CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY

Name(s)
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Project Number
J1106

Project Title
How to Make Your House "Green" with Landscaping

Abstract

Objectives/Goals
The purpose of this project is to investigate the relationship between landscaping and energy conservation.

Methods/Materials
I constructed a cardboard house and a tree made out of shade cloth.The deciduous tree was placed on the north side of the house.An electric thermometer was placed inside the house.A heat lamp(or sun) went through the cycle of one day(an hour),stopping and 0,45,90,135, and 180 degrees measured with a protractor.The lamp would move every 10 min. and the temperature would be take each time.I would repeat this each time placing the tree on the east,south,and west side of the house, representing summer.The process was repeated but this time the tree had no "leaves" on it,representing winter.The whole procedure was performed 5 times.

Results
The average temp. for the leaved tree on the west side was 21.24°C.The average temp. for the leaved tree on the north side was 25.32°C.The average temp. for the leaved tree on the east side was 22.4°C.The average temp. for the leaved tree on the south side was 21.92°C.The average temp. for the un-leaved tree on the west side was 23.05°C.The average temp. for the un-leaved tree on the north side was 23.56°C.The average temp. for the un-leaved tree on the east side was 24.48°C.The average temp. for the un-leaved tree on the south side was 24.88°C.Overall, the tree on the west side would conserve the most energy because it kept the house cooler in the "summer" and very close to the warmest in the "winter",reducing the use of air-conditioning and heating, saving energy and money.

Conclusions/Discussion
My hypothesis was partially supported by my results.I thought the tree on the west side of the house would keep the house cooler/warmer in the summer/winter time,but out of all the tree positions it only kept the house the coolest in the summer.The tree on the south side kept the house warmest in the winter.The tree on the south side kept the house pretty cool in the summer as well.It came in second after the west side and was off by less than 1 degree Celsius.So in all,I would plant a deciduous tree on the west side of your house to save the most energy.This project will give people the information they need learn how the can save #go green#. Anyone living in a home will be able to reduce their cost of air conditioning and heating bills. This will save you money and help save the earth at the same time, all by just planting one tree.

Summary Statement
My project imitated a house, tree, and sun to see which placement of the tree would keep the house coolest in the summer and warmest in the winter, reducing the use and cost of air-conditioning and heating.

Help Received
Science teacher edited my write-ups.