CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J1316

Project Title
Radical Roofs

Abstract

Objectives/Goals
The purpose of this project was to determine the thermal conductivity of different roofing materials. I believe that slate will have the most drastic effect on water temperature because it is the densest material.

Methods/Materials
Four 2 foot x 2 foot roofs each using a different roofing material were constructed and placed on four 2 foot x 2 foot x 3.5 inch boxes filled with water three centimeters high. The roofing material used was slate, composite, and wood. On the fourth roof, no actual material was used except for what was used under the other three roofs (tar paper and plywood). Four thermometers measured the water temperature of each box over a period of eight days. Another thermometer measured air temperature.

Results
The experiment indicated that the amount of direct sunlight on the roofing material had a larger impact than a varying roof type.

Conclusions/Discussion
My conclusion is that slate had just the same effect on water temperature as wood and composite. All roofing materials had the same effect on the water temperature.

Summary Statement
My project is about determining the difference in thermal conductivity between roofing materials.

Help Received
Father used table saw to cut wood for boxes; Father setup computer monitoring and taught me how to use software; Mother helped type report