



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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Project Title Which Fingerprint Pattern Is Most Common: Arch, Whorl, or Loop?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This project studied the type of fingerprint patterns that different people have. It also investigated whether the type of fingerprint was associated with different genetic characteristics. The first hypothesis was that the loop would be the most common type of fingerprint. The second hypothesis was that the proportions of different types of fingerprints would be different between different ethnic groups. The final hypothesis was that there would be differences in the proportions of the different types of fingerprints between men and women.</p> <p>Methods/Materials Each person completed a form which included their age, gender, whether or not they had attached earlobes, ability to curl their tongue, eye color, hair color, and ethnicity. Then a fingerprint of their right thumb was taken. Each person received a piece of candy after completing the form and providing their fingerprint as an incentive for participating.</p> <p>Results A total of 120 people participated. Although the loop was the most common for the entire group, it was not the most common for men. Men and women, as well as different ethnic groups had different proportions of the three different patterns. Different genetic characteristics were related to fingerprint type. Blonds were more likely to have whorls. Those with green eyes had the greatest number of people with arches. However, none of these differences were statistically different using the Chi Square test.</p> <p>Conclusions/Discussion Many crimes happen by hand. On every hand is a fingerprint, and as you know every fingerprint is as original as a persons' face. Although the differences in my study were not statistically significant, knowing some of the characteristics associated with different types of fingerprints allows profiling to begin once a fingerprint is found. This information can help forensic scientists describe a person's characteristics, but the information would not provide an exact description. Further research using a larger number of participants and investigating other genetic traits would give more useful information for investigators.</p>	
Summary Statement This project studied the type of fingerprint patterns that different people have and whether this was associated with other genetic characteristics.	
Help Received None	