



CALIFORNIA STATE SCIENCE FAIR 2014 PROJECT SUMMARY

Name(s) Nshan Blikian	Project Number 34485
Project Title Survivor: Worm Edition	
Objectives/Goals This project will demonstrate earthworms' growth in three different habitats, dry, moist, and wet. The objective of this experiment is to know if earthworms would have a more successful life by measuring average growth and mortality rates in habitats of dry soil, wet soil, or moist soil, and in turn answer the question of why earthworms surface when it rains. Abstract This project will demonstrate earthworms' growth in three different habitats, dry, moist, and wet. The objective of this experiment is to know if earthworms would have a more successful life by measuring average growth and mortality rates in habitats of dry soil, wet soil, or moist soil, and in turn answer the question of why earthworms surface when it rains. Methods/Materials I determined the earthworms' success by measuring an increase or decrease in earthworms' mass and mortality rate over 5 weeks. The subjects were tested on average mass of a live earthworm and life expectancy. Each habitat contained 18 worms in a plastic container filled with 170 grams of soil. The earthworms were fed 3.4 grams of Ritz Crackers on a weekly basis. The live earthworms were counted and weighed with a gram scale, while the dead ones were discarded. Each live worm was cleaned with water before being weighed to prevent particles of soil or materials in the container contributing to an increment in weight. After the weighing process was completed, the worms were placed in a refrigerator until the following week to be counted and weighed again. Results The moist habitat's earthworms had a much more successful life compared to others with average growths of 1.91g to 2.28g per worm and all worms surviving from week 1 to 5 with a 0% (0/18) mortality rate. The dry habitat's earthworms had some growth with averages of 1.64g to 1.74g, at the end leaving only 14 alive with a mortality rate of 22.2% (4/18). The wet habitat's earthworms showed strong growth initially 1.78g to 2.33g in week 3, but took a drastic change by week 4 with a 100% (18/18) mortality rate. Conclusions/Discussion This supports the idea that earthworms surface during and after rain to avoid getting flooded and suffocate in the soil. Results proved that the earthworms living in the fully saturated soil had died by the end of the 3rd week disqualifying any idea that the worms surface because they like water. The earthworms in the dry soil had good success, but with a mortality rate of 22.2% that some water is needed. My hypothesis was proven correct because the earthworms in the moist habitat had the lowest mortality rate and the highest average mass by the end of the experiment. Worms surface during and after rain to avoid suffocation!	
Summary Statement This project will demonstrate earthworms' success in life by measuring average growth and mortality rates in dry, moist and wet habitats answering the question of why earthworms surface when it rains.	
Help Received Parents purchased worms and supplies from a store and borrowed a gram scale from their friend for weighing. My teacher provided feedback.	