



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Georgiana M. Salant	Project Number J0530
Project Title Dangerous Jewelry: Lead, the Hidden Accessory	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Last year, I read an article in the newspaper about children's jewelry sold at popular stores containing potentially harmful levels of lead. I wondered if the costume jewelry my friends and I wore might contain lead at the levels described in the newspaper article. I decided to investigate.</p> <p>Methods/Materials I looked on the Internet and purchased lead test kits. I gathered samples of my jewelry, my friends' jewelry, and new jewelry I purchased at local stores. The lead test kits were expensive, and since the jewelry would be damaged by the procedures, this somewhat impacted my sample size. Still, I was able to perform 50 tests. Approximately half of the tests were performed at the minimum time (4 hours each), and approximately half of the tests were performed at a longer evaluation time (24 hours each). Each of the jewelry pieces were tested by extracting leachable lead. The extracted solution was mixed with an indicator to determine the amount of leached lead.</p> <p>Results According to the "Lead Inspector" lead test kit results, more than half the jewelry pieces tested positive for lead. This lead test kit only reveals the concentration of the leached lead solution and not the percent composition of lead in the jewelry. The percent composition of lead in the jewelry can be many times higher than the concentration of leached lead.</p> <p>Conclusions/Discussion Although the color of the metal of many of the jewelry pieces I tested was a dull, dark brown or gray, some pieces that tested positive for lead were a bright, shiny silver. Some of the positive jewelry pieces that were found to contain lead included artificial pearl bracelets and necklaces. The pieces testing positive for lead were indistinguishable in appearance from those that did not test positive for lead.</p>	
Summary Statement This project aimed to discover whether children's costume jewelry (bracelets, necklaces, and earrings) obtained from popular jewelry stores such as "Claire's," "Target," and the "99¢ Only Store" contain lead in their composition.	
Help Received I'd like to thank my mother for her wonderful support, my science teacher for guiding me throughout my project, and my friends for donating their jewelry for testing.	