



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Caitriona M. Parker</b>	<b>Project Number</b> <b>J0811</b>
<b>Project Title</b> <b>How Soil Type and Additives Affect Bearing Capacity</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of my project is to determine if adding different materials to various soil types will have an affect on the soils' overall bearing capacity. My hypothesis was that plain rocky soil will have the highest bearing capacity.</p> <p><b>Methods/Materials</b> One 5/8" dowel, a piece of plywood, a plastic tub, a Tupperware container(holding 6.8 kg/15 lbs), a 5 gallon bucket, sandy soil, clay soil, rocky soil, leaves, bark, and packing peanuts. First, I filled the plastic tub with the soil, then I set the dowel-tray on top of the soil for 1 minute. I recorded the depth that each of the four legs had sunk.</p> <p><b>Results</b> I found that rocky soil had the smallest average depth of sinkage (2.29 cm). Clay soil had the largest average depth of sinkage (7.07 cm), while sandy soil had a average depth of (6.47 cm), in the middle of the other two.</p> <p><b>Conclusions/Discussion</b> My hypothesis was proven correct. Rocky soil had the highest bearing capacity as evidenced by the lowest depth of sinkage. As a result of my study, it would appear that rocky soil or soil mixed with rocks, would strengthen the load bearing capacity of the soil at a building site.</p>	
<b>Summary Statement</b> My project is to determine if adding different materials to soil will have an effect on the soil bearing capacity.	
<b>Help Received</b> Mother helped type, Father helped collect soils.	