



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Carolyn A. Ewert	Project Number J0208
Project Title Does the Uniformity of a Golf Ball Affect How the Golf Ball Rolls?	
Abstract Objectives/Goals To determine if the uniformity of a golf ball and straightness of ball's roll are related and can be predicted, so that a golfer can choose a specific brand of golf ball that will roll true when puttied. Methods/Materials Five types of golf balls were evaluated. Each golf ball was first evaluated for uniformity by floating the ball in saturated salt water and noting if the balls floated randomly, or returned to the same place each time. The golf balls were then rolled on a flat surface and evaluated for straightness of roll. The ball was rolled "parallel" so that the heavy and light side would roll end over end. The ball was rolled "perpendicular" so that the heavy side rolled to one side. Three golf balls of each brand were tested, and each golf ball was rolled three times in each direction. All the information was put on the data sheet. Results The Titleist DT was moderately uniform and placed 5th in the rolling test. The Title HVC had the worst uniformity and placed 4th in the rolling test. The Wilson True was moderately uniform but rolled the straightest. The Calloway had the best uniformity but placed 3rd in the rolling test. The Pinnacle was moderately uniform and placed 2nd in the rolling test. After evaluating the golf ball by brand, the data was sorted by order of perpendicular and parallel roll. The initial conclusion, that the Wilson True ball rolled the straightest, was confirmed by each sort. Conclusions/Discussion Many golf balls do not have a center of gravity in the geometric center of the ball, i.e. they are not uniform. None of the golf balls that were tested had a very low deviation in the roll(less than 10 inches). That is, none of the golf balls really rolled straight. No relationship could be found between a golf ball's uniformity and its rolling performance. The Wilson True appeared to roll truer than the others. I believe the roll of the golf ball was influenced by the hard surface of the bowling alley. For future study, I would try to better represent a grass surface. Floating the balls in salt water was a very effective procedure to evaluate uniformity. However, only having three categories to measure the uniformity did not provide sufficient variation to rate the uniformity.	
Summary Statement My project tried to determine if there is a relationship between a golf ball's uniformity and its rolling performance.	
Help Received Parents helped me get materials, sort data, and prepare my board. AMF Westchester Lanes let me use their bowling alley for my rolling test.	