



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Ryan C. Ziegler	Project Number 31212
Project Title The Effects of an Airsoft BBs Weight on Its Trajectory (Flight Path)	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal of my project was to determine how the weight of an airsoft bb affects how it flies. I believe that the heavier bbs will fall more than lighter ones in equal distances, have shorter trajectories, and scatter less than the lighter ones.</p> <p>Methods/Materials A brace to hold the airsoft gun was constructed, and bbs weighing .12g, .20g, and .25g were collected. Then a multitool with a laser and level was set in place of the gun barrel and the laser dot was marked on a target at 5 meters from the gun. Then ten .12g bbs were shot at the target. I repeated the process with .20g bbs and then again with .25g bbs. The whole process was repeated at 7.5 meters and again at 10 meters. The experiment was conducted twice with the same results.</p> <p>Results The heavier bbs had fallen over twice as much as the lighter ones at 10 meters. They also had a much tighter spread on the targets than the lighter bbs. Basically, they proved my hypothesis.</p> <p>Conclusions/Discussion From my project, I conclude that for a more powerful gun, heavier bbs are definitely preferable to the lighter ones. But at close range or with a weaker gun, the lighter ones will have an advantage. For a standard bb though, a .20g bb is a good mix of both.</p>	
Summary Statement My project was to determine how the weight of an airsoft bb affects its scatter on a target and how much it will fall from the gun at a given distance.	
Help Received Dad helped conduct experiment and chart results; Grandpa helped chart results; Mom helped take photos and worked on notebook ; Sister helped take photos; GSDSEF gave helpful advice and tips for science fair; Teacher Mrs. Hubbell helped through whole project.	