



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

<b>Name(s)</b> <b>Kaden T. Roschuk</b>	<b>Project Number</b>  38343
<b>Project Title</b> <b>Popsicle Bridges</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The Objective of my project was to see which bridge type was able to hold the most weight, with the weight applied in the middle of the bridge. The different types of bridges tested were Beam Bridges, Warren Truss Bridges, Suspension Bridges, and simple Baseline Bridges (A Straight-line Bridge). <b>Methods/Materials</b> The materials that were used in the experiment were Popsicle sticks, wood glue, a tape measure, weights, books, heavy rocks and a scale. <b>Results</b> The results of my experiments showed that the beam bridge was the strongest of the four designs. The Beam bridge did the best due to the fact that it was able to transfer the weight directly from the point where the mass was applied to the ground through various beams. The beam bridge held an average of 105.5 kg. <b>Conclusions/Discussion</b> The Beam Bridge was the most successful design variation, holding an average of 105.5 kg. It's ability to support a heavy load was due to where the mass was being applied in relation to the location of the beams which supported the bridge. The second best was the truss bridge which supported an average of 632.25 kg. This bridge did quite well because the truss triangles were able to carry the load away from the center.	
<b>Summary Statement</b> The most effective bridge in my testing was the beam bridge, where the mass being applied is directly supported by the beams underneath.	
<b>Help Received</b> I designed the experiment and bridges by myself. My dad helped with gluing the bridges together. My science and engineering teacher helped with testing.	