CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)

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Project Number

22561

Project Title

Sound Transmission through Glass

Abstract

Objectives/Goals

Our objective was to see if shape texture or tint made a differenc in the way sound was transmitted through glass.

Methods/Materials

The materials that we used to construct this project are. Plywood, Glass wool insulation, Carpet padding, Clear plastic, Bronze tint glass, Obscure glass, Gray tint glass, Reeded glass, Clear glass, Glue chip glass, Clear laminated glass, Two 12 volt power supplies, Amplipher, Microphone, Multi Meter, Oscilloscope, wood screws, 120 volt electrical outlet, Pen, Calculator, Logarithmic paper, Neoprene seal material, Electrical connectors, Staples, Wood glue, Nylon strapping, Contact cement, Electrical wire, springs, Electrical power strip, Plastic, Wood, and Elecrical tape.

The method that we used for our construction of our project is. Construct a rectangular plywood box. In the center of this box are two frames made of wood with a continuous neoprene seal on the inside of them. The next step is to cover the entire inside of the box with carpet padding and glass wool instulation including the frames. On one end of the box drill a hole to except a microphone and on the other end of the box drill a hole that will alow you to put a power cord through that will be supplying a sona alert that will be located in the center of the end of the box with the power cord.Next attach microphone cable to ampliphier and multimeter and oscilloscope,last attach power supply to ampliphier. On the other end attach the other power supply tothe sona alert. When you are ready to test turn one all of the supplies which contain a power switch to the on posithion and then conduct testing.

Results

Our test showed that Duel glazed glass was the best for keeping out sound. this is the order of the glassfrom the best for keeping out sound to the worst for keeping out sound. Duel glazed, Clear laminated, Obscure, Clear, Glue chip, Clear, Clear plastic, Gray tint, Bronze tint light, Bronze tint dark, and Reeded.

Conclusions/Discussion

Our test results showed that duel glazed glass woked the best for keeping out sound and that reeded glass was the wort for keeping out sound. We believe this because duel glazed glass is two pieces os glass with an air seal in between so we figured double the amount of sound being cut. Over all we proved that our hypothosis was correct.

Summary Statement

Does shape, texture, or tint make a difference in the way sound is transmitted through glass.

Help Received

Father helped with design and construction, friend helped with electronics and insulation, another friend helped supply parts to measure the sound, buisness helped supply glass, teacher pupplied the plastic.

Preliminary