CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
J0202

Project Title
Keep the Noise Down!

Abstract

Objectives/Goals
The purpose of my experiment was to determine whether there was a relationship between the density of a material and the intensity of sound it blocked.

Methods/Materials
To conduct this experiment, I bought tiles of plastic, wood, glass, and stone all of the same thickness, and found their density. I then constructed a soundproof box of wood. I placed a five minute recording of a drill in one end and a sound meter on the other side. I then placed the material in between the two at a fixed distance. By turning on the tape, I was able to measure the amount of sound let through the material and calculate the amount of sound blocked out. I performed a series of four trials for each of the materials.

Results
The densest material blocked out the most sound, while the least dense materials blocked out the least sound.

Conclusions/Discussion
Using a form of statistical analysis, I was able to determine that there was a definite correlation between density and the intensity of a sound that a material blocks. This seems to suggest that denser walls are more soundproof than other walls.

Summary Statement
My project attempted to see whether there is a relationship between the density of a material and the intensity of sound it blocks

Help Received
Father helped construct the soundproof box, teacher(Mr. Francis Lee) taught me the statistics