



CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s) Victor E. Agbayani	Project Number 35049
Project Title Does Density Affect the Speeds of Cans Rolling Down an Incline?	
Objectives/Goals How does density affect the speed of a can of food rolling down an incline? From previous experience, I knew that a can with higher density should roll faster down an incline than a can with lower density. My hypothesis was that an empty can, the least dense, would roll the fastest.	
Methods/Materials I measured the mass of each 14.5 ounce can on a postage scale to determine density. I made a wooden ramp and I rolled twelve different 14.5oz cans filled with various soups and vegetables down the ramp. I recorded the speed of the different cans.	
Results Surprisingly, the empty cans rolled the slowest, so my hypothesis was incorrect.	
Conclusions/Discussion From further research, I realized that a solid cylinder rolls more quickly than a hollow cylinder because the mass in a hollow cylinder (a hoop) is concentrated farther from its rotational axis. The hollow cylinder (the hoop) therefore has higher rotational inertia to overcome than a solid cylinder. So the hollow cylinder (the hoop) is slowest.	
Summary Statement How density affects the speed of a cylinder rolling down an incline.	
Help Received Mother helped with timing the rolling cans. I used my brother's 9th grade physics textbook.	