



Colorado Science and Engineering Fair

2025 Team 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: Insulation Investigation

Team Leader's Name: Connor Stone

Team Member 1: Evelyn Lapp

Team Member 2:

School and City: Brush Middle School, Brush

Sponsor's Name: Erik Stone

Category: Energy

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

Our project tested which combination of replacement window insulation material would be most energy efficient. Windows were replaced in our home this summer and different combinations of the insulators including vinyl fins, caulk, Butyl tape and smart trim were used on different locations around the home with assurances that they would provide sufficient insulation. The homeowner installed one window and added spray foam as an insulator feeling that typical insulators were not sufficient. Our hypothesis was that the window insulated with typical insulators and the addition of spray foam will be most energy efficient

We removed the inside window trim off 5 windows with 3 types of insulators from various locations (N, NE, SE, S) around the home. Similar sized gap's in the space between the stud and the trim were located at each location. A temperature probe was placed in each gap. Morning (6:45am) and night (9:00pm) temperature readings were taken from the probe. Temperatures from the window frame and wall around each window were measured with an infrared thermometer. Morning and night temperatures were recorded at the same times and days from outdoor weather stations. This was done for 2 weeks. We collected our data and graphed trends. Our results indicated that our hypothesis was correct, the window with spray foam was the most efficient. We would recommend the addition of spray foam insulation around replacement window installations wherever possible.

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

Team Leader's Signature: _____

Date: _____

Team Member 1's Signature: _____

Date: _____

Team Member 2's Signature: _____

Date: _____

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 your Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**