



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> <b>Aram Z. Angelo</b>	<b>Project Number</b> <b>S2401</b>
<b>Project Title</b> <b>The Amazing Gecko</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My projects purpose was to use two geckos &amp; test their vertical running time on 7 surfaces with added conditions. I added 2 more surfaces and changed the pH factor of the rain water. Various trial &amp; error methods were used to get the geckos to run up a straight line. I e-mailed Professor Autumn &amp; interviewed Dr. Yazejian, Mount Saint Mary's College. I came up with the idea of imitating tropical wind by using a blow dryer. I also made sure they didn't get tired; after three months of testing, I finished my trials with 7 trials for each surface and condition &amp; ended up with 310 trials.</p> <p><b>Methods/Materials</b> Tokay Geckos, Engineered Wood, Spring Scale, Bark, Rain &amp; Ocean Water, Leaf, gloves, Rock, Band-Aids, Glass, Running Lanes, pH Measuring Kit, Plastic, Grass (skirt), Stucco, Twine Rope, Stopwatch, Blow Dryer, Measuring Tape Before I started, I spoke with a Veterinarian to get safety approvals. I redid all my force tests, then began testing for my new project. After trial and error, I found it hard to keep my geckos to run an upward straight direction. I created a lane. The surfaces I used were engineered wood, leaf, glass, bark, rock, stucco, &amp; plastic. I added rain water &amp; ocean water to the surfaces. I put my gecko's at the bottom of the surface &amp; made them run up 6 feet.</p> <p><b>Results</b> After repeating last year's force test for consistency, I concluded that glass &amp; leaf did the best. After studying my 10 test results on 7 different surfaces with the varied conditions, On average under normal conditions, the geckos had the best running time on the engineered wood (5.59s), with the added 6.0-7.0 pH rain: glass (14.25s), with the added ocean water condition, pH 7.0-8.0 (13.9s). With all the added conditions combined, my geckos had the best running time on engineered wood (13.0s).</p> <p><b>Conclusions/Discussion</b> My hypothesis of geckos having the best vertical running time across glass opposed to other surfaces/conditions was false. My results showed that the running time of a gecko depended on the surface and its condition. Engineered wood had the best running time. With rain water, 6.0-7.0 pH, they had the best running time on rock. With rain water, 7.0-8.0 pH, my geckos had the best running time on the rock. With ocean water, with 7.0-8.0 pH, on each of the same surfaces, they had the best running time on the bark. My studies of all conditions combined on each of the 7 surfaces, engineered wood was the best result.</p>	
<b>Summary Statement</b> In 2008, I tested the adhesion force of a gecko's foot pads, and in 2009, I calculated the running time and speed of two geckos over various surfaces.	
<b>Help Received</b> Interviewed Dr. Molnar, Veterinarian for gecko safety, communicated with various professors listed in articles i read; and mom drove me around	