

Abstract Project title: Sun Bathing
in Winter Project ID: 519

The reason why I conducted this project is because I thought it was important to know which solar oven can fight through the winter weather and still reach high temperatures. I thought this because some places in the world, people rely on solar ovens to cook their food or at least heat it up. Some of those places are Kenya, Rwanda, Nigeria, Chad, Algeria, Libya, Egypt, Sudan, and many more. These places might not get a lot of snow and winter weather like Michigan, but this project could still help them because if they had colder days or less sunny they would know which solar oven would work the best.

My problem was trying to figure out, what solar oven works the best and is the most efficient in winter between a pizza box oven and a cardboard box oven? My hypothesis was, I predicted that the pizza box oven would work the best because it had a layer of plastic wrap, that acted as an insulator and trapped all the heat inside the oven. I tested my hypothesis by placing both my oven outside about the same distance from the sun. From there, I went out every hour, for five hours and collected the temperatures of the ovens and recorded them on a chart. I also made sure that both the ovens were reflecting sun light the whole time and I repeated this procedure twice to make sure I was getting accurate data. The result of my project was the pizza box oven did the best and reached high temperatures of 112 degrees F, 82 degrees F, 90 degrees F, and 81 degrees F. The cardboard box oven only reached temperatures of 40 degrees F, 53 degrees F, 52 degrees F, and then stayed at 50 degrees F. So in the end, my hypothesis was supported by my testing because I predicted that the pizza box oven would do the best in winter and as a result it did the best.