



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Samuel A. Villicana</b>  | <b>Project Number</b><br><b>J0329</b> |
| <b>Project Title</b><br><b>Foundations Under Us</b>   |                                       |
| <b>Abstract</b><br><b>Objectives/Goals</b><br>What I am going to do is test to see what is the best foundation of all the ones I chose which were Pier Style, Pad Style and Tri-pod Style, and how much weight will destroy them. I think that the Pier Style is the most successful, and that about 22 kilograms will destroy the foundation.<br><b>Methods/Materials</b><br>I am simply going to put bricks on top of the foundation and once it breaks I will record it, the data. I am going to use a scale, 2.4 KG bricks, notebook, pencil, camera, K'nex plastic building toys.<br><b>Results</b><br>I found out that there are many foundations, and they vary, but I chose the top three. Also, I learned that weight mainly destroys a foundation. Egyptians invented the first foundation, and we are trying to build a tower a mile high! My results are very important because this pertains to contractors who build houses, buildings, and, skyscrapers. Also, Structural Engineers, because they would design, and they could build ideas off of the Pad Style. Also building designers should stay using Pad Foundation, who knows maybe a contractor will follow my follow my ideas and results!<br><b>Conclusions/Discussion</b><br>My testable question is "What is the best type of structural foundation, and how much weight would destroy the foundation?" The answer is that the Pad Foundation was the best, and the amount of weight necessary for destruction varies was 33 Kg. The Pad foundation was very strong, the Pier Style was strong as well, but the Tripod Style was the weakest. The Pad Style was the strongest, it spread the stress out evenly on the pads. The Pier Style only had column supports, so those bent which caused the structure to collapse. The Tripod Style was very weak, with only one support column; all the weight went to the bottom and when one piece broke, it all went falling down. In conclusion, Pad Style is the best foundation out of all three styles. The weight resistance varies for all structures, but there was an average for all of them. |                                       |
| <b>Summary Statement</b><br>Finding out what is the best structural foundation.   |                                       |
| <b>Help Received</b><br>Teachers helped edit reports; Sister helped testing; Parents helped supply me board, laminations, and ink.  |                                       |