CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

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Project Number
J0906

Project Title
Are There Dangerous Levels of Lead in Local Soil?

Abstract

Objectives/Goals
The purpose of this experiment is to determine whether local soil contains dangerous levels of lead. This is significant because the results will indicate where the soil is hazardous to the health of humans, especially young children.

Methods/Materials
Soil samples were procured from several sites. Samples were tested for dangerous levels of lead using a Sensafe Soil Check Testing Kit, which produced a color scale dependent upon the amount of lead present in the sample. After testing it was determined which sites contained dangerous levels of lead.

Results
The soil by the old building and the beach sand both had the highest of all the least possible amounts of lead, 400 ppm. The colors of the samples taken from six inches below the surface were a brighter red than those taken from the surface, especially at the old building.

Conclusions/Discussion
The potting soil had little or no lead. The soil by the old building had the highest concentration of lead. While other sites had 400 ppm, the old building soil had a brighter red than the other sites, which implies that it had a higher concentration of lead than could be tested for. The soil near the gasoline station did not have the highest level, or even the second highest, because it only had approximately 200 ppm. The two sites with the highest amounts of lead were the soil by the old buildings and the sand by the beach. Although the landfill had among the lowest least possible amounts of lead, with 200 ppm, it is quite probable that there was more. Thus, it is apparent that there are high levels of lead in local soil. Dangerous levels of lead were found at the beach and the landfill, which are both places where children commonly play. These sites are public health risks, and should be cleansed of lead immediately. Also, although it is not known how dangerous the amounts of lead found at the landfill are, there should be further inspection of this because students frequently hike there. If at least 400 ppm of lead is found there, the soil should be removed and replaced with pure soil at once.

Summary Statement
Local soil was tested for dangerous levels of lead.

Help Received