



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jason G. Franklin</b>	<b>Project Number</b> <b>J0109</b>
<b>Project Title</b> <b>The Effect of Humidity on How Far a Baseball Travels</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My objective was to determine the affect humidity has on how far a baseball travels.</p> <p><b>Methods/Materials</b> I used a glove my hand could go into and stick through the fish tank so I could launch the balls. I used 2 different size balls, one that was approximately 1 inch in diameter and one that was approximately 3/4 inch. The smaller one was also a little heavier and denser. I used two different ball sizes so I could test if the humidity would affect a ball differently with less density or mor density. I used a humidifier with a hose attached to it to increase the level of humidity in the tank. I tested 2 different levels of humidity, 24% and 82%. I did the experiment 10 times for each ball and at each humidity level. After I launched the balls, I would put stickers on wherever the ball would hit the glass. Lastly, I measured how high the stickers were on the wall of the fish tank. Materials: 1ft x 4ft fish/reptile tank; 1 rubber glove; 1" ball; 3/4" ball (heavier density), A cooking clamp; Round different color stickers; duct tape; A tennis ball; felt fabric; Plastic sheet to seal top of tank; A 1 1/2" plastic ring; A humidifier; a hose; A hygometer to detect humidity level</p> <p><b>Results</b> After shooting Ball 1 10 times with 25% humidity, the average height where it hit on the wall of the tank came out to be 8.7 inches. I used the humidifier to raise the humidity to 82%. I repeated the test and came out to an average of 7.5 inches. I used a smaller but denser ball and I called it Ball 2. Ball 2 was easier to shoot and went further tha Ball 1. At 25% humidity, Ball 2 went almost 9 inches. At 82% humidity, Ball 2 went an average of 7.6 inches. More humidity definitely does reduce the distance the ball travels.</p> <p><b>Conclusions/Discussion</b> Humidity can affect the distance a ball travels. When there is more humidity in the air the ball tends to not go as far. With less humidity, the ball goes further. This experiment taught me that a baseball player does most of the work but not all of it. This experiment opened up a whole new way of looking at science for me. I love sports, and now I can see how science can impact sports. According to <a href="http://www.cityrating.com">www.cityrating.com</a>, the average humidity in different cities is: Jacksonville, Florida 72.5%; Phoenix, Arizona 36.5%; and Denver, Colorade 53.5%.  If I were to pick what stadium I would like to play at it would be in Phoenix. It has the lowest average humidity of all major cities.</p>	
<b>Summary Statement</b> My project is about testing how different humidities affect the distance a ball travels.	
<b>Help Received</b> Parents helped assemble tank.	