owned station. My hypothesis speculates that independent stations, on average, take advantage of allowable variances in a gallon of gas. My goal is to pay for exactly one gallon of gas as my control. I will test 20 pumps at local stations; 10 independent and 10 corporate. I will measure weight, height, the temperature of the gas, the temperature of the outside air, and the time of day sampled which plays affecter in my experiment. My objective is to accurately test my hypothesis through comparative sampling. Methods/Materials Method: Arrive at gas Pump Island at exact same time and record time and temperature. Take picture of advertised price and picture of station. Record information of station (I.E. Name, Address, Phone). Grab petty cash out of pouch. Go into the gas station and pay for exactly one gallon of gas for pump one and ask for receipt. Put receipt in petty cash pouch. Return to gas pump. Take a picture of gas pump before pumping. Put gloves on before pumping. Place gas can on the ground. Pump exactly one gallon of gas at gas pump. Mark with a sharpie to indicate pump and can relation. Take a picture of the pump after gas has been received. Weigh on digital scale. Record results. Materials: Thermometer, cell phone (Satellite Watch), digital camera, digital scale, four one gallon plastic gasoline containers, petty cash, marker, scotch tape, pen, notebook, pencil, car, gas pump. Results My results did not prove my hypothesis. In fact, in my test group the independent stations dispensed slightly more gas, on average, than corporate stations. Although the other variables in my test were calculated, graphed, and recorded, they did not seem to have a large enough impact on the results to be note worthy. Conclusions/Discussion My test group showed that gas pumps are accurate most of the time and dispense gas within the allowable ranges set by the department of weights and measures. Independent or corporate ownership does not seem to be a factor at this time. This is not to say that regular inspection should not be carried out.	
Summary Statement My project compared corporate and independent gas pumps to determine whether there was a detectable trend in the accuracy in the amount of gas dispensed.	
Help Received Department of Weights and Measures checked my equipment for calibration. Dad helped type report. Parents supervised testing.	