

Shining Light On Our Plastic Problem

My Abstract:

In America we use billions of plastic bottles each year. All of those plastic bottles can take centuries to break down. I wanted to see how filtered UV rays would affect the degradation of plastic bottles. I wanted to test this because from my research I found that UV rays can break down the tough molecular bonds that form plastic. For my experiment I took three printer paper boxes and attached a UV light to one, a regular light to another and nothing to the third. Over the next four weeks I removed bottles and weighed them each week and then I tested how much weight it takes to crush them. After my experiment I found that both the UV light and regular light weakened the bottles the same. The bottles exposed to the two types of lights both required ten pounds less weight to crush them after just one week. The next week it took another five pounds less to crush them. The bottles that had no light exposure did weaken some as well. After one week it took five pounds less to crush them. I believe that the bottles in the boxes with the lights weakened the same because both were exposed to UV rays. Although my hypothesis was wrong it still shows how important it is to expose plastic bottles to light to help break them down.