



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> Aspen Emler; Josephine Ryan	<b>Project Number</b> <b>J1505</b>
<b>Project Title</b> <b>Reducing Bacteria in Lake Water</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Will the amount of bacteria colonies change based off of lighting of the environment?</p> <p><b>Methods/Materials</b> Gathered lake water and placed in different bottles. Let the bottles sit in dark or lit area for a total of 28 days. Measured bacteria colonies off of agar plates from each bottle every few days.</p> <p><b>Results</b> On day 0 the lowest number of bacteria colonies was 165 in open light bottle 1. The highest number of bacteria colonies was 900 in cove dark bottle 5. On day 7 the lowest number of bacteria colonies was 208 in open light bottle 2. The highest number of bacteria colonies was 780 in cove dark bottle 2. On day 19 the lowest number of bacteria colonies was 238 in open dark bottle 3. The highest number of bacteria colonies was 870 in open dark bottle 4. On day 21 the lowest number of bacteria colonies was 264 in open dark bottle 1. The highest number of bacteria colonies was 932 in cove dark bottle 1. On day 28 the lowest number of bacteria colonies was 357 in open dark bottle 1. The highest number of bacteria colonies was 768 in cove dark bottle 3.</p> <p><b>Conclusions/Discussion</b> Our hypothesis that the amount of bacteria colonies will increase in the light was supported. As seen in our graph, the average amount of bacteria colonies from day 0 to day 28 increased from 548.2 to 620 and 377.8 to 580.2 in the water kept in the light. Our hypothesis that the bacteria colonies will decrease in water kept in the dark was supported. Overall, the amount of bacteria colonies decreased in the water bottle kept in the dark. As seen in our graph, the number of bacteria colonies from day 0 to day 28 decreased. Our hypothesis that there will be more bacteria in cove water was supported. The cove water was sitting still and more bacteria could build up in it. On day 28, the number of bacteria colonies in cove dark was 660 and open dark was 457.2, and cove light was 620 and open light was 580.2. Therefore, it will most likely take longer to decrease the amount of bacteria if it is cove water.</p>	
<b>Summary Statement</b> The difference of bacteria colonies in lake water kept in the dark and kept in fluorescent light showed that light had more bacteria.	
<b>Help Received</b> coach helped with agar plates	