



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

|   |                                       |
|---|---------------------------------------|
| <b>Name(s)</b><br><b>Stephanie S. Manson-Hing</b>   | <b>Project Number</b><br><b>J1315</b> |
| <b>Project Title</b><br><b>Now You See It, Now You Don't!</b>   |                                       |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>The objective of my science project is to explore how the perception of objects, using peripheral vision, is affected by the objects' color.</p> <p><b>Methods/Materials</b><br/>I tested ten people from two different age groups: 30-60 year old adults and 13-15 year old adolescents. Using a vision protractor I designed and created myself for the project (made out of foam core), I tested which out of the colors blue, red, yellow, and green was perceived easiest and at the earliest degree on the protractor. Each person must focus on a pin in their direct line of central vision (90 degree mark on the vision protractor) thus forcing them to use their peripheral vision to detect the different, nickel sized, colored objects. I tested both eyes/sides of peripheral vision in my experiment.</p> <p><b>Results</b><br/>After gathering together my data, I concluded that the object colored yellow, for both age groups, was detected earliest and was easiest to see. For the 13-15 year old age group, the average perception was 9.5 degrees and the average for the 30-60 year olds was 11 degrees. I also figured out that green was the most difficult color of object to recognize. The younger age group recognized the objects earlier in general (with all four colors) by about 2-4 degrees on both sides.</p> <p><b>Conclusions/Discussion</b><br/>My hypothesis: If I test peripheral vision using the colors blue, red, yellow, and green, then the brightest color, yellow will be detected earliest and easiest out of the four colors, was proven correct by my experiment's data. Yellow is the closest out of the four colors I tested with to the color chartreuse, the easiest color for the human eye to see. I discussed these kinds of facts with my optometrist before forming a hypothesis and experimental procedures. Since peripheral vision is used a great deal when a person is driving, yellow street signs would be a good idea if something important should be displayed. In my city I have noticed most directions and signs on the highway bridges and overpasses are green, which might seem illogical because of my data, but there is no way to link the variables I tested with peripheral vision to that of central vision.</p> |                                       |
| <b>Summary Statement</b><br>My project is about how the perception of objects, using peripheral vision, is affected by the objects' color and which color is perceived easiest and earliest in a humans span of vision out of blue, red, yellow, and green.   |                                       |
| <b>Help Received</b><br>Father helped cut faom core; Optometrist Dr. Wendy Santizo answered a few basic questions in a short interview.   |                                       |