CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
Ken Farris

Project Number
J0707

Project Title
Soil Superman

Abstract

Objectives/Goals
The purpose of my study is to investigate which soil type is the stiffest and supports the most compressive stress. I hypothesized soils with larger size of particles will support more stress.

Methods/Materials
In my experiment, the compressibility of five different soils was measured. I put a known amount of weight on the top of a dowel to insert into holes filled with soil.

Results
Top soil was compressed most, followed by soils with larger size of particles (vermiculite and silt). Pumice, whose particles were largest among the five, was unpredictable, and sand, whose particles were smaller, was completely uncompressible in one condition.

Conclusions/Discussion
Not only soils with larger particles were stiffer and supported stress well as I hypothesized, but so did sand due to its density.

Summary Statement
Tested stiffness of soils with different sized particles.

Help Received
Mr. James Neilson, a Ph.D. candidate in Biomolecular Science and Engineering at UCSB, guided me through experimental preparations and analyses.