CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)
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Project Number
J0116

Project Title
Wicked Wave Walls: The Effect of Different Types of Walls on the Distance a Wave Will Travel

Abstract

Objectives/Goals
The objective of this experiment was to test the effectiveness of various wall designs on shortening the distance a standard size wave would travel.

Methods/Materials
Wood, pulleys, water, box, brick, string. I created a pulley system that would lift a piece of wood out of a box containing water to create a standard sized wave. Using three different wall designs that I created, I was able to tell what type of wall worked the best at preventing a wave from propagating the farthest.

Results
My results proved my hypothesis to be correct. For example, the vertical wall was nearly equivalent to having no wall at all. Also, the vertical wall with holes worked a little bit better, and the vertical wall with a board at a 90 degree angle on top worked the best at stopping the wave.

Conclusions/Discussion
The vertical wall with a board at a 90 degree angle on top, worked the best at stopping a wave. If a community wanted to protect itself from large waves, the city could build this type of wall because my experiment showed that it was the most effective at stopping waves from traveling the farthest.

Summary Statement
I tested the effectiveness of different wall designs at preventing the propagation of a standard sized wave.

Help Received
I designed, built, and conducted the experiment myself, except for the wood my father helped me cut