



CALIFORNIA STATE SCIENCE FAIR 2017 PROJECT SUMMARY

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| Name(s) Avanti S. Martinez | Project Number J0213 |
| Project Title Heat Up a Cold Room with a Solar Air Heater | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals Can I build a Homemade solar heater to heat up a room at 28 degrees Celsius without burning any fossil fuels? From my research, I formulate that my homemade solar air heater will increase the temperature of the room by 10 degrees C and be successful. I believe this heater will not only save money, but it will also decrease the usage of fossil fuels and will help the environment dramatically</p> <p>Methods/Materials The most important materials in this project include: a window, pieces of cardboard, a thermometer, tape measure, and tape</p> <p>Results According to the data I collected, within five days, the average of the outtake temperature demonstrated a higher temperature than the average of the intake temperature. Each table represents the average of the heater's daily temperature. I did this for both the intake and the outtake. I learned that the outtake temperature was higher because the energy from the sun transfer hit the absorber allowing it to consume heat and transfer this heat into the room. The outtake is where the hot air comes out and the intake is when the cool air goes out. Due to this, the temperature for the outtake vent will be sufficiently higher than the intake temperature. The heater worked the best on day 3 and 5 and heated up the room and changed temperature of the room by 10-12 degrees Celsius</p> <p>Conclusions/Discussion I proved my hypothesis correct. I was capable of building a solar air heater and increase the temperature of a room by 10 degrees Celsius and was successful. Instead of heating it up to 10, I was successful of heating the room by 12 degrees Celsius. According to the data I collected, within five days, the average of the outtake temperature demonstrated a higher temperature than the average of the intake temperature. I learned that the outtake temperature was higher because the energy from the sun transfer hit the absorber allowing it to consume heat and transfer this heat into the room. The heater worked the best on day 3 and 5 and heated up the room and changed temperature of the room by 10-12 degrees Celsius. This project helps humanity because if people were to use solar energy, we would not only save a lot of money, but it will help protect the climate, health, and help with pollution. Instead of burning fossil fuels you can do your everyday things and be warm inside your house just by using energy from the sun.</p> | |
| Summary Statement My project is about energy from the sun, and the heat collected, being transferred into a room using different techniques and materials. | |
| Help Received During the days I was at school, my mom, Ruth Martinez, helped test the intake and outtake's temperature of my heater. | |