



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY**

Name(s) Kessler P. Dyche	Project Number 38163
Project Title Are Perpetual Motion Machines Possible?	
Objectives/Goals The objective of my project is to determine if perpetual motion is possible by making a machine that will rotate on its own energy. If the right amount of water is placed in each bottle then the wheel becomes unbalanced and rotates indefinitely. Abstract Methods/Materials I built a perpetual motion machine based on a version of Bhaskara's wheel using a bicycle rim, steel pipe for the frame, water bottles, zip ties, and tubing. I welded together a steel frame and bolted the bicycle rim to the top. My first attempt at making the wheel rotate was filling 8 bottles with water and attaching the bottles to the rim with zip ties. I continued to test my wheel by adding an additional bottle, changing the amounts of water, and adding salt to the water in an attempt to make the water heavier. My final attempt, I attached the bottles together with tubing so that the water would flow between each bottle. Results In each attempt I manually rotated the wheel one rotation and released to see how long the wheel would go on its own. The least successful attempt was using 9 bottles of tap water each filled with .623kg of water, which rotated one full rotation on its own. The most successful attempt was using 9 bottles of tap water each filled with .550kg of water, which made 4 full rotations on its own. Conclusions/Discussion All attempts were unsuccessful and did not support my hypothesis. I conclude that the wheel will only continue to rotate with an outside energy source. This proves the theory that perpetual motion cannot be obtained because it breaks the first and second laws of thermodynamics. The initial energy provided by manually turning the wheel will always be dispersed and will eventually stop the wheel. This means that you cannot get more energy than you put in. If perpetual motion could be proved, we would no longer have to use fossil fuels or other outside energy sources which would have a positive impact on the environment.	
Summary Statement I created a perpetual motion machine to find out if perpetual motion is possible.	
Help Received I designed and built the perpetual motion machine and my father helped me weld and assemble it.	