



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Michael G. Russell	Project Number J1321
Project Title Are Fingerprint Patterns Similar in Twins?	
Abstract Objectives/Goals This researcher's goal is to discover if the fingerprint patterns of twins are similar or different. If it is determined that there is a similarity in the fingerprint patterns of twins, is the similarity greater than that of non-twin siblings? Methods/Materials Materials: black ink pad, white unlined note cards, hand-held magnifying glass Procedures: (1) Obtain the fingerprints of 15 sets of twins and 15 sets of non-twin siblings; (2) Analyze the fingerprints with a hand-held magnifying glass Results This researcher's hypothesis stated that 85-90% of the twins tested would have at least a 60% similarity rate (that is, three out of five prints), compared to only 65-70% of the non-twin siblings tested. The results of this experiment show that only 80% of the twins tested have at least a 60% similarity rate, compared to 73% of the non-twin siblings tested. However, when separated into two groups, identical twins have a 100% similarity rate and fraternal twins have a 73% similarity rate. Conclusions/Discussion The identical twins had an average of 4 similar prints, the fraternal twins had an average of 3.36 similar prints, the identical and fraternal twins combined had an average of 3.53 similar prints, and the non-twin siblings had an average of 3.2 similar prints. There is great similarity in the fingerprint patterns of all family members due to shared DNA, but the greatest similarity is with identical twins because they come from one egg and share all of their DNA.	
Summary Statement Twins have a greater similarity in their fingerprint patterns than non-twin siblings, but only when identical twins and fraternal twins are combined together.	
Help Received My mom helped with the editing and typing of my project.	