



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Elliott L. Kingston	Project Number J0818
Project Title Recording on a Wire	
Abstract Objectives/Goals The objective of this project was to determine the optimum conditions for the recording and play back of information when a magnetic wire was run passed a transducer. The optimum transducer (ferrite bead) would create the largest amount of voltage during playback, creating the highest quality recording. It was hypothesized that the greater the resistance of the transducer the greater the voltage generated. The hypothesis was incorrect. The optimum resistance for the transducer was 28 ohms in this project. A transducer with more or less resistance generated a smaller amount of voltage, therefore creating a lower quality recording.	
Methods/Materials Materials Digital Multimeter Transducer Wire turning appartus Procedure Create an appartus which enables one to spin magnetic wire past a transducer Vary the resistance of the transducer Record which transducer is the most effective Record Results	
Results A 3/4 inch ferrite bead with a coil of 28 ohms resistance was most effective in creating the optimum recording and playback conditions	
Conclusions/Discussion The results of my experiment proved my hypothesis to be incorrect. It was hypothesised that as the resistance of the treansducer increased the quality of the recording would also increase. After conducting the experiment the data protrays that there was an optimum resistance for the transducer, 28 ohms. If the transducer had more of less resistance the quality of the recording decreased.	
Summary Statement The purpose of my experiment was to determine the optimum conditions for storing and retrieving magnetic data stored on a steel wire,	
Help Received My father assisted me in constructing an appartus in which I was able to conduct my experiment under controlled conditions.	