



## Colorado Science and Engineering Fair

## 2025 Individual Project Abstract Form

**Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.**

Title of Project: Affects of Light Color and Intensity on Newly Hatched Brine Shrimp

Finalist's Name: Reyansh Varma

School and City: Summit Middle School, Boulder CO

Sponsor's Name: Valerie Keeney

Category: Animal Sciences

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

Light pollution affects many sea animals, specifically, the artemia salina (brine shrimp), which through previous research shows how these creatures are greatly affected by white light or daylight. Shining the primary colors red, green, and blue with different intensities can reveal how these colors affect the newly hatched artemia salina in their tub. The main goal of the experimentation was to see whether differences in light wavelength or color affect the brine shrimp differently. The sea shrimps show a behavior called positive phototaxis when any light, regardless of intensity, was shown on them, but as the intensities increased, the more brine shrimp expressed behavior of positive phototaxis. Additionally, more brine shrimp were attracted to blue light, then green light, then finally red light because of the differences in light wavelength size and energy. The movement of the shrimps revealed the idea of how artemia salina are attracted to all light colors and intensities because if artemia salina is attracted to the primary colors, they might be attracted to all colors (in the visible light spectrum). The shrimp also showed how light goes through water, as the experimenter was able to visibly see how the light went through the liquid. The experiment begs the question of how creatures like Artemia salina get affected by colors, not in the visible light spectrum, like ultraviolet. Finally, this project furthers environmentalists' points of light pollution and its effects on animals.

*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:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**