CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
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Project Number
S1306

Project Title
The Effect of Surface Temperature on Fingerprint Clarity

Abstract

Objectives/Goals
The point of this experiment was to find out if fingerprints are clearer when they are lifted from a hotter or colder surface temperature. It was expected that if a fingerprint is obtained from a surface temperature of 122 degrees Fahrenheit, then it will be clearer on a scale of 1-6: 6 being the most clear and 1 being the least, than a fingerprint obtained from a surface temperature of 32 degrees Fahrenheit.

Methods/Materials
The main materials used in this experiment were 6 drinking glasses, a stainless steel bowl, ice, the hot bottom of a coffee maker, a thermometer, powdered sugar, and tape. Three of the drinking glasses were set to cold temperatures (32, 50, and 68 degrees fahrenheit) and the other three were set to warm/hot temperatures (86, 104, and 122 degrees fahrenheit), and then fingerprints were lifted off of each glass and their clarity was judged. Then, the same thing was done to a stainless steel bowl, but only one was used unlike the six drinking glasses.

Results
The fingerprints lifted off of the cold surface temperatures were clearer. Two of the colder surface temperatures (32 and 50 degrees Fahrenheit) had a higher average clarity rating than the hotter temperatures. These results are the same on both glass and stainless steel.

Conclusions/Discussion
The conclusion is that the fingerprints lifted off of the colder surface temperatures were clearer than the ones lifted off of the hotter temperatures because the heat of the hotter temperatures evaporates the oil and water in the fingerprints. This information can be used by officials when obtaining fingerprints at a crime scene.

Summary Statement
This project tested how surface temperature affects the clarity of a fingerprint.

Help Received
None. I conducted the experiment and did the research by myself.