



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Kristina S. Kim	Project Number J1917
Project Title The Effect of Plant Growth in the Absence of Geotropism	
Abstract Objectives/Goals The objective of my project was to determine whether the speed in which you rotate a seed affects the direction it will grow. I believe that the constantly spun seed will grow the most twisted and abnormal because the effect of geotropism is negated. Methods/Materials I did my project by having two containers spinning constantly on a device built by k'nex, and three other containers rotated manually. One of them I rotated a quarter turn once a day, the other I rotated a quarter turn twice a day, and the third was my control to see how the plant grew normally in the container. For my project, I used ziploc containers, orthodontic rubber bands, k'nex, green foam, cotton balls, lima beans seeds, and peat moss. Results In the end, I found out that the speed does not really affect how the plant grew, but the mere fact that the plants were being rotated changed how it grew as measured against normal growth. Conclusions/Discussion With normal growth, the plants grew downward as expected. But when I rotated the seed, the plant grew differently. The end result was that the plant grew parallel to the rotating axis, which was significantly different from the control, which grew down. All the plants were distinctly different from the control in the end, though not very far set apart based on the speed in which it was rotated.	
Summary Statement My project is about how a plant will grow with less of an influence by gravity.	
Help Received Father helped explain concepts, Mother helped decorate backboard.	