



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Ferryn A. Spence	Project Number J2217
Project Title How Slow Can You Go? Effects of Snail Size and Sun Exposure on Snail Speeds	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My experiment was designed to determine how differences in snail size and in sun exposure affect how fast snails travel. My hypothesis was that bigger snails would move faster than smaller snails because they have a larger muscular foot. I also thought that snails would travel faster when exposed to direct sun (as compared to shade) in order to avoid drying out.</p> <p>Methods/Materials I set-up the experimental surface by covering a wood board with plastic, and then drawing a small circle (3-inch diameter) surrounded by a larger circle (19-inch diameter). I recorded time, temperature, and whether the board was in sun or shade. I sprayed the board's surface with 5 squirts of water for moisture, and then placed a snail on the board inside the small circle. Using a stopwatch, I measured the travel time, starting when the snail exited the small circle and ending when it reached the larger circle. Next, I determined the actual distance traveled by covering the snail's slime path with a piece of string and measuring the string length. I measured the length of each snail shell by placing a ruler next to the snail and taking a photograph.</p> <p>Results Overall, I measured the speeds of 60 snails of various sizes, 30 snails in sun and 30 snails in shade. I found that small snails and large snails moved at similar absolute speeds (mm/minute). Although small and large snails moved at similar speeds, small snails did move faster when speed was expressed in body lengths traveled per minute. My other major finding was that snails exposed to direct sunlight moved faster than snails tested in shade, regardless of their size. Specifically the average speed of snails tested in sun was 125.3 mm/min, more than 1.5 times faster than the average speed of snails tested in shade, which was 76.1 mm/min.</p> <p>Conclusions/Discussion I think there are several explanations as to why larger snails did not move faster than smaller snails, as I hypothesized. Two possibilities are (1) that smaller snails have smaller and thinner shells and therefore carry less weight than the larger snails, which may allow them to move faster relative to their body size, and (2) that smaller snails may be more vulnerable to drying out or to predators because of their thin shells and thus may need to find shelter faster. In addition, my data support my hypothesis that snails travel faster in the sun, possibly because they are trying to avoid drying out.</p>	
Summary Statement My science fair project focuses on the common brown garden snail, <i>Helix aspersa</i> , and how snail speed is affected by snail size and by exposure to sun and shade.	
Help Received My dad helped gather snails while I collected data; Mr. Nestlerode offered advice and encouragement.	