



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Aaron E. Parker	Project Number J0999
Project Title Levitating Train	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My project was to prove or disprove if the material a levitating train is built with affect its rate of speed. I believe the material a levitating train is built with affects its rate of speed because the lighter the material, the less friction it creates thus making it travel faster and further.</p> <p>Methods/Materials I cart with wheels on the sides that can levitate on a track with magnets. The track and the cart have magnets of opposite poles which create a repulsive force that allows the cart to levitate. The wood block is placed on the levitating cart. The cart is placed at a specific point in the track. It travels freely and is timed until it hits the stop marker. This process is done five times and time is recorded after each time. Change the block on the cart to rubber and metal and repeat testing. Measure the track and calculate rate of speed.</p> <p>Results The heaviest material, in this case the metal, had the fastest average rate of speed. The second heaviest material, rubber, travels slower than the metal. The lightest material, wood, had the slowest average rate of speed. Rate of speed is calculated in centimeters per second.</p> <p>Conclusions/Discussion The heavier materials, such as metal, travel faster than lighter materials, such as wood, on a levitating track.</p>	
Summary Statement My project was to prove or disprove if the material a levitating train is built with affects its rate of speed	
Help Received Mother helped me put together my display board, conduct my testing, make my cart, and type my report. Father helped me make my cart and printing pictures and report. Ms. Shimizu helped proofreading my log book and final report and guiding me on how to do my science fair report.	