



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Stephanie Kurniawan	Project Number J0915
Project Title How Do Plants Affect the Temperature?	
Abstract Objectives/Goals The objective of my project was to find out if plants affect the temperature in a sealed box. I think plants will lower the temperature in the box compared to the box without any plants. Methods/Materials Thermometers were placed into six acrylic boxes. Sand was poured inside the boxes to represent the soil on Earth and to level the plants. The box represents the atmosphere. A Ming Aralia plant was placed in three of the boxes and the other three were left only with sand. A thermometer was put outside as the control; this will measure the room temperature. The boxes were positioned in a sunny place and were rotated every week. Temperatures were recorded three times everyday for two weeks. These temperature recordings were then averaged at the end of each week. Results After three days of experimentation, the containers started to fog up. Some days, not all of the containers got sunlight, so I rotated Box 1 and Plant 1 with Box 3 And Plant 3 on the second week. I discovered a change in temperature appeared when there was direct sunlight. But the difference was around one to two degrees. The box without the plant was the hottest out of the three variables with an average of 20.2°. The box with plants had an average of 19.3°. The control had an average of 18.9°, which is the lowest and it#s the room temperature. Conclusions/Discussion My hypothesis is correct. If there are plants in the sealed box, the temperature is lower than if there aren#t any plants. But the change of temperature stands out when there is direct sunlight. When it#s cloudy, the temperature stays the same in all the variables and the control. The reason why the boxes with plants had a lower temperature because plants absorb the carbon dioxide when there is sun to make its food in a process called photosynthesis. The boxes with no plants are warmer because carbon dioxide molecules absorb heat energy, which gets trapped in the box and causes it to be warmer. Plants also create shade and give off water vapor through the process of respiration which also lower the temperature. My experiment also proves that deforestation can affect the earth#s temperature negatively. The trees will no longer be able to absorb the carbon dioxide from the atmosphere causing the earth to become hotter. The greenhouse effect is part of Earth#s natural balance, and we must try not disrupting it.	
Summary Statement My project shows that plants lower the temperature by absorbing carbon dioxide, a greenhouse gas, and sunlight in the process of photosynthesis.	
Help Received Parents bought materials	