



Colorado Science and Engineering Fair

2024 Individual Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Keeping Cool: What is the Best House Color to Save on Air Conditioning?

Finalist's Name: Benjamin Knight

School and City: Corwin International Magnet School, Pueblo

Sponsor's Name: Chuck Moore

Category: Energy (ERGY)

Division: Junior (6th - 8th grades)

Abstract (250 words or less):

The purpose of this project was to find out if painting a house a certain color could help to cool the house in the summertime. I hypothesized that white paint would reflect the most sunlight coming toward a house, and by doing so, keep the house cooler than any other paint color.

The experiment involved painting five wooden boards in five different colors. I selected the colors based on my research of the most common colors to paint houses. After the paint was dry, I put the boards outside in the sunlight. I recorded their temperatures at the start of the experiment and again after 15 minutes. I used an infrared thermometer gun to measure the surface temperature of each board. I also used a thermal sensor to measure the overall object temperature of each board.

The data I collected did support my hypothesis because the temperature of the white paint fell two degrees on the infrared surface measurement, from 9° to 7° Celsius. It also dropped one degree on the thermal object measurement from 13° to 12° Celsius. This was the only paint color to have a cooler temperature on both readings, after 15 minutes.

These findings lead me to believe that white paint will keep a house coolest in the summer, therefore saving the homeowners the most on energy costs to cool their home. This finding is important for people who live in southern climates, where summers tend to be very hot.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature: Benjamin Knight

Date: 3-3-24

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. A signed copy of this form must be included in your notebook.