CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J1206

Project Title
Are Fingerprints Inherited?

Abstract

Objectives/Goals
The objective of my project is to determine if finger print patterns can be inherited. I believe that since every finger print is different, the patterns must be different too.

Methods/Materials
In this project I took 25 pairs of siblings, 25 pairs of non-related siblings, and 5 pairs of half related sibling's finger prints (a total of 110 subjects). I used an LEE Finger Print Pad to get my data. To get it I rolled their left index finger and thumb in the ink and placed it on a white sheet of paper which resulted in a clear finger print. Once I finished getting my test subjects prints, I created a chart that compared each pair of siblings. Then I wrote yes or no if they matched.

Results
In the end my data showed clearly that finger prints are inherited. As a control, I took random subjects and compared their finger prints. My data showed that 16 out of the 25 siblings matched, leaving 9 that didn't, and 7 out of the 25 non-related siblings matched, leaving 18 that didn#t. To be sure that my results were precise, I took 5 pairs of siblings that were half related. Their finger prints showed that they didn't match, which proves that you must have two sets of the same genes to inherit finger prints (have the same parents).

Conclusions/Discussion
My conclusion is that finger prints can be inherited. The 9 full siblings that did not match, I believe, have to do with one of the sibling's finger prints being inherited by one parent, and the other sibling inheriting the pattern from the other parent and /or the environmental conditions during pregnancy such as nutrition, blood pressure, position in the womb, and the growth rate of the fingers at the end of the first trimester.

Summary Statement
In this project, my goal was to prove if finger print patterns can be inherited between siblings.

Help Received
My mother drove me to collect subject finger prints.