CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY

Name(s)

Madeline Manriquez

Project Number

J0915

Project Title

What Materials Last Longer in Wave Erosion?

Abstract

Objectives

The objective of my project was to see what materials would last longer in wave erosion and prevent the least erosion. For this my hypothesis was that the sand and clay mixture would last longest with the least wave erosion.

Methods

I purchased many different lengths and widths of wood, 5x eye hooks & 0.6cm, 2x medal guide rods at 63cm, and 1x plastic tub & 80cm long, 26cm wide, 14cm high. These materials were to build my wave machine that I would then use to conduct my experiment.

Results

In the beginning of my project I thought that the clay and sand mixture would prevent the least amount of erosion and last the longest. Then as I conducted my experiment with all the materials, I dropped the wood that creates the wave 20 times each round. I did this with each material, 3 times around at a 6 second interval, I found then that the sand and clay mixture did last the longest and prevented the least wave erosion.

Conclusions

Based on my data of what material last longer in wave erosion, I have come to my conclusion. I have concluded that the sand and clay mixture prevented wave erosion from happening the best. I have concluded this by coming up with my means which I did by subtracting the starting weight to the after weight of all 3 tests to all 3 mixtures, then I added them and divided by 3 to get my means. My means were, wet sand alone 125.363 grams, sand and pebbles mixture were 155.24 grams, and the sand and clay mixture were 55.83 grams. From this data my hypothesis was correct. I thought that the sand and clay mixture would hold up the best because they both stick together, and I was correct. As I was testing, it looked like the sand and pebbles were holding more and that the sand and clay was being eroded, but this turned out to be incorrect. I am very pleased with the outcome and would enjoy doing this experiment again with other materials.

Summary Statement

My project is to identify what materials would prevent wave erosion the least and last the longest.

Help Received

I designed and built the wave machine with the help of my Dad and Grandfather.