

# **Investigating the Effects of Sunscreen of the Marine Environment**

Priscilla Lee, Jasmine Ting, Mayeesa Rahman, and Jeffrey Yu

## **Abstract**

Research has determined that sunscreens have an adverse effect on marine environments. Sunscreens have been designed to combat water pollution, but it has yet to be demonstrated which type of sunscreen, out of the popular choices of biodegradable, traditional and water-resistant, is actually safest for the environment. Our experiment focuses on the effects of these three sunscreens on the carbon dioxide level, dissolved oxygen concentration, and pH level of oceans. We used both STEM and the scientific method to determine our results. For our study, four tanks were filled with seawater and a certain type of sunscreen was dissolved into each of three tanks. All sunscreens were 30 SPF. The fourth tank was left without sunscreen to serve as the control. For phase one of our experiment we added the sunscreen but did not do anything to agitate the water and then tested for oxygen concentration, carbon dioxide level and pH level for a period of five consecutive days. No significant differences were found between tanks for this trial. For phase two, we took measurements every 4 days over a 12-day period and repeated the same tests. Phase two revealed that biodegradable sunscreen was the best type of sunscreen for marine environments in terms of pH, carbon dioxide level and oxygen concentration. In addition, observations made during both phases of the experiment demonstrated that sunscreens also change the appearance of ocean water. Our project suggests that sunscreens contribute to both the diminished water quality and appearance of oceans.