



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Bronson C. Zell	Project Number J1830
Project Title True Perpetual Motion Machines: Lessons Not Learned from The Laws of Physics	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals If a perpetual motion machine can be made then it could be used to create electricity for free? The purpose of this project is to find out if a perpetual motion machine is possible and if it could produce free electricity.</p> <p>The independent variable in this experiment was the design of the machines. The dependent variable was success rate of the machines. The control of this experiment is gravity, magnet strength, chain, bearings, spring, sprockets and wheels.</p> <p>Methods/Materials Four perpetual motion machines were made; the Overbalanced Chain, the Overbalanced Lever Wheel, the Overbalanced Magnet Wheel and the Spring Engine. Materials Needed: Overbalanced Chain: 4 inch x 18 inch plywood, (5) Screws, (5) Idler Sprocket, and a 40 inch Chain Overbalanced Lever Wheel: (8) 3 inch Strap hinges, (8) Weighted knobs, Screws, Bicycle wheel, and Wheel fork Overbalanced Magnet Wheel: Cubic inch high powered rare earth magnet, 1inch Steel Bearing Ball, 8½ inch Diameter Aluminum wheel, Aluminum stand, 1 inch wide Aluminum strap 8 ½ inch long, Stainless steel screws, (8) Brass tubes ½ inch long, Brass nuts, and Steel bolt Spring Engine: 4 inch Compression Spring, Telescoping cylinder to hold spring, Skateboard wheel, Aluminum stand, 6 inch Plastic wheel, Steel bolt and Wheel fork</p> <p>Results The purpose of this experiment was to determine if these specific perpetual motion machines are possible. The results collected from the experiment show that the perpetual motion machines involved in this experiment are not possible, so they couldn't produce energy. Research indicates the perpetual motion machines are impossible because they violate the first or second law of thermodynamics or both.</p> <p>Conclusions/Discussion According to the data collected, the hypothesis, if a perpetual motion machine can be made then it could be used to create electricity for free, appears to be not supported.</p> <p>None of the perpetual motion machines in the experiment were successful, not even one rotation was achieved. Since these experiments didn't work is not to say that can't work better, there could have been</p>	
Summary Statement If a perpetual motion machine can be made then could it be used to create electricity for free.	
Help Received My mother and father help motivate me with my research and building the devices.	