CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)
Eris D. Albert-Minckler

Project Number
J0301

Project Title
How Do Structures of Rigid Eggshells Affect Their Strengths and How Can This Be Used in Designing Temporary Shelters?

Abstract

Objectives/Goals
The purpose of my project is not only to test the strength of different rigid eggshells, but also to try to create an affordable, easy to construct, and overall better temporary home.

Methods/Materials
Three different types of eggs, emu, chicken, and quail, were tested to determine their strength against impacts of varying mass and height. Through equalizing equations and ratios the eggshell shown to be the most resilient was used as the bases for my shelter.

Results
After equalizing my data I found that the emu egg was the strongest of the three eggs. However, I chose to use the quail egg in designing my structure because it possessed more favorable attributes and was the most resilient. The quail egg when hit with a weight it couldn't withstand caved in, but was still serviceable unlike the emu egg which shattered at failure.

Conclusions/Discussion
I concluded that strength isn't the only indicator of something's durability, it is one of many. I decided to go with the quail egg because it was not only strong, but also flexible and light weight.

Summary Statement
My project focuses on using rigid eggshells as a model for creating improved temporary shelters.

Help Received
My mother was an invaluble resource of knowledge; Father helped with using excel and understanding needed equations.