



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> Luciana M. Lopez-Aita	<b>Project Number</b> <b>J0319</b>
<b>Project Title</b> <b>Which Materials Can Best Withstand a Tsunami?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My objective in my project was to figure out which material could stand up against a simulated tsunami. My hypothesis is that the steel block will perform better than the other substances and the wood block will not.</p> <p><b>Methods/Materials</b> I used water-proof clay, wooden dowels, wooden plank, spring scale, cardboard, glue, a mass measuring scale, a tank, tap water; and blocks of wood, foam, dry foam, steel, and cardboard. First, take the mass of the blocks on the scale before performing the experiment. I attached the wooden dowels to the plank using glue and adhered the cardboard to the opposite side of the dowels. I then poked a hole at the top of the cardboard and slid the spring scale in. I then molded the clay into a slope and placed the testing materials (blocks) on the hill. I filled the tank with water and pulled the wave-making device towards the hill to create waves. Finally, take the mass of the wet blocks.</p> <p><b>Results</b> I discovered that the wooden block had the least change in dry-to-wet mass. The foam block had the largest change in mass. Also, the cardboard block was the least stable and fell into the water when the waves hit. The steel block remained motionless throughout the entire experiment.</p> <p><b>Conclusions/Discussion</b> My hypothesis was partially supported because the steel block did do the best, yet the cardboard performed the worst. The metal's high mass allowed it to not move during the entire trial. This experiment will allow people to build their homes/shelters in a tsunami-resistant material. Many citizens living in tsunami-prone areas could get to a safe place and be protected in a strong building during this natural disaster, saving many lives. Scientists could learn which material is best fit to stand up to tsunamis by using the results of this experiment.</p>	
<b>Summary Statement</b> My project is about determining which substance can best stand up to the deadly tsunami.	
<b>Help Received</b> none	