



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Sarah M. Penicks	Project Number S0106
Project Title Got Thrust? Got Lift? Got Aerodynamics?	
Abstract Objectives/Goals To launch three rockets three times, each will have a different fin material (balsa wood, plastic, cork) to see which one will have superior aerodynamics, as well as, greater altitude achieved. Methods/Materials I used three Estes Wizard kits, each rocket was the same in weight, shape, and size the only difference is each rocket has a different material for fin(cork, balsa wood,plastic.) I used epoxy glue and #400-600 grit sanding paper. After each rocket was assembled three colors of spray paint was used to identify them. I launched each rocket three times each with B6-4 engine. Using an altitude tracker I calculated how far each rocket flew. Results In the first launch, the balsa wood finned rocket traveled the highest at an altitude of 550 feet;the plastic finned rocket came in second with an altitude of 400 feet;the cork finned rocket came in last with the altitude of 300 feet. For the second set of rocket launches, the balsa wood finned rocket again came in first with an altitude of 450 feet;the plastic finned rocket came in a close second at 400 feet;the cork finned rocket finished last with an altitude of 350 feet.The last cycle of rocket launches confirmed the findings from the other two launches. The wooden finned rocket again flew the highest at an altitude of 550 feet;the plastic finned rocket finished second with an altitude of 500 feet. Finally, the cork finned rocket flew into last place with an altitude of 350 feet. Conclusions/Discussion In conclusion after conducting the experiment of launching each rocket three times, I have concluded that the balsa wood rocket has superior aerodynamic quality then other materials. Followed by the plastic finned rocket,then the cork finned rocket.	
Summary Statement To launch three rockets three times, each will have a different fin material (balsa wood, plastic, cork) to see which one will have superior aerodynamics, as well as, greater altitude achieved.	
Help Received Shannon Penicks (mother)helped display board; William Penicks(father)helped make display board;Major Philip Laisure for being adult supervisor; L.D.R.S. (Large Dangerous Rocket Ships) for allowing my to launch my rockets.	