



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Alyssa A. Reinhart	Project Number J0514
Project Title Comparing the Differences of Clarity of Fingerprints on the Surface of Glass in Different Temperature Environments	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine which temperature gives the clearest fingerprint on glass. My hypothesis was that the frozen glass would give a clearer fingerprint. I wanted to do this so that police officers who were searching for fingerprints at a crime scene would know where to look for the clearest fingerprints.</p> <p>Methods/Materials Materials-lifting tape,dusting brush,dusting powder,30 glass jars,3 cookie sheets,3 thermometers,rubber gloves,3x5 cards,fingerprints. Methods-I heated 10 jars to 100 deg.,froze 10 jars,left 10 jars at room temp using thermometers. I placed fingerprints on all of them. I let the jars come back to room temperature again.Using lifting powder, I dusted the prints then lifted them with lifting tape & placed each on a card. I then had 4 police officers compare & judge them on a 1-10 scale. I then averaged the results to determine which temperature gave the clearest print.</p> <p>Results The best fingerprint was lifted from the glass that was at a frozen temperature of 32 degrees. The next clearest print was lifted from the glass that was at room temperature (72 degrees). The least clearest print was lifted from the glass that was at a temperature of 100 degrees.</p> <p>Conclusions/Discussion After completeing my investigation, I found that my hypothesis was correct. My hypothesis stated that the glass that was frozen would have a better effect on the fingerprints, because it wouldn't evaporate the oils and perspiration in the fingerprints. The best temperature to find fingerprints at a crime scene is the frozen temp. The second best temperature to find fingerprints at a crime scene is the room temperature (72 deg.) and the third best temperature to find fingerprints at a crime scene is the heated (100 deg). After comparing my results I came to the conclusion that police officers searching for latent fingerprints at a crime scene should first look in areas that are frozen or cold.</p>	
Summary Statement To determine which temperature gives the clearest fingerprint on glass.	
Help Received Police Officer Tom Reinhart showed me how and supervised me as I dusted and lifted the fingerprints off of the glass jars.	