



# CALIFORNIA STATE SCIENCE FAIR 2011 PROJECT SUMMARY

<b>Name(s)</b> <b>Matthew E. Ghilarducci</b>	<b>Project Number</b> <b>J0110</b>
<b>Project Title</b> <b>Just Wing It</b>	
<b>Objectives/Goals</b> To find out if the wing configuration of an airplane would affect the distance traveled. I predict an airplane with wings set in the neutral position will fly the farthest.	
<b>Abstract</b> To find out if the wing configuration of an airplane would affect the distance traveled. I predict an airplane with wings set in the neutral position will fly the farthest.	
<b>Methods/Materials</b> First, an airplane launcher was built using three pieces of wood, nails, thumb tacks, a rubber band, and masking tape. Second, a test plane was made to find a launch position on the launcher and this spot was marked. Third, a second plane was made out of construction paper and was stapled at the center of gravity so it would hold its shape. This plane was used for all further testing. Fourth, a ladder was set up outside and the launcher was placed on a step pointing in a slightly upward position. Fifth, the plane was placed on the launcher, pulled back against the rubber band to the marked position, and released. Sixth, the distance traveled was measured with a tape measure and logged. The following wing positions were tested 5 times each: neutral wing position, wings angled downward, wings angled upward, neutral wing position with tips folded up, and neutral wing position with tips folded down.	
<b>Results</b> Listed in order from longest to shortest distance traveled: (1) Neutral wing position with tips up (2) Neutral wing position (3) Neutral wing position with tips down (4) Wings angled upward (5) Wings angled downward	
<b>Conclusions/Discussion</b> The wing configuration did affect the distance traveled by the airplane. My prediction that the airplane with the neutral wing position would fly the farthest was wrong. The airplane with the neutral wing position with the tips up went the farthest. I think it went farthest because of the lift and stability created by this wing configuration.	
<b>Summary Statement</b> How does the wing configuration affect the distance traveled by an airplane?	
<b>Help Received</b> Matt's dad helped construct the airplane launcher by hammering the nails. He also assisted with setting up the launcher on the ladder.	