



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Cameron D. Alsbrook	Project Number J1501
Project Title Radioactivity: The Effect of Shields on Beta Particles and Gamma Rays	
Abstract Objectives/Goals Shields block Beta particles and Gamma rays from reaching a point. Shields of greater density will have a greater effect on blocking the radioactivity. Methods/Materials I used a Geiger counter, Beta sample, Gamma sample, and 20 different shields. I set up the Geiger counter and read each source through the different shields. Each shield had a different thickness, mass, and was a different material. I conducted 5 trials on each shield, and then averaged the data. Results When Beta particles and Gamma rays were read through a shield with more mass, the reading was lower than if read through a shield of less mass. Also, Gamma rays were much more powerful than Beta particles. Conclusions/Discussion My results showed that my hypothesis was correct in that Beta particles and Gamma rays are blocked by shields. This effect varies with the density of the shield. However the readings varied with each trial, so the averaging of five or more times was called for. Averaging multiple trials enabled me to see a trend and draw conclusions from the data.	
Summary Statement The effectiveness of various materials in blocking Beta particles and Gamma rays.	
Help Received Used geiger counter at Ribet Academy science lab. Recieved help on operation of geiger counter from senior student.	