



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Jonathan P. Schrantz	Project Number J0236
Project Title Derby Cars: How to Ace the Race	
Objectives/Goals This project was designed to determine what car shape with various weights goes the fastest. The hypothesis is that small, heavily weighted cars go the fastest.	
Abstract Methods/Materials Three unique car shapes were made. One car was shaped like a rectangular brick. Another car was aerodynamically shaped like a brick with sanded edges and a dome top. The third car was shaped like a plate and was small, perfectly flat, and had sanded edges. The cars went down a ramp and up another side and the Delta H was recorded. Delta H is the height the car started at minus its highest height on the other side. The lower the Delta H, the farther up the ramp the cars went. The cars were tested with different weights. They were tested with no weight, 42.85 grams of additional weight, and 85.7 grams of additional weight. Ten tests were done with each car with each amount of weight. Therefore there were 90 total tests. The car axles were polished to reduce the amount of friction. They were also lubricated before each set of testing to reduce friction.	
Results According to the laws of physics the small plate like shaped car with the most amount of weights should go the fastest. The laws of physics were shown to be true and the small aerodynamic car with the most amounts of weights went the fastest.	
Conclusions/Discussion Derby cars that are streamlined and have greater mass go faster than any type of cars.	
Summary Statement This project was designed to determine what derby car shape with various weights goes the fastest.	
Help Received Father helped with project set-up	