Category: Microbiology

Student Name: Calee Gardner
Team Members (if any):

Project Title: Which type of Sediment is Most Toxic to Daphnia?

Abstract: Which Type of Sediment is Most Toxic to Daphnia? Abstract summary for: Calee Gardner March 2009 My Question: Which type of sediment is most toxic to daphnia? Hypothesis: If the health of daphnia depends on water quality then the gas station sediment will be the most toxic and the barnyard sediment the least toxic. Methods: First, I ordered the Daphnia kit which included about 80-95 visible daphnia. I collected, using a broom, about a tsp of different types of sediment at a gas station, front yard porch, and a barnyard. I put each type of sediment into nylon baggies. Then I filled the 100 ml jars full of 17 visible daphnia. I put a baggie into each jar and labeled the sides of the jars. One jar without a baggie was my control. I observed the number of living daphnia and their behavior in each jar daily for two weeks. The jars now contained different amounts of daphnia due to the effects of the sediment. Conclusion: I concluded that my hypothesis was incorrect in two areas. The barnyard sediment was most toxic to daphnia rather than the least toxic. The best sediment for daphnia health was actually the outside sediment because there was a lack of harmful toxins.

Category: Microbiology

Student Name: Kaydrie Molen
Team Members (if any):

Project Title: Magnets and decompostion

Abstract: My question was, do magnets reduce the forming of decompostion? My method included: 6 containers, 3 cup water, 3/4 of and avocado and 8 magnets. I divided the six containers so that they were in three groups. I placed the containers on top of eachother and placed a negative poll under one, a positive, and the other had no magnet. Then I placed one cup of water in each container, as I placed 1/4 of the avocado into the container. My hypothesis was, I believe that a positive poll will do better then the negative in reducing decompostion. I tested this for 4 days, observing each day. Day 1-3 the container without magnets did the worse, the positive was the second, and the negative was the best. On day 4 it switched. The one without magnets still did worse, but the positive did better then the negative. Resulitng that my hypothesis was correct.

Category: Microbiology

Student Name: Erica Hawvermale
Team Members (if any):

Project Title: Shining the Light on POLLUTION

Abstract: My question was How will nutrients effect how long and bright bioluminescent dinoflagellates will glow over long and short periods of time? My hypothesis was I think the more nutrients you introduce into a sample of dinoflagellates, the brighter and longer they will glow, up to a point. When too much nutrient is introduced it will kill the organisms. The variables were the brightness, duration of light, and temperature. The independent variable was the amount of nutrients. I mixed a nutrient solution of commercial fertilizer, then I added different amounts of the solution to the samples. I measured the brightness using subjective personal observation on a scale of 0-5, with 5 being very bright and 0 being no light. I timed the duration by first agitating each sample for 5 seconds, then continuing to time it until I could no longer see light. I found that nutrients do play a role in the length and brightness of the bioluminescence of the dinoflagellates. When you add too much, as I saw in long term sample 3, the dinoflagellates start to die, and they glow less brightly and stop glowing sooner.

Category: Microbiology

Student Name: Mandi Timothy
Team Members (if any): Alex Creasey

Project Title: Cell Sizes

Abstract: Question: Does the type of flower with a different stem circumference affect the size of the cells contained in the stem? Hypothesis: It is hypothesized that a flower with a larger stem circumference will contain larger cells and a flower with a smaller stem circumference will contain smaller cells. Methods: We cut thin layers of each flower stem using a scalpel and put the thin sample on a micrscope slide. Then focused the microscope to see the cells better and counted the cells in the field of view horizontally and vertically. Results: The answer to the question was wrong. The larger stem circumferences did not contain larger cells. It turned out that the flower with the smaller stem circumference had the largest area average of cells. Three different flowers were used for this experiment: Rose had an average area of 4.68, Snap Dragon had an average area of 7.08 um and Monte had an average area of 8.87 um.