



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) David A. Proctor	Project Number J1926
Project Title Tennis String Stretching	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine the amount of elastic deformation of polymers in common brands of Tennis Racket String by stretching under equal amounts of tension and measuring the length of the stretching.</p> <p>Most tennis players know that tennis string stretches and that different brands produce various amounts of spin. In my research I found another experiment that determined that Nylon string produced the most spin on a tennis ball. This project is to determine if there is a connection between the material of the string and its elasticity. My prediction is that the brand 'Forten 16 gauge' should stretch the most because it is made of pure Nylon.</p> <p>Methods/Materials 1 Racket Stringer with manual tension control. 7 different brands of tennis string 1 Metric Ruler 1 Tension Calibration Device</p> <p>Each brand of string was stretched under a constant 28.7kg of tension and measured to find the total length of stretching.</p> <p>Results Brand 'Wilson Reaction 16 gauge Multifilament' stretched the greatest amount at 1.2cm, while brand 'Max Touch Hybrid Main 17 gauge (kevlar)' stretched the least at 0.2cm. My prediction of the 'Forten 16 gauge' brand was in second place at 1cm.</p> <p>Conclusions/Discussion My hypothesis about the 'Forten' brand was not supported by my data. The 'Forten' brand was not the most or least elastic, but tied for second. This must mean that there must be other variables that determine a balls spin other than the material it is made out of. This would need to be investigated further before a conclusion about a string's performance can be made.</p>	
Summary Statement The possible connection between the elacity of tennis string and it's ability to put spin on a ball.	
Help Received My mother helped with the research and producing the board.	