



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Joseph M. Hayward</b>	<b>Project Number</b> <b>J2010</b>
<b>Project Title</b> <b>Respiration</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this investigation was to see whether germinating corn kernels would use more oxygen respiring in the light or the dark. The hypothesis was that the plant would consume the same amount of oxygen in both conditions.</p> <p><b>Methods/Materials</b> A respirometer was set up with sprouted corn kernels and non-sprouted corn kernels as a control. First, the rate of respiration of the corn kernels in the light was observed over a time period of 38 minutes, at two minute intervals. The volume of gas, in mL, at time X was subtracted from initial volume gas in the respirometer, and the mililiters of oxygen consumed was determined. This process was repeated two more times, to reduce error. Second, the rate of respiration of the corn kernels in the dark was observed over a period of 38 minutes, at two minute intervals. The same procedure as above was followed. The process was again repeated twice.</p> <p><b>Results</b> The results showed that the average mililiters of oxygen consumed in respiration was the same for the corn kernels respiring in the light and the dark.</p> <p><b>Conclusions/Discussion</b> The hypothesis that the corn respiring in the light and the corn respiring in the dark would consume the same amount of oxygen was correct. This experiment demonstrated that the respiration process in plants does not require sunlight.</p> <p>The processes of respiration and photosynthesis in plants are vital to all living organisms. I am interested in this topic because I would like to learn more about deforestation and its connection to global warming. I would like to do further experimentation on subjects regarding various plant life and their benefits to the environment.</p>	
<b>Summary Statement</b> This project compares respiration rates in plants in the dark and in the light.	
<b>Help Received</b> My mom helped type and glue.	