



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Patrick Choe; Hannah Kimura; Eric Lee	Project Number J2005
Project Title How Fast Does a Tennis Ball Lose Its Bounce?	
Abstract Objectives/Goals Tennis, an elegant sport enjoyed by many people, is played with a ball and a racquet. Having two tennis players on our team, we were interested in doing a project that had tennis in it. So we came up with a question: How fast does a tennis ball lose its bounce? The majority of people that play tennis do not care about how their tennis equipment performs after a long period of use. But, in reality, it is important to know that tennis balls do lose their bounce over time, and it affects the way you play. You can get an injury called tennis elbow from playing tennis for a long time with dead balls. Methods/Materials We played many games with the test balls (new balls from a can). After every five games, we dropped the ball from three feet and measured the rebound with a yardstick and slow-motion video. Results A ball is considered dead if the rebound ratio is less than 53%. We observed that a new tennis ball has a rebound ratio of less than 53% after ten games. Conclusions/Discussion In the beginning, we thought that the ball would become dead after 30 games. We concluded that the ball became dead after 10 games. During additional research, we discovered that balls are changed after nine games in professional tennis tournaments. Although our hypothesis was proven wrong, our experiment supports this rule in professional tennis.	
Summary Statement We measured the bounce of a new tennis ball at intervals during 50 games and discovered that it becomes dead after about 10 games.	
Help Received We designed and conducted the experiment on our own. We wrote the report on our own, but had a little help from a parent to make the charts.	