CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY

Name(s)
Cody C.M. Orvis

Project Number
J1015

Project Title
Gaussian Linear Accelerator

Abstract

Objectives/Goals
Demonstrate the relationship between the number of magnet stages in a Gaussian accelerator and the distance and speed a steel ball travels.

Methods/Materials
Build a Gaussian linear accelerator with one through four acceleration stages and test the distance the ball travels off of a given table height onto a box of sand below. The velocity can then be calculated.

Results
Measurements taken and plotted of number of magnet stages vs. distance and number of magnet stages vs. velocity.

Conclusions/Discussion
The relationship between magnet stages and the distance traveled and the velocity of the steel ball is linear.

Summary Statement
My project is about demonstrating the transfer of kinetic energy using neodymium magnets and steel balls.

Help Received
Skip Orvis, Mrs. Susan Singleton, Mr. Doug Modlin