



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Lauryn A. Decker	Project Number S0610
Project Title Capturing CO2	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine if the concentration of a calcium hydroxide solution (limewater) affects how much carbon dioxide it can capture.</p> <p>Methods/Materials Limewater with different concentrations (0%, 25%, 50%, 75%, 100%) were placed in beakers and their initial pH level was recorded. Then, carbon dioxide was bubbled through the different concentrated limewater solutions (calcium hydroxide) and the final pH level of each was taken. Then the pH levels were converted to the concentration of the calcium hydroxide. Then, the difference between the initial and final concentrations was calculated and converted to the grams of carbon dioxide captured for each trial of each concentration.</p> <p>Results 0% limewater averaged about 4.15×10^{-8} grams while 50% limewater averaged about 8.91×10^{-2} grams. However, 100% concentrated limewater captured the most carbon dioxide averaging about 3.30×10^{-1} grams of carbon dioxide. These results prove that different concentrations of calcium hydroxide solutions affect how much carbon dioxide they can capture.</p> <p>Conclusions/Discussion These results support the hypothesis that 100% concentrated limewater would capture the most carbon dioxide. This project shows that there are many different ways to capture carbon dioxide. Therefore, this could help many organizations who are trying to capture carbon dioxide capture it more efficiently. For example, these results could be used when creating a carbon dioxide absorbing tower because it would provide the best carbon dioxide absorbent material.</p>	
Summary Statement This project determines if the concentration of a calcium hydroxide solution affects how much carbon dioxide it can capture.	
Help Received My chemistry teacher, Mrs. Reed, taught me about the calculations/procedure and provided me with the materials I needed.	