



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> Megan E. Cunningham	<b>Project Number</b> <b>J0210</b>
<b>Project Title</b> <b>Does the Amount of Water in Concrete Affect Its Strength?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My project was to determine if different amounts of water would affect the strength of concrete. I believe that there is an optimum amount of water that will make a concrete mix it's strongest.</p> <p><b>Methods/Materials</b> In my project, I used water, cement, sand, two molds, a tamper, and a hydraulic jack. I changed the amount of water but kept the amount of sand and cement the same in each of the 12 concrete mixes that I made. To test the compressive strength, I used a hydraulic jack and a steel frame.</p> <p><b>Results</b> The range of water cement ratio between 0.40 and 0.45 has shown to produce the strongest concrete.</p> <p><b>Conclusions/Discussion</b> Looking at all the data that I have collected and recorded into my data log, my hypothesis was supported. The concrete samples that had a lot of water or a small amount of water, were weaker. This information is helpful because it tells us which range of water cement ratios is going to produce the strongest concrete.</p>	
<b>Summary Statement</b> In my project, I tested to see if different amounts of water affected the strength of concrete.	
<b>Help Received</b> My mother took pictures and also helped me to put my display board together. My father was my testing supervisor. Steve Campbell of Christian Wheeler Engineering loaned me the two molds and the tamper that I used. Marathon Construction Corporation loaned me the hydraulic jack.	