



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> Nick J. Famiglietti	<b>Project Number</b> <b>J1210</b>
<b>Project Title</b> <b>Can a Computer Accurately Simulate Rolling Dice?</b>	
<b>Objectives/Goals</b> My question is, "Can a Computer Accurately Simulate Rolling a Dice?"	
<b>Abstract</b> <b>Methods/Materials</b> 1. Notebook, pencil or pen (to record results) 3. 1 six-sided die 4. Flat area such as tabletop minimum of 1m by 1m 5. Computer 6. Psuedo-random number generator capable of generating a random number from 1 to 6 100 times  I rolled a die and recorded the result 100 times in a table in my notebook, then went to my computer and ran the pseudo-random number generator (which generates a number from 1 to 6 100 times) and recorded those results as well. I repeated this cycle 3 times, then averaged how many times in 100 each number appeared, and created a graph with that data.	
<b>Results</b> Averages of how many times each face appeared (after 3 trials of 100 rolls each): >Human - 1: 14.3, 2: 17.6, 3: 14.3, 4: 19.3, 5: 15.3, 6: 19 >Computer - 1: 17.6, 2: 18, 3: 15.6, 4: 15, 5: 17.6, 6: 16	
<b>Conclusions/Discussion</b> If you were to plot the above data in a graph, the bars would not be the same height. But we are dealing with true randomness here, and so exact sameness doesn't occur. The numbers compensate for each other; the computer rolled 1 more than I did, but I rolled 4 more than the computer. So yes, I think that my hypothesis is correct and that a computer can accurately simulate rolling a dice. Random number generators are used all the time # they would have to be accurate. The generator I wrote is just a single example of one.	
<b>Summary Statement</b> My experiment was to find out if a computer could accurately simulate rolling one six-sided die.	
<b>Help Received</b> My mother and father helped me come up with original idea.	