CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J1232

Project Title
What Is the Effect of Duct Tape as an Insulation Material?

Abstract

Objectives/Goals
To see if the amount of layers of Duct Tape affect the cooling process of water from 93°C to room temperature, 26°C.

Methods/Materials
You need eight glass jars that hold 24 oz. with lids, at least 128 oz. of water, two rolls of Duct tape, a measuring cup that can hold 16 oz., a microwave, a stopwatch, and a thermometer with a range of 0-100 degrees Celsius. firsth you gather all materials, then you set two of the glass jars aside with no Duct tape, cover two glass jars and there lids with two layers Duct Tape, cover two glass jars and there lids with four layers Duct Tape, and cover two glass jars and there lids with eight layers Duct Tape. Next Heat water to 93°C and pour two cups into each jar. Next attach lids and put the jars in a 26°C room. Finaly check the water temperature every 10 minutes until it goes down to the room temperature.

Results
The control, the non Duct tape covered jars, cooled at an average of about 311 minutes. The 2 layers of Duct tape jars cooled at an average of about 315 minutes.The 4 layers of Duct tape jars cooled at an average of about 325 minutes.The 8 layers of Duct tape jars cooled at an average of about 330 minutes.

Conclusions/Discussion
The layers of duct tape did matter. Two layers of duct tape seemed to keep the jar warmer for about five minutes. Each layer of Duct tape rose the cooling time about 1.3% with two layers, 4.5% with four layers, and 6% with eight layers compared to the control.

Summary Statement
To see if the amount of layers of Duct Tape affect the cooling process of water from 93°C to room temperature, 26°C.

Help Received
father helped with research, teacher helped with display.