



# CALIFORNIA STATE SCIENCE FAIR 2014 PROJECT SUMMARY

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<b>Project Title</b> <b>Who Dunit? Does Age and Surface Material Affect the Detection of Fingerprints?</b>	
<b>Objectives/Goals</b> The objective of my experiment was to study the effect of surface materials, such as paper, glass, wood, and metal on the detection of fingerprints. As part of my project, I also tested the effect of the age of the subjects from age groups 11-13, 40-50, and 60-70 years old on the detection of fingerprints. <b>Abstract</b> <b>Methods/Materials</b> <ol style="list-style-type: none"><li>1. Informed consent was received from 36 volunteers for fingerprinting data set.</li><li>2. Make a control sample set by taking five fingerprints from one hand using fingerprinting ink.</li><li>3. Using the fingerprint ink, take the fingerprints on glass, wood, and steel metal from the same volunteers.</li><li>4. Using the microscope app on the iPhone, record the number of ridges seen in a 2 cm circular area around the center of the fingerprint with a 2.5 x magnification.</li><li>5. Using the UV light/ flashlight at an angle will be easier for the detection of fingerprints on the glass and metal slides.</li><li>6. Document observations such as breaks in ridges, invisible ridges, spacing between ridges, blurriness of any ridges, etc. in the table.</li><li>7. Once the best surface material is found. Take 10 fingerprints from each age group of the thumb on the best surface. (Age Groups # 11-13 years, 40-50 years, and 60-70 years)</li></ol> <b>Results</b> The fingerprint data collected on glass tracked the control data taken on fingerprint paper better than that on wood and metal. The samples taken on glass consistently had the highest number of visible ridges. Compared to the 11-13 and 40-50 age groups, the 60-70 age group consistently showed lower ridges on the fingerprints. <b>Conclusions/Discussion</b> In conclusion, surface materials and age has an important role in the detection of fingerprints. Fingerprints on glass tracked the control set of fingerprints on paper, while the fingerprints from metal and wood did not. The senior age group (60-70 years) consistently showed lower number of ridges on the fingerprints, due to the loss of collagen from old age.	
<b>Summary Statement</b> My project is about the effect of surface materials and age on the detection of fingerprints.	
<b>Help Received</b> Parents helped me with resources required for the project. Mother helped gather data from different subjects. Science Teacher for her guidance and encouragement.	