CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
Colleen T. Boyd

Project Number
J1103

Project Title
Sound Barrier

Abstract

Objectives/Goals
Which material (paper egg carton, styrofoam egg carton, standard house insulation) absorbs sound more efficiently. I believe the styrofoam egg carton along with the house insulation will be the most efficient.

Methods/Materials
Using boxes measuring 17"x22"x22" I compared each material (paper egg carton, styrofoam egg carton and house insulation) by themselves then added house insulation to the two egg carton boxes. With speakers inside the sealed boxes I played music while recording the highest reading on the decibel meter.

Results
After comparing each material alone and with the added insulation, the styrofoam lined with the insulation gave the lowest reading on the decibel meter.

Conclusions/Discussion
The results supported my hypothesis. Egg cartons have been used for sound barriers because the different angles redirect sound. Styrofoam along with house insulation works better then paper, because the dead air space absorbs sound more efficiently than the more solid materials (like the paper). My prject concludes that if you have a sound problem you should use styrofoam egg cartons along with your house insulation to eat up unwanted sound.

Summary Statement
Which egg carton absorbs sound the best.

Help Received
My Mother helped me type report, and encouraged me. My Teacher gave me support and guidence