



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Alison R. Boaz</b>	<b>Project Number</b> <b>J0106</b>
<b>Project Title</b> <b>Rocket Fins</b>	
<b>Objectives/Goals</b> My objective is to learn if rockets with larger or smaller fins fly the highest and are the most stable.	
<b>Abstract</b> <b>Methods/Materials</b> The materials I used were: Balsa Wood, 8 Viking Rocket Kits, Wood Glue, Sandpaper, Scissors, Spray Paint, Spray-On Primer, Gorilla Glue, Tape Measure, X-Acto Knife, Short Piece of Wood, 2 Small Pieces of ABS Pipe, Protractor, String, Heavy Washer, Double-Sided Tape, Tri-Pod, A8-3 ESTES Engines.  My procedure was: 1) Cut out seven sets of three's of right angled fins from balsa wood that are .5, 1, 2, 3, 4, 5, and 8 inches in height. 2) Read all of the directions for making the Viking rocket. 3) Glue the hook to tie the shock cord on to the bottom of each nose cone. 4) Mark the three places for the fins on seven of the rockets because the first one does not have fins. 5) Glue the engine stopper 6.35 cm into each rocket on the same end that the fins are marked. 6) Glue the fins on each rocket. 7) Spray primer on the rockets, and let them dry for a couple days. 8) Sand all the nose cones to make sure they are smooth all the way around. 9) Spray primer on the nose cones, and let them dry for a couple days. 10) Glue the shock cord at least one inch into each rocket. 11) Put the streamer in each rocket. 12) Spray paint on both the rockets and the nose cones, and let it dry. 13) Load all rockets with the engines and three sheets of wadding. 14) Weigh all eight of the rockets at least twice for an accurate weight. 15) Determine the center of gravity of each rocket by balancing it on the point of two large nails hammered close together into a piece of wood. 16) Measure thirty meters out from the launch pad and place the measuring device there. 17) Fly all of the rockets at least 3 times and measure the height of each rocket. 18) Record results.	
<b>Results</b> My results were that rocket number 5 flew the highest and was the most stable.	
<b>Conclusions/Discussion</b> My conclusion is that rockets with more fin surface area below the center of gravity and little or no fin surface area above the center of gravity were the most stable and flew the highest. My hypothesis was that rocket number five would fly the highest and was correct.	
<b>Summary Statement</b> My objective is to learn if rockets with larger or smaller fins fly the highest and are the most stable.	
<b>Help Received</b> Father helped me build the measuring device; Sister helped take pictures; Mother helped take pictures	