



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

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| Name(s) Ryan O. O'Connor | Project Number S0319 |
| Project Title The Effect of Golf Club Lofts on a Golf Ball's Trajectory | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals These experiments were completed to test which club head angle performed the best, resulting in a better trajectory and farther distance. The club head of a golf club is the bottom part, making contact with the ball at impact. When hitting a golf ball, to achieve maximum performance, low spin and a boring ball flight. Flight path of a golf ball is determined by the speed and direction the golfer swings the golf club at impact. If the club head is square to the target at impact, the ball will go generally straight.</p> <p>Methods/Materials The experiment was conducted at Rodger Dunn Golf Shop. The launch monitor computers generate a picture of the trajectory and statistics of the golf ball when hit. The procedures were to hit five balls with each: 8.5 degree Titleist Driver, 9.5 degree Titleist Driver, and a 10.5 degree Titleist Driver. The control was the club in the middle with the average club head loft, 9.5 degree Titleist Driver. The data was averaged and studied after the tests were done.</p> <p>Results The Titleist 8.5 Driver traveled an average total distance of 242m, the Titleist 9.5 Driver traveled a total distance average of 230m, and the Titleist 10.5 Driver traveled with an average total distance of 237m. The Titleist 8.5 Driver had a peak height average of 43m, the Titleist 9.5 Driver had an average peak height of 42m, and the Titleist 10.5 Driver had a peak height average of 45m. Overall, the Titleist 8.5 Driver traveled farther and had a low peak height. In second, the Titleist 10.5 Driver traveled with a higher peak height, yet it had a farther average distance. The Titleist 9.5 Driver had the lowest peak height average, but didn't come out with the farther distance.</p> <p>Conclusions/Discussion Looking at the overall statistics of the experiment, The Titleist 8.5 Driver had the best results with a long hit of about 255m. The control, Titleist 9.5 Driver, had solid results with a total distance average of about 230m. The 10.5 Titleist Driver had just a little better result on distance than the 9.5 Titleist Driver. Although, the 10.5 Titleist Driver traveled the highest, giving up some of its distance up, instead of out and farther.</p> | |
| Summary Statement The overall goal in this project was to obtain the optimum golf club driver degree of loft that produced the best results, meaning the farthest distance. | |
| Help Received The project was conducted at a local golf store, Rodger Dunn Golf Shop, where they allowed me to use ball tracking equipment and software to receive me data. | |