



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> Alex M. DiFante	<b>Project Number</b> <b>J0209</b>
<b>Project Title</b> <b>Supporting Bridges</b>	
<b>Abstract</b> <b>Objectives/Goals</b> Does the weight on a Bridge affect the amount of shaking it endures during an earthquake. <b>Methods/Materials</b> Materials: Five Steel Wires, Solder, Flux, Butane, Butane Torch Saw, Two Bricks, Ruler, Electric Motor, Wire, Steel Bar, Drill, Drill bit, Batteries, Weights, Tape, Pencil, Paper. Procedure: Cut steel wires to length Solder wires together Drill off-center hole in bar Slide bar on motor shaft Connect wires to each motor terminal Support bridge with bricks on each end Tape on motor and battery Set 100g on bridge Put ruler up to bridge and measure from ground to bottom of bridge, record Connect wires to battery terminals to start shaking Measure Lowest and highest height, record Take off 100g, repeat with each interval of weight <b>Results</b> First trial I placed 100g on my bridge, it flexed down to 18.9cm. lowest shaking height was 18.4cm as well as the highest being 19.3cm. Second trial starting was 18.7cm the lowest shaking height was 18.3cm and the highest was 19.0cm. Third trial where I placed 200g start 18.5cm lowest shaking height was 18.1cm highest being 18.7cm. last trial 250g on bridge, 18.3cm lowest shaking height 18.0cm and the highest was 18.5cm. <b>Conclusions/Discussion</b> My hypothesis stated, If I shake a bridge with different amounts of weight on it and measure the flex, then I believe there will be less bending when there is more weight on the bridge. The data showed increased weight led to less shaking. With 100 grams there was 0.9cm of shake. With 250 grams there was 0.5cm shake. The experiment was a success proving the hypothesis.	
<b>Summary Statement</b> How does the weight on a Bridge affect the amount of shaking it endures during an earthquake.	
<b>Help Received</b> n/a	