



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> Yue Xin	<b>Project Number</b> <b>J1924</b>
<b>Project Title</b> <b>Does the Color of Light (Red, Yellow, Green, Blue, Violet, White) Affect Plants' Growth?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> This project asked, #Does the color of light (red, yellow, green, blue, violet, and white) affect plants# growth?# The author hypothesized that her seedlings would grow best under white light and worst under green light. She thought this because white light contains a full spectrum (all seven colors) and plants do not absorb green light, they reflect it.</p> <p><b>Methods/Materials</b> Procedure: The experiment#s methodology was to first use four wooden sticks as support (stuck into the soil at the corner of each flower pot), then use six different colored (red, yellow, green, blue, violet, and white) garbage bags and make little tubes (like tents) over her six seedlings (hyacinth hybrids). Water (1/8 cup) and measure the height of the seedlings everyday for nine days. Experimental Design: Organization of this experiment was a primary goal: # Constants: Constants included the same amount of water for each seedling everyday, the same type of seedlings used, same flower pots used, same soil used, same spot the seedling are being placed, same temperature, same number of days for each trial, and the same starting point for each seedling when measuring. # Controlled Variable: The controlled variable was the amount of sunlight everyday. # Manipulated Variable: The manipulated variable included the different colors of garbage bags that caused light to change into the six colors (red, yellow, green, blue, violet, and white). # Responding Variable: The responding variable measure was how much each seedling grew everyday. # Trials: Tests were repeated five times in total and each trial included the sample size of six seedlings (testing still continues).</p> <p><b>Results</b> Results showed the growth process of the six seedlings, and that seedlings under white garbage bag grew most (average: 1.0 cm, 0.311 cm, 0.377 cm, 0.422 cm, and 0.422 cm) and seedlings under green grew least (average: 0.211, 0.077, 0.144 cm, 0.122 cm, and 0.077 cm). It also showed the order from the best color to the worst: white, violet, blue, red, yellow, and green.</p> <p><b>Conclusions/Discussion</b> The author concluded that plants (seedlings) grew best under white light and worst under green light. This experiment is still in progress.</p>	
<b>Summary Statement</b> This project focused on testing which color of plastic green house cover produced the best growth characteristics in hyacinth hybrids.	
<b>Help Received</b> Mother helped buy plastics and hyacinth hybrids for experiment.	