



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Mason E. Fordham	Project Number J0909
Project Title Effect of Coil Current on Velocity of a Model Maglev Train	
Abstract Objectives/Goals The objective of this experiment was to determine the dependence of a magnetically levitated train's velocity on the current applied to propulsion coils. Methods/Materials The method I used to record the velocity was that I videotaped a stopwatch. Then I checked the videotape for how many frames were in 1 sec. Thirty frames were in 1 second. Then I videotaped the train 5 times for each level of current. I hooked the videotape up to the television and watched the playback. I recorded the frame that the videotape was at when the train passed each mark. If the train passed the mark at a time between two frames, I interpolated. I then recorded the time, frames, and distance on an Excel spreadsheet and calculated the velocity. Results My results showed that the higher current (3 amps) caused the maglev train to go a greater distance and have a greater velocity than when lower current (2 amps) was used. Conclusions/Discussion From my graphs I determined that velocity is proportional to current, provided the current was above a threshold necessary to sustain motion past the final coil. However, more comprehensive testing is required to establish this.	
Summary Statement The effect of current in coils on the velocity of a model maglev train	
Help Received Supervision from my parents. Help from parents when I needed help carrying things or an extra set of hands. Instructions on soldering. Instructions on Excel and Power Point.	