



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> Cole M. Jarvis	<b>Project Number</b> <b>J1008</b>
<b>Project Title</b> Can a Rooftop Garden Help to Keep a Building Cool?	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this project was to find out if green roofs will keep a building cool inside. The hypothesis was if one box is lined with tarpaper only, and another box is lined with tarpaper and sod, then the box with the sod will would keep the inside temperature of the box cooler. <b>Methods/Materials</b> For this experiment, the materials needed are two shoeboxes, tarpaper, sod, three thermometers, tape, scissors, and a heat lamp. One shoebox was covered in tarpaper only, which was taped on to the box. The second shoebox was covered with tarpaper and a layer of sod on top of the tarpaper. This experiment was carried out in one day. They were placed outside on concrete with a thermometer in each box, and one placed outside between the boxes. They were allowed to sit in the sun for 30 minutes and then the temperature was checked on all 3 thermometers. Temperatures were recorded. The temperatures were checked at 30-minute intervals for 4 hours. A heat lamp was set up indoors to simulate a hot, sunny day with consistent heat. The boxes were placed evenly under the lamp with the thermometers in place as they were outside. The boxes sat under the lamp for one hour. The temperature was checked and recorded. The lamp was then turned off and the temperature was checked and recorded after 15 minutes. After another 15 minutes, the temperature was checked and recorded. <b>Results</b> The box with the tarpaper only consistently had temperatures that were higher than the outside temperature. The box with tarpaper and sod consistently had temperatures that were lower than the outside temperature. <b>Conclusions/Discussion</b> The conclusion was that the hypothesis was proven correct. The box that was lined with tarpaper and sod kept the inside temperature cooler than the box that was lined with tarpaper only.	
<b>Summary Statement</b> Rooftop gardens help to keep the inside temperature of a building cooler.	
<b>Help Received</b> Mother helped to type the report, classmate helped to create the boxes	