



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Katherine E. Bathgate</b>	<b>Project Number</b> <b>J1203</b>
<b>Project Title</b> <b>Numbers, Numbers, Numbers</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My objective was to find out if a small population could give me the same information as a large population when collecting data. <b>Methods/Materials</b> I used a computer program to simulate card deals. One set of data simulated 100 two card throws from a reshuffled single deck of cards, and was repeated a total of 10 times. Another set of data simulated 100 two card throws from a reshuffled 5 deck set, and was repeated a total of ten times. A comparative t-test was performed among the data. <b>Results</b> 60% of the one deck tests did not meet the 0.95 confidence interval for the five deck t-tests. <b>Conclusions/Discussion</b> The smaller populations did not adequately represent the larger populations at a high confidence of t-testing.	
<b>Summary Statement</b> I am statistically trying to establish whether smaller populations of data fully represent larger populations with a computer simulation.	
<b>Help Received</b> Brother helped monitor the computer program.	