



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Colleen Loree F. Avila	Project Number S0101
Project Title Aerodynamic Airfoils, Phase 2	
Objectives/Goals My objective for this project was to identify which of the custom made airfoils is the most aerodynamic when tested for drag within a wind tunnel at various wind speeds.	
Methods/Materials The material I used to make the airfoils was balsa wood, because it is light weight and easy to cut. I tested the twelve airfoils by suspending them in a wind tunnel with a balance, and then connecting them to the drag scale with fishing wire and paper clips. The airfoils were connected to the balance with a steel rod so that it would not pivot up and down, but only back and forth.	
Results The results I received after conducting this experiment was that Airfoil #4 was the most aerodynamic with an average drag of 2.17 grams and a maximum drag of 7 grams at 3200 feet per minute. Airfoil #1 came in second with an average drag of 2.67 grams and a maximum drag of 9 grams at 3200 feet per minute. Airfoils #5 and #9 came in last with average drags of 14.33 grams.	
Conclusions/Discussion In conclusion, my hypothesis was incorrect. Airfoil #1 came in second, and not in first as I had predicted. Airfoil #4 proved to be most aerodynamic of the twelve airfoils tested. This may be due to various factors (ex. mass). My objective and goals for this experiment were fulfilled. The information I have obtained in Phase 2 will work with Phase 1 in the future to create a complete model of an airplane or rocket to expand my knowledge of aerodynamics and physics.	
Summary Statement To determine which custom made airfoil is most aerodynamic when tested for drag within a wind tunnel at various wind speeds.	
Help Received Mr. Schultz helped test and make the airfoils; Used wind tunnel at Centennial High under the supervision of Mr. Kaura	