



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Diana T. Gateno</b>	<b>Project Number</b> <b>J2005</b>
<b>Project Title</b> <b>Embryonic Development Rates of Taricha torosa Subjected to Varying Light Levels</b>	
<b>Objectives/Goals</b> Question: Does the amount of full spectrum light in a newt egg's surroundings determine embryonic development and hatch rate?  Hypothesis: The newt eggs will develop and hatch quicker with the equivalent of some sunlight penetration	
<b>Abstract</b>	
<b>Methods/Materials</b> <ol style="list-style-type: none"><li>1. Identify a known newt pond location</li><li>2. Collect water from adjacent freshwater watershed</li><li>3. Hike up to newt pond and check for newt displaying mating behavior.</li><li>4. Collect two amplexing pairs of newts (male/female pair in courtship)</li><li>5. Measure equal amounts of water (2 cups) for the newt eggs# permanent containers</li><li>6. Make sure water samples are at desired temperatures for each tank prior to contact with the eggs.</li><li>7. Set up two identical tanks with aerator systems and egg attachment points</li><li>8. Allow newts to mate and lay eggs. Remove newts after eggs have been laid.</li><li>9. Cover one of the tanks completely so that no light penetrates into the tank, allow the second tank to remain clear for light penetration</li><li>10. Tank A will consist of exposure of eggs to full spectrum light</li><li>11. Tank B will consist of no light exposure</li><li>12. Record any initial differences</li><li>13. Check tanks daily and photograph embryos</li><li>14. Record time of first noticeable embryonic movement</li><li>15. Draw conclusions</li></ol>	
<b>Results</b> Eggs exposed to full spectrum light developed at a faster rate than those kept in a darkened environment. The embryos in Tank A (light tank) developed a comma shape several days ahead of their counterparts in Tank B (darkened tank). They also exhibited movement inside of their eggs at a much earlier	
<b>Conclusions/Discussion</b> Based upon the difference between the samples, I conclude that when female newts lay their eggs in nature, they want to ensure they lay them close enough to the surface of the water so that ultra-violet light penetrates to the eggs. However, if she lays the eggs too close to the water's surface, there is a danger that	
<b>Summary Statement</b> Does exposure of newt eggs to full spectrum light affect the rate of embryonic development?	
<b>Help Received</b> East Bay Regional Park District naturalist Cynthia Taylor oversaw collection and set up of this experiment.	