



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) John Dickerson; Michael McKenna	Project Number J1112
Project Title The Butterfly Effect	
Abstract Objectives/Goals The purpose of our project is to study and test the affect of body symmetry on athletic ability. Methods/Materials We measured 7th and 8th grade participants using a digital caliper and recorded bilateral measurements for the ear, wrist, leg and foot. When completed, we calculated the average difference away from perfect symmetry for each person so that they could be measured on a uniform #symmetry scale#. We then put each participant through a series of athletic tests, according to the SPARQ method (Speed, Power, Agility, Reaction and Quickness). Participant results were recorded in the 40 yard dash, the vertical jump, the powerball toss, the 20 yard shuttle run, keyboard finger reaction and finally 30 second stepovers. The range of results was calculated and each participant was evaluated along the scale as well as in relation to their symmetry measurement. Results Those with the smallest symmetry index (the most symmetrical) indeed exhibit faster running times, longer strength tosses and quicker reaction times. Interestingly, our participant population did not have a large variation away from perfect symmetry, but there was a large range of athletic ability exhibited. Conclusions/Discussion Studies over time have shown that elite athletes indeed have more symmetrical bodies and exhibit superior athletic ability to those with less symmetrical bodies, and our results indicate the same. The data we gathered through the SPARQ tests shows a strong correlation between a higher degree of body symmetry and superior performance on specific SPARQ tests for athleticism. While our results speak loudly in support of our hypothesis, it should be noted that other factors seem to impact athletic talent, such as genetics, general health and academic prowess.	
Summary Statement Our project investigates the correlation between body symmetry and athletic ability.	
Help Received Parents helped to "glue" paper to board.	