



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Xavier J. Prochaska</b>	<b>Project Number</b> <b>J0120</b>
<b>Project Title</b> <b>Air Resistance: What a Drag! Does the Shape of a Car Affect the Amount of Air Resistance?</b>	
<b>Objectives/Goals</b> My objective was to determine if the shape of a model car effects the amount of air resistance it experiences. I believe that the smallest car will experience the least air resistance.	
<b>Abstract</b>	
<b>Methods/Materials</b> To do this I built a wind tunnel and three model cars because wind tunnel provide controlled air flows. Three model cars were made, one was found online with instructions. Two cars I made myself. All were made out of card stock. One wind tunnel was built of plexiglass and 1,848 straws. I had a video camera to film the experiment and a book tied to a rock to keep the car still. I used a ruler to measure the distance of the cars and a balance to keep the cars masses the same plus one fan to provide airflow. I would take a video of each car, measure time and distance to get speed, to acceleration to air resistance.	
<b>Results</b> The smallest car experienced the least amount of air resistance and the cars with the medium and big surface areas experienced about the same amount of air resistance.	
<b>Conclusions/Discussion</b> My conclusions are that a car with a smaller surface area will experience less air resistance then bigger cars, so smaller cars don't burn as much gas. Another conclusion is that surface area is not the only key to air resistance. My guess for why the medium and big cars experienced the same amount of air resistance is the force turbulence. More turbulence means more air resistance so if the turbulence is different then the two cars could experience similar air resistance.	
<b>Summary Statement</b> I built a wind tunnel and three model cars out of card stock to find out if their shape effects the amount of air resistance experienced.	
<b>Help Received</b> Dad helped learn about topic and revised my report. Mom helped put board and wind tunnel together. Dad helped with distance estimations. Teacher revised report.	