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School: Linn-Mar High School

Class: Chemistry I

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Description: My project is to have chemistry students investigate factors involved in precipitating calcium carbonate ( $\text{CaCO}_3$ ) and then predict where limestone will likely form at various locations around the world due to higher rates of  $\text{CaCO}_3$  precipitation.

Objectives/Goals: Students will learn/reinforce proper techniques for scientific investigations. Students will learn through investigation some properties affecting solubility of solids and gases. Students will also collaborate with other peer lab groups to compile and analyze results and reach a conclusion.

Implementation: In the solutions section of my chemistry class students will design an experiment to test some factors affecting solubility and precipitation of  $\text{CaCO}_3$  (like temperature, pH, agitation, etc.). Students will already have some background knowledge at this point with regards to ionic compounds and pH, and they also will have experience with precipitation reactions. Following the experiment students will combine results with other groups to analyze data and then make predictions about where limestone deposits (due to increased rates of  $\text{CaCO}_3$  precipitation) are most likely to occur.

Evaluation: Students will submit lab reports that will be evaluated based on proper lab techniques used, analysis of results for what factors affect precipitation and why, and their predictions for limestone formation as well as their explanation behind their predictions.