CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)

Zoe Fairlie; Malika D. Gellman

Project Number

34150

Project Title

Weather or Not

Abstract

Objectives/Goals

The main question of our experiment is, what type of roofing material will keep a house coolest in the summer heat, insulates a house in the winter, insolates the best in the rain, and the warmest in ice water rain.

Methods/Materials

1.6 metal shingles, 2.2, 12"x12" pieces of sod, 3.6-10 succulents, 4.4, 13"x13"x ## pieces of wood, 5.1, 12"x12" piece of wood.

1.Get all materials; 2.Build and roof all model houses; 3.Bring houses to a temperature controlled area; 4.Bring houses to testing area; 5.Preform tests; 6.Repeat steps 3 to 5 for multiple tests.

Results

From the warm test we discovered that the tile roof kept the house the warmest. We put the tile house outside, and tested for the temperature every five minutes for up to a maximum of fifteen minutes. From the cold test we collected the results that the succulent house was the best it had the coolest temperatures while sitting in strong, direct heat for 15 minutes. After looking at are data we came to the conclusion that the grass roof would be the best in hot weather for long periods of time, and the metal roof would be the best for short periods of time. From the rain test we acquired the information that when it is raining the best choice roof would be a tile roof, because it will insulate your house the best.

In the ice water test we discovered that the metal roof would keep the house the most insulated.

Conclusions/Discussion

Our results do not support our hypothesis. We said, in our hypothesis, that the sod roof would have the warmest temperate in cold weather conditions. This was incorrect because our data shows that the tile roof would keep the house the warmest in cold weather conditions. We also said that the metal roof would keep the house the coolest in the cold test. We were mistaken. The succulent roof turned out to be the coolest house when we put the houses in heat, cold test. Then we said that the metal roof would insulate the house the most in the rain, we were proven wrong! Finally we said that the tile roof would be the keep the house the warmest in the ice water test but we were proven wrong by are results which showed that the succulent house would remain the warmest. Our results showed us that the tile (control) house would provide a much more insulated house in the rain, then any of our other model houses.

Summary Statement

We built model houses with different roofing materialsand tested the seperate houses temperature wise.

Help Received

Dad helped supervise the building of the houses