



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> Sarah Y. Root	<b>Project Number</b> <b>J2012</b>
<b>Project Title</b> <b>Can Desert Tortoises (<i>Gopherus agassizii</i>) See Color?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My goal was to see if desert tortoises ( <i>Gopherus agassizii</i> ) can see color. <b>Methods/Materials</b> A box was built and X#s marked for the placement of roses and the tortoise. Carnation pairs were randomly chosen and assigned to the left or right X position. A sunny day was chosen since it warmed up the desert tortoise#s metabolism. Also, I did not feed the tortoise for 48 hrs so she was motivated to go after the carnations. There were 10 conditions with 6 trials each. I recorded which carnation the tortoise went to and attempted to eat first. <b>Results</b> My hypothesis was not supported because maybe the desert tortoise can actually see color. Of the 10 conditions, in only 3 conditions was each of the pair chosen equally. Overall, the tortoise chose the white carnation 67% of the time versus any of the color carnations 33% of the time. There was no preference for the color red, either. However, there was a left versus right preference. The carnation on the left was chosen 62% of the time versus 38% for the carnation on the right. <b>Conclusions/Discussion</b> The most obvious reason my hypothesis was not supported may have been because the desert tortoise can actually see color. The small sample size (n=1) probably contributed to the findings. However, because the desert tortoise is endangered, it would have been difficult to use a larger number. Also, desert tortoises don#t eat carnations, but really like roses. Unfortunately, roses have a scent and I wasn#t testing to see if tortoises could smell. Finally, It#sa was not used to being in the box I built. She was very distracted and didn#t focus on the experiment as much as would have helped to really test the hypothesis. Knowing if a desert tortoise can see color can help when a tortoise is sick and needs to eat. If there really is a preference for the color red, or just color in general, then they can be given red roses or red apples or a colorful food, to get them to start eating and get healthier.	
<b>Summary Statement</b> My project tested to see if desert tortoises can see color.	
<b>Help Received</b> Dr. Dunn provided support & enthusiasm; Mr. Joseph helped proofread & offered suggestions; Dad & my friend Rico helped the build box; my mom typed most of the paper and this form.	