



# CALIFORNIA STATE SCIENCE FAIR 2013 PROJECT SUMMARY

<b>Name(s)</b> <b>Jasmine M. Shapiro</b>	<b>Project Number</b> <b>J1222</b>
<b>Project Title</b> <b>Fingerprints: Similarities in Families</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective was to find out if fingerprints have more of a correlation between parents and their children or siblings and each other. Hypothesis: They are more similar between siblings because of the greater DNA similarity</p> <p><b>Methods/Materials</b> The first step is to ensure that you have all materials. Then you must enlist 20-25 families with at least 2 children. Each of those families must sign a permission form. The experimenter must open the ink pad, roll the subjects right and left index fingers onto the ink pad, and then roll the fingers on the paper. The experimenter then must write the subject's code (number code for family, and letter code for members) next to his/her fingerprints. Then, you must look for similar patterns and distinguishing characteristics. After fingerprinting members of all families, determine how many of the children's fingerprints are more similar to their parents' and how many are more similar to their siblings. Draw a conclusion from the experiment stating if your hypothesis is correct or incorrect. Lastly, at the end of all experiments fingerprints will be shredded, so that you aren't keeping any other peoples' personal information. Materials: 1 Lee Fingerprint Ink Pad, Magnifying glass, Wipes, White paper, Permission forms.</p> <p><b>Results</b> 24 families were tested all of which consisted of a mother a father and between two and four children. 11 people had the same similarity to their parents as their siblings. 15 people had more similarity to their parents than their siblings. 27 people had more of a similarity to siblings than parents. I also wanted to see if it was a matter of gender. For example, if a son had more of a similar fingerprint to his father than his mother. 9 people proved that it was a matter of gender, and 3 people showed no correlation.</p> <p><b>Conclusions/Discussion</b> After examining the data, it proved my hypothesis correct. There was more of a similarity between siblings than between parents are their children. The reason I came up with this hypothesis is because siblings share more of the same DNA with each other. Some siblings might have more DNA and similarity to one parent than the other, when siblings share DNA from both parents. Although this was not part of my hypothesis, after seeing patterns in my data, I was able to tell that it was also a matter of gender.</p>	
<b>Summary Statement</b> My project is about fingerprints and whether there is more of a similarity between parents and their children and siblings and each other.	
<b>Help Received</b> Parents helped drive to homes; Subjects provided data for project; Teacher provided guidance; Police Officer answered interview questions	