



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Matthew E. Pirtle	Project Number J1526
Project Title Will Radiation from a Dental X-Ray Affect the Growth of Plants?	
Abstract Objectives/Goals Determine if radiation from a dental x-ray will effect the growth of pants. Methods/Materials Materials: 12 each pot, saucers, beans, stakes. Potting soil, water. Method: 1. Obtain all materials. 2. Get 12 pots and divide them in the groups of 4. 3. Label four pots Group A; four for Group B, four for Group C. For each Group, label the four pots 1 through 4. 4. Radiate four beans. These beans will be planted in the Group A pots. 5. Put 350 grams of soil for each pot. Put one bean in each pot (9 cm deep). 6. Put .05 liters of water in each pot. 7. Put plants near the window. 8. Water plants every other day. Rotate the plants so they get an equal amount of sunlight. 9. Monitor and record growth for each plant. 10. When the Group B plants start growing, radiate them at the same radiation levels as the beans in Group A. 11. Increase watering to .1 liters of water every other day when the plants get taller. Stake taller plants if needed Results On the 38th day (from planting to last measurement taken on January 28, 2007), the results were as follows: Ratings: Rating of 1 for POOR appearance (smaller of the plants, small or fewer leaves). Rating of 2 for AVERAGE (medium height, several, medium sized leaves). Rating of 3 for GREAT (tallest of the plants, many large, healthy leaves). The average height of the plants in GROUP A was 30.875 centimeters. The average number of leaves was 7.75. Overall appearance was rated a 2. The average height of the plants in GROUP B was 33.625 centimeters. The average number of leaves was 11.5. The overall appearance was rated a 2.5. The average height of the plants in GROUP C was 44 centimeters. The average number of leaves was 13.25. The overall appearance was rated a 2.5. Conclusions/Discussion Based on the results of my experiment, it appears that the radiation received from the dental x-ray did have a small effect on the growth of the plants. We are exposed to radiation every day. A dental x-ray exposes you to about 2 or 3 millirems (mrems). You are exposed to about 350 mrem a year from everyday things. A smoke detector exposes you to about 1 mrem per year. Even though radiation is all around us and can benefit us, we should limit our exposure. With safeguards, the amount of radiation you get from a dental x-ray is very small. It is important to note that the risks of health problems from untreated dental conditions are greater than from a dental x-ray.	
Summary Statement Determining if a dental x-ray will effect the growth of plants.	
Help Received	