



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Keith Hines; Robert Thurman</b>	<b>Project Number</b> <b>S1106</b>
<b>Project Title</b> <b>Ballin': The Effect of Hand and Eye Dominance on a Subject's Free Throw Percentage</b>	
<b>Objectives/Goals</b> Athletes in all sports are constantly trying to find an advantage over the competition. Some athletes work hard to become better while others are naturally gifted. The purpose of the project is to test the effects of a person's hand and eye dominances on how well they can shoot free throws. Hypothesis- If the shooter has crossed hand and eye dominances then they will have a higher free throw percentage than one who has uncrossed hand and eye dominances.	
<b>Abstract</b> <b>Methods/Materials</b> First, the subject's eye dominance is tested using the Miles test: the subject focuses on a distance object, creates a triangle with their index fingers and thumbs centering the focal point, and closes one eye to see if the object moves from the center of the triangle. Then the subject states what hand is the dominant hand for free throws. After testing the subject's eye dominance, the subject shoots 10 free throws.	
<b>Results</b> The average free throw percentage for the 24 subjects with uncrossed hand and eye dominances is 27% with a standard deviation of 14%. The average free throw percentage for the 16 subjects with crossed hand and eye dominances is 34% with a standard deviation of 15%.	
<b>Conclusions/Discussion</b> The data do support the hypothesis of crossed hand and eye dominances with a total average free throw percentage of 34% have a higher free throw percentage than uncrossed hand and eye dominances with a total average free throw percentage of 27%. When the subject shoots a free throw, their dominant shooting hand covers their corresponding eye, which will cause uncrossed eye and hand dominant subjects to cover their dominant eye and leave the crossed eye and hand dominant subjects' dominant eye uncovered. The results possibly could have been affected by the technique and the athleticism of each subject. The standard deviations being so close together (14% for uncrossed dominances and 15% for crossed dominances) shows that while the athleticism could have had an effect, the free throw percentages of each subject deviated from their average free throw percentage by a simliar amount.	
<b>Summary Statement</b> The project studied the effect of eye and hand dominances on a person's free throw percentage.	
<b>Help Received</b> Mr. Hinton and Mr. Day (Desert High School PE teachers) for providing the gymnasium for testing.	