



CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s) Audrey A. Lee	Project Number 22283
Project Title Effect of Light versus Gravity on Plant Growth	
Objectives/Goals My objective was to determine if light was a stronger factor than gravity to plants in growing upright. Methods/Materials I planted 3 radish seeds in each of 8 bottles, 2 of which contained control plants cloaked in total darkness, mounted on a horizontally spinning bicycle wheel. Lights were placed 90 degrees from the direction of gravity. The seeds were allowed to germinate and grow until the stem was tall enough to measure the growth angle. Results I completed three tests. The average angle for the light exposed plants was 78.5 degrees. The average angle for the control plants was 72.5 degrees. My fourth test showed that the light exposed plant angle was 80 degrees and the average of the control plants was 58 degrees. Conclusions/Discussion I observed that many of the plants were growing at the inner edge of the bottles. That forced the plants to grow alongside the bottle. I discovered that I made a mathematical mistake in calculating the magnitude of gravity the plants received. This made the angle of gravity 6 degrees instead of 66 degrees that I thought it was. This explained why the plants were growing at the inner edge of the bottles. I redid my experiment to find a better answer to my question. This time the angle of gravity was 47 degrees. I placed lights at a right angle to gravity. Between these two experiments light was a stronger factor in the direction of plant growth.	
Summary Statement My project was to discover if phototropism was a stronger factor than geotropism to plants in growing upright by using directional lighting and centrifugal force from a horizontally spinning bicycle wheel.	
Help Received Dad helped construct the experimental apparatus, Mr. Merilatt gave me guidance	