CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J0803

Project Title
Getting the Dirt on Soil: Porosity

Abstract

Objectives/Goals
My objective was to find out the effect of the type of soil on its porosity. I believe that the clay soil from my garden will have a lower porosity than sandy soil.

Methods/Materials
I prepared soil samples: 100 mL samples, five samples for each of four soils (fine sand, coarse sand, sifted clay soil, potting soil). I poured in the water, stirred the soil, waited for the water to get absorbed by the soil, and continued to add water until the soil was saturated. I recorded the amount of water added.

Results
The average amount of water held by the sample of fine sand was 39 mL; the average for coarse sand was 29 mL; the average for clay soil was 25 mL; and the average for potting soil was 36 mL. Therefore the average porosity for the fine sand was 39%, for the coarse sand 29%, for clay soil from the garden 25%, and for the potting soil 36%.

Conclusions/Discussion
My data supported my hypothesis. The clay soil from the garden had the lowest porosity and the fine sand had the highest.

Summary Statement
My project is to measure and compare the porosities of different soil types.

Help Received
My mom introduced me to the topic of my experiment, helped find resources about soil porosity, took photos, and helped me measure the water; Dad helped me make my graphs on the computer.