



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> Clay Coleman; Schuyler Turrill	<b>Project Number</b> <b>S0310</b>
<b>Project Title</b> <b>Which Wind Sail Shape Is Best to Harness Wind?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Our goal was to test three different sail shapes, and find out which one is most effective at harnessing wind.</p> <p><b>Methods/Materials</b> We made a cart out of K'nex building pieces, and mounted three different types of sail to it: a square sail, a triangle sail, and a parasail. The sails were made out of plastic trash bag material, and the square sail and the triangle sail each had a mast, both made out of a balsa wood dowel. They were tested one at a time. We tested it by measuring out twelve feet from a starting line, with a mark at every foot, and then placing the cart behind the starting line. We placed an electric fan behind the cart, and turned it on. We timed how long it took for the cart to reach the five foot mark, and then saw how far the cart would go in total. We recorded both how long the cart took to reach the five foot mark and also how far it could possibly go. Each sail was tested ten times.</p> <p><b>Results</b> The results were that the parasail reached the five foot mark faster than both of the other sails, and also went a farther distance. The square sail came in second, with reasonable acceleration and reasonable distance. The triangle sail was much slower, and did not go quite as far.</p> <p><b>Conclusions/Discussion</b> Theoretically, the parasail worked the best out of all three, but practically, it would not work as well due to its uncontrollability.</p>	
<b>Summary Statement</b> Our project tests which of three sail designs harnesses the wind most effectively.	
<b>Help Received</b> Father helped with testing; mother helped with the display.	