



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Eric A. Leslie	Project Number S0712
Project Title Six Tests of Computer Performance	
Objectives/Goals This project compared different processor and memory sub-systems, to deduce the most efficient test procedure.	
Abstract Methods/Materials A wide range of computers were examined in the twenty three computers I tested; from x486 chips to dual processor servers. I used the program SiSoftSandra Professional to measure 6 aspects of a computer's performance. The six tests are: Integer MMX Memory Bandwidth Floating FPU Memory Bandwidth Integer iSSE CPU Multimedia Float SSE CPU Multimedia CPU Arithmetic Dhrystone ALU (MIPS) CPU Arithmetic Whetstone FPU (Mflops)	
Results The AMD chips tended to provide superior performance at equivalent clock speeds. Processor speed, the most commonly advertised aspect of a computer, by itself is not a complete indicator of overall computer performance. I compared the results of the six tests on the twenty three computers and found that three of the tests were highly correlated with the other three tests (All correlation coefficients greater than .96).	
Conclusions/Discussion In general, the more modern chips with faster CPU frequencies excelled in most testing situations. However, I found that only three tests of the six were required to completely measure computer performance; three tests were found to be redundant.	
Summary Statement Six different ways of measuring computer performance were used on twenty three computers, and the results showed only three of the tests were required.	
Help Received Access to a Variety of computers at San Dieguito Academy, Trex Enterprises Corporation, and several households.	