



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Miles D. Head	Project Number J0907
Project Title Guitar Pickups? That's a Wrap	
Objectives/Goals I am testing to see if the number of wraps in the coil affects the volume of a pickup. I believe that as the number of wraps increases, so will the volume. My variables include the number of wraps and the volume. Some constants include strength of strum, placement of decibel meter and more. I made the pickups by winding them with a sewing machine. I fed the wire from a wood stand to the bobbin, which was attached to the side of the sewing machine with double sided carpet installation tape.	
Abstract Methods/Materials Materials: Cheap electric guitar to install test pickups on, guitar cable, guitar amplifier, decibel meter, reel of 42 AWG gauge copper wire, 3 plastic pickup bobbins, Alnico V magnets, lumber 1x2, 2x6, and 2x4, sewing machine, screws of various sizes, soldering iron and 60/40 rosin core solder, calculator, duct tape, masking tape, and carpet installation tape, clamps, and regular copper wire. I tested the pickups by putting a decibel meter in front am an amp, lifting strum machine and release. Next I recorded the volume on my record sheet. In my results as the number of wraps increased so did the volume.	
Results In my results, as the number of wraps increased so did the volume. The 5000- wrap pickup had an average of 87.6, the 6000-wrap pickup had an average of 87.7, the 7000-wrap pickup had an average of 95.1, and finally the control pickup (which I estimate to have 8000 wraps) had an average of 97.8.	
Conclusions/Discussion My hypothesis was correct because of this. I think the results of my project help anyone who wants to make their pickups louder or softer. You can also save money by doing it yourself instead of paying lots of money to guitar shops.	
Summary Statement I built and tested guitar pickups to see if the number of wraps in the coil affects the output volume.	
Help Received Parents supervised the winding of pickups, Dad supervised and assisted with soldering of pickups into the guitar.	