



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Hannah Ann Jack</b>	<b>Project Number</b> <b>J0116</b>
<b>Project Title</b> <b>Moving Weight and Airplane Flight</b>	
<b>Abstract</b> <b>Objectives/Goals</b> Determine if adding weight and moving it along the fuselage will change an airplane's flight distance and stall height. <b>Methods/Materials</b> METHODS: Prepare test area without wind currents(garage), test equipment - launch pad, glider, paper clip, rubber band, tape measure. Conduct flights with weight at different places on fuselage. Measure where each flight ended. Test each weight position three times and record data. MATERIALS: Balsa wood glider, rubber bands, measuring tape, ply wood launching pad, foot stool under launching pad, garage with no wind, paper clip for weight, pencil, note paper, marker, two nails, hammer, clamp. <b>Results</b> Position of weight on fuselage (flight in cm) Mean Median Range X 270 272 19 A 240 246 52 B 254 251 40 C 242 252 60 D 231 234 32 E 209 211 29 F 205 200 14 <b>Conclusions/Discussion</b> I found out: 1. Adding weight to an airplane changes the way it flies. 2. More weight caused airplane to fly shorter distances and not as high. 3. When we had weight on the nose, plane flew longest distances. When weight was toward the tail, airplane flew shorter distances. My data showed: 1. The plane flew the farthest when there was no weight on the plane. The mean distance was 270 inches. 2. As we moved the weight from the nose to the tail, the plane flew shorter distances. Mean distance when the weight was on the nose was 240 inches. Mean distance with the weight toward the tail was 205 inches.	
<b>Summary Statement</b> What effect does weight (its placement along the length of the fuselage) have on an airplane's flight distance and stall height?	
<b>Help Received</b> My dad helped me type, find information, take pictures, set up and test.	