Colorado Science and Engineering Fair

2019 Individual Project Abstract Form

Please print 2 copies, sign both copies and include 1 copy with your paperwork given to the Regional Fair Director.

To return to the CSEF web site, close this window.

Project Title: Growing With Color

Finalist's Name: Julian Kramer

School & City: Good Shepherd Catholic School Denver

Sponsor's Name: Annette Humphrey

Category: Plant Sciences **Division:** Junior

Abstract: For my project, I attempted to discover which color temperature of light would promote the tallest plant growth. My hypothesis stated that if I tested light color temperatures of 2700K, 3500K, 4100K, 5000K, and 6500K on plants, then I hypothesized that the higher the color temperature was, the taller the plant would grow, and the plant would grow best at or above 5,778K because the color temperature of sunlight below the atmosphere is 5,778K. I set up this experiment by planting radish seeds and bean seeds in each of my five self-watering planters, which I grew under the light bulbs of the color temperatures stated above. I ran this experiment for eight days, leaving lights on for 13 hours each day. Radish plants averaged, in centimeters, 10.68 (2700K), 8.46 (3500K), 10.49 (4100K), 9.85 (5000K), and 8.65 (6500K). Bean plants averaged, in centimeters, 15.29 (2700K), 16.05 (3500K), 13.04 (4100K), 18 (5000K), and 14.05 (6500K). I observed that radish plants grew tallest under 2700K and 4100K lights. However, I observed that bean plants grew tallest under the 5000K light and bean leaves were largest under 5000K and 6500K light bulbs. My hypothesis was not supported because I stated that the higher the color temperature, the taller the plant growth. Based on the results I learned that I should not over-generalize my hypothesis.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature: Julian Kramer Date: 2/19/2019

In addition, all students must complete the Intel ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other Intel ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all these forms to your Regional Fair Director with your CSEF Registration Form. The ORIGINAL of this form MUST be the front page of your notebook.