



# CALIFORNIA STATE SCIENCE FAIR 2011 PROJECT SUMMARY

<b>Name(s)</b> <b>Ethan Rasmussen; Liam Scott-Curtis</b>	<b>Project Number</b> <b>J0717</b>
<b>Project Title</b> <b>A Test on Chess: Chess Perception</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective is to determine if a glass chess set or a wood chess set will allow your brain to detect more possible moves in different scenarios. Our hypothesis is that a wood chess set allows your brain to detect more possible moves because there is a greater contrast of the colors than on the glass chess set.</p> <p><b>Methods/Materials</b> One glass chess set ("Set 1"), one wood set ("Set 2"), and two recording books. 12 games were played, 6 on Set 1, 6 on Set 2, with players alternating colors. Moves thought and moves played were tallied by each player and then were converted into unit ratios. These numbers were averaged for each player in each arrangement (e.g., player 1, set 1, "white"), then averaged over both players to show a unit ratio of moves thought to moves played at each possible playing station.</p> <p><b>Results</b> Players saw more possible moves thought per move played on the Set 1 (glass) than Set 2 (wood). Playing Set 1 (glass) white had a unit ratio of 2.16 and black was 2.29. Playing Set 2 (wood), white had a unit ratio of 1.51 and black was 1.44. For Set 1 (glass), player 1 and player 2 showed big differences. Player 1 was 2.72 for white and 2.7 for black. Player 2 was 1.59 for white and 1.8 for black. For Set 2, their differences between players weren't large. Player 1 was 1.59 for white and 1.49 for black. Player 2 was 1.45 for white and 1.39 for black.</p> <p><b>Conclusions/Discussion</b> Our hypothesis was wrong. We thought it would be easier to detect more moves on Set 2 (wood), but we detected more moves on Set 1 (glass). The biggest problem is that this experiment only applies to player 1 and 2. We could have used more people to get more data with a wider variety of chess players. Our results might be useful for chess players. For example, maybe inexperienced players shouldn't choose glass because they might get overwhelmed with the number of moves thought, so there is a larger possibility that they will choose the wrong move. Experienced players might benefit from seeing more possible moves.</p>	
<b>Summary Statement</b> We used a glass and a wood chess set to study whether the brain detects more possible moves on a set with higher color contrast.	
<b>Help Received</b> Mrs. Macy helped us schedule our work; our parents drove us to each others' houses to play chess, took pictures and helped us condense our abstract for this application.	