



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> Anna C. Gurevich	<b>Project Number</b> <b>J2011</b>
<b>Project Title</b> <b>The Most Important Element of Photosynthesis in the Survival of a Viola tricolor hortensis (Pansy)</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this experiment was to find out which element of photosynthesis (carbon dioxide, water, or sunlight) is the most important to a plant's survival. The hypothesis was that sunlight would be the most important. <b>Methods/Materials</b> Twelve Viola tricolor hortensis plants were used (three plants in each of four groups). One group was not given water, one was not given sunlight, one was kept in an airtight box that lacked carbon dioxide, and one was the control group. <b>Results</b> The plant group deprived of water had the most significant decrease in height (100%) and increase in dead leaves (7), followed by the group without carbon dioxide (88% and 4, respectively), and then by the group deprived of sunlight (84% and 4, respectively). <b>Conclusions/Discussion</b> The conclusion of this experiment is that water is the most important element of photosynthesis to a plant's survival. Therefore, proper water management of plants will result in maximized plant growth.	
<b>Summary Statement</b> I tried to determine whether carbon dioxide, sunlight, or water was the most essential to a plant's survival.	
<b>Help Received</b> Stepfather helped with box construction, parents helped operate nitrogen cylinder flow.	