



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Trang C. Phan	Project Number S1908
Project Title The Relationship between Movement and Sensory Mechanism in Strongylocentrotus purpuratus	
Abstract Objectives/Goals This experiment explored the possible ability of purple sea urchins, <i>Strongylocentrotus purpuratus</i> , to detect the location of a rock (one that they had previously crawled over/attached to) placed at a distance well beyond their tactile reach. The goal was to determine if <i>S. purpuratus</i> has another sensory mechanism beside its sense of touch. Methods/Materials The experimental aquarium was 20 cm long, 10 cm wide, and 12 cm deep with only seawater and a rock. In each trial three randomly selected <i>S. purpuratus</i> were placed at one end of the tank and the rock (one that they had previously crawled over/attached to) was placed at the other end. The distances traveled by urchins were recorded using a 2-cm ² grid system every fifteen minutes for a total of three hours. Results The distances remaining from the rock in the experimental trials were indeed shorter than the distances remaining (from where the rock was positioned in the experimental trials) in the controlled trials. The experimental group (with rock), on average, resulted in subjects being 4.89575 cm from the rock (after 3 hours), while the control group (without rock), on average, resulted in subjects being 10.34725 cm from the location where rock was placed in experimental trials (after 3 hours).	
Summary Statement To determine if <i>S. purpuratus</i> has another sensory mechanism besides its sense of touch, experiments were done in an aquarium with 3 urchins on one end and a rock at the other end; the data and an ANOVA test supported my hypothesis.	
Help Received Younger sister helped collect sea urchins and seawater.	