



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY**

Name(s) Suzanne M. Haycraft	Project Number J1311
Project Title Do You See What I See?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of the experiment was to use red and green filters to improve red and green shade distinction in red/green color deficient individuals. The hypothesis was that the filters would help color deficient individuals better match shades of red and green by filtering out other colors of light.</p> <p>Methods/Materials Color deficient individuals were presented with an array of red and green cards in various shades and asked to match identical shades. They did this 3 times each with no filter, red filter, and green filter. The number of correctly matched pairs was counted at the end of each trial and then averaged at the end of the experiment. The same test was given to 2 normal vision subjects for comparison.</p> <p>Results On average, all subjects were less able to correctly match shades of red and green when using the red and green filters.</p> <p>Conclusions/Discussion The hypothesis was incorrect; red and green filters do not improve shade distinction in color deficient individuals. Although color deficient individuals do have some cones allowing them to detect the colors red and green, those cones are not adequate in number to see red and green in a normal way, using filters.</p>	
Summary Statement I investigated the effect of colored filters on the ability of color deficient humans to distinguish among different shades of red and green.	
Help Received I designed and performed the experiments by myself, using volunteers.	