

Abstract

Project Title: Solar Heater

Project ID: 110

Introduction:

For my science fair project, I chose to build a solar air heater. The purpose of this project was to find a way to make my room, and overall my house more warm. I became interested in this project because I wanted to try something new and unique, so this experiment stood out to me. It was a way that I could learn more about solar energy while also getting to build something for myself.

Many believe that in order to help the environment, they need to make big changes to their life, but my results show a cheap, efficient way to do that right at home! Solar air heaters don't produce air pollution unlike other resources like coal. Using solar energy can have a positive effect on the environment when it replaces or reduces the use of other energy sources that have more negative effects on the environment. If society can find better ways to use this energy source, then we can do a lot of good things like eliminate pollution and even reduce the effects of climate change.

Problem Statement and Engineering Goal / Hypothesis:

The problem statement for my project was: My family needs a solar heater because I want to make my room more warm for winter. At the beginning of my experiment, I stated that if I constructed a solar air heater, it would warm the air in a cool room

Procedures: The criteria for my science project are: it should be safe for indoor use, it can't burn when touched, and it has to provide adequate heat for the room. The constraints for this project: the cost (\$50-\$135), the time it takes to make the solar air heater(6-14 days), and the multiple stores that will be needed for the purchase of the materials (home depot, art stores, and Walmart).

Results:

The problem statement for my project was: My family needs a solar heater because I want to make my room more warm for winter. My solution for this was successful because, at the beginning of my experiment, I stated that if I constructed a solar air heater, it would warm the air in a cool room. After analyzing my data, I have found this to be true. As you can see in the bar graph, the room starts off with colder temperatures around 60 degrees; however, as the days pass the room became warmer and hit its highest temperatures on the third day around the mid-80s (the highest being 87°F).

Conclusion:

The problem statement for my project was: My family needs a solar heater because I want to make my room more warm for winter. My solution for this was successful because, at the beginning of my experiment, I stated that if I constructed a solar air heater, it would warm the air in a cool room. After analyzing my data, I have found this to be true.