



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Jeffrey T. Wilfong	Project Number J0736
Project Title Attraction Action	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals I will test what variables of an electromagnet affect the magnet's strength. I predict that the battery voltage will affect the electromagnet's strength the most. The voltage controls the electrons that go through the wire. Higher voltage will create a stronger magnetic field.</p> <p>Methods/Materials I built seven electromagnets and changed one variable on each. I created a control electromagnet to establish a base electromagnet strength. I measured the strength of the control by suspending weight from the energized magnet, and added more weight, until the electromagnet was unable to hold the weight. I then changed variables to determine how each would affect the strength of the electromagnet.</p> <p>Results Voltage, wire length, and core diameter all affect the strength of the electromagnet.</p> <p>Conclusions/Discussion I concluded that my hypothesis was wrong. Voltage did change the strength positively the most, but the core diameter had more of a negative effect on strength than the positive effect of the voltage.</p>	
Summary Statement What variables affect the strength of an electromagnet?	
Help Received My father helped me make the magnets and the power source. My mother helped me type my report and helped me with my graphs.	