



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Jonathan Krol	Project Number J1522
Project Title Standing Waves	
Objectives/Goals To study standing waves using different strings. To study the effect of tension on standing waves. To study the effect of tension on unit density of the string.	
Abstract Methods/Materials String was connected to a wave generator and extended over the pulley 2 meters apart; mass was connected to other side of the string to provide tension. Wave generator was controlled by function generator. Frequency of the function generator was adjusted to obtain standing waves. The value of the frequency for each standing wave was registered. The experiment was repeated using different values of mass and different strings. The resonance frequencies were compared with theoretically calculated values.	
Results Calculated values that included the effect of tension on the density of the string were consistently closer to experimental results than calculated values that assumed constant string density.	
Conclusions/Discussion Experiment shows that compensation for changing of string density caused by the stretch of the string improves accuracy of calculation of the resonant frequencies.	
Summary Statement Study of standing waves.	
Help Received Mr. John Shirajian, Ribet Academy Science Department Chair provided equipment and guidelines in preparation of this project.	