



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

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Project Title The Effects of Inertia, and the Potential Energy on Different Kinds of Masses, Shapes, and Dimensions	
Objectives/Goals Abstract Our experiment tests the conservation of energy, which states that energy cannot be created nor destroyed, it only changes form. Based on the researched we gathered, we predicted that the sphere would have the greatest acceleration and finish quickest, due to its greatest resistance to friction, which then leads to the least rotational kinetic energy. The results show that that the spheres are most resistant to friction, waste the least amount of rotational kinetic energy, as well as had the greatest acceleration of them all proving our hypothesis correct. The hoops had the slowest times, therefore had the slowest acceleration, and required the most amount of rotational kinetic energy. The main things we concluded out of this experiment were the following: 1. The objects that have the least amount of rotational kinetic energy will finish first, regardless of mass, size, and radii. The sphere will reach the bottom of the ramp the fastest, followed by the discs and later the hoops. 2. The higher the slope of the ramp, the bigger the translational kinetic energy (dependant on acceleration), the smaller kinetic rotational energy. Therefore the objects rolled down the higher incline will reach the bottom quicker compared to the objects rolled down from the lower incline. 3. The smaller the mass of the object of the same type, will reach the base faster than the other.	
Summary Statement This project proves least rotational kinetic energy corresponds to the fastest moving object	
Help Received all done by group members	