CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
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Project Number
J0611

Project Title
Wave Stoppers

Abstract

Objectives/Goals
The objective was to determine the affect bottom contour has on the height of a wave. I wanted to try to reduce a wave as much as possible. I wanted to find a possible way to help coastal cities like New Orleans to stop big waves.

Methods/Materials
I used a plastic gutter to try to simulate a small sea or river. I put glass in part of the gutter so I could see the waves. I made a wave making machine from a small section of gutter, a piece of wood, bolts, some aluminum tubing and a piece of string. I used a rubber band to power the machine. I made four different bottoms from cement and combined them to make 6 different bottoms. I used a digital camera to video the trials then used software to stop the videos so I could measure each wave.

Results
The bottom that performed the best was a long sloped bottom. A close second was the triple hill bottom. Both bottoms reduced the waves over ninety percent. A double hill was the third best wave stopper with over eighty percent of the wave stopped.

Conclusions/Discussion
My hypothesis was wrong but I met my objective. The single hill was not the best wave stopper. A long slope was most effective. I did find that multiple hills were very effective at stopping waves. Hills would be easier to make than a very long slope. I think hills built in places that need protection from big waves, like coastal cities, could be very effective for saving lives and property.

Summary Statement
My project is about waves and the affect the bottom has on waves.

Help Received
Dad helped cut the gutter and worked the camera during the trials.