CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J0706

Project Title
Is Your House Sitting on the Right Soil?

Abstract

Objectives/Goals
The objective of this project was to find out what type of soil houses should be built on. The project demonstrates how well a sand/soil can withstand a certain amount of weight for a short period of time. Our school is going through a drastic remodel, building over five new structures. As the foundations were being built, we wondered what soil/sand would be the best for supporting these new structures.

Methods/Materials
This experiment was tested by first, pouring the testing sand/soil (Top Soil, Essential Soil, Mason#s Sand, or Olympia Sand) into the testing bucket. Then the dowel was inserted through a jig and onto the soil/sand. The dowel, supporting the weight, created pressure, therefore; the dowel penetrated through the sand/soil. The farther the dowel penetrated, the less able the sand/soil was to withstand pressure. The amount of weight put on the dowel and the dimensions of the dowels were changed for different tests, but there was a standard weight and a standard dowel for the tests. The materials used for this test were Top Soil, Essential Soil, Mason#s Sand, Olympia Sand, ½ inch dowel, # inch dowel, 1 inch dowel, 1 ¼ inch dowel, large bucket, and a small plastic measuring tool.

Results
Even though the Mason#s Sand withstood more pressure than the Top Soil in some of the tests, Top Soil withstood the most overall

Conclusions/Discussion
The testing concluded that the Top Soil in a dry state was the best at withstanding weight. It also concluded that the more varied particle sizes make it harder for the dowel to penetrate. Clay matter helps the particles stick together, which makes it harder for the dowel to penetrate the soil. Top Soil contains clay and varied particle size, making it the best soil to withstand pressure

Summary Statement
This project was thought up to discover the sand/soil that could withstand the most pressure, making it the best to support a heavy structure.

Help Received
Dad helped build and supervise the building of the jig; Teacher and Mom helped look over grammar in writing.