



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Kelly M. Kosmo	Project Number J1818
Project Title Does a Fastskin II Swimsuit Really Make a Swimmer Faster?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my experiment was to determine whether or not the friction-reducing design of the Speedo Fastskin II full body suit is truly able to increase the speed in which a swimmer travels through the water, or if this is just a marketing gimmick. I tested the speed of four different swimsuits; the Speedo Fastskin II, a standard lycra swimsuit, a bikini, and board shorts and a t-shirt. In order for my results to be accurate, I conducted an experiment which was able to eliminate all other variables besides friction; the main variable being propulsion.</p> <p>Methods/Materials 1) 50 meter pool; 2) Swimmer; 3) Three timers & someone to hold and release the swimmer; 4) Speedo Fastskin II full body swimsuit; 5) Standard lycra competition swimsuit; 6) Bikini; 7) Shorts and t-shirt; 8) Snorkel, goggles, pull buoy, swim cap; 9) Aqua scooter; 10) 3 stopwatches; 11) Rope. I did not want a swimmer's effort to affect my results. Instead I used an Aqua Scooter (a single-speed water propulsion device used by scuba divers). Prior to the start, the swimmer was held horizontally in the water with her feet on the wall and the Aqua Scooter running. By doing this I was able to eliminate any variance in the start which may have otherwise been caused by pushing off the wall with different amounts of force. I am a Junior Olympic level swimmer and have good strength and balance in the water. I practiced before-hand to be sure to keep the aqua scooter at the same depth and straight for each timing run. The pool was closed to all other users and there was no wind, so there were no currents or wakes. For each suit type I made five timing runs, each run with three stop watches.</p> <p>Results The Speedo Fastskin II full body swimsuit does indeed increase the speed in which a swimmer is able to move through the water. My results showed that the Speedo Fastskin II is 3.1% faster than the standard lycra swimsuit, 4.1% faster than the bikini, and 4.6% faster than the shorts and t-shirt.</p> <p>Conclusions/Discussion Overall, the Speedo Fastskin II full body swimsuit was the fastest out of all the suits that I tested. This was due to its design, which is made to control the flow of water over a swimmer by reducing frictional drag. My hypothesis that the Fastskin II would reduce friction and increase the speed of the swimmer was supported by these results. However, the percentage by which this occurred was greater than I had expected.</p>	
Summary Statement A swim-suit made of specialized material and a design resembling shark's skin is measurably more efficient (less drag) than a regular competitive swim-suit or human skin.	
Help Received My dad helped find and purchase the Aqua Scooter, he also held the swimmer at the start of each test. There were three helpers timing with stop watches. I received a generous donation of a Speedo FastSkin II from Competitive Aquatics Supplies and was given time to use the pool thanks to the City of Santa	