



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Maxine E. Holland	Project Number S1910
Project Title Filter Feeders	
Objectives/Goals To see whether or not <i>Mytilus edulis</i> (mussels) can absorb particles within their systems other than ones used for food.	
Abstract	
Methods/Materials In my procedure, I put 250 mL of a carbon solution (30.16 g of black carbon pellets, and 250 mL of fresh water) in all 12 tanks, found how well my variables (mussels) absorbed the particles, and compared their results to the results of my control. <ol style="list-style-type: none">1. 12 ten gallon, glass tanks with plastic or wooden: 6 tanks will be used as variables and 6 as controls2. 50 mL beaker3. 16.3 kg of <i>Mytilus edulis</i> (mussels) 2.7 kg for 6 tanks4. 361.92 g of crushed black carbon pellets5. 3,000 mL of fresh water (250 per tank)6. 12 airstones of the same brand7. 12 airpumps of the same brand8. 6 large rocks (for the mussels)9. 120 gallons of seawater12. 12 undergravel filters of the same brand13. Gravel14. Photo spectrometer	
Results In the results, I found that the first day of the variable tanks had 36 cells per mL of water while the controls had 114 cells per mL of water. By the last day, the variable tanks ended up having 9 cells per mL of water while the controls had 83 cells per mL of water.	
Conclusions/Discussion In conclusion, I found that the mussels had absorbed the particles by 75% and that the controls had diminished their particles by 30%. Although the analysis shows that the controls were able to diminish their particles, the reason for this was the help of the air filters. The controls were able to absorb particles through their air filters (they were turned on in the tanks every two days in order to keep the mussels alive), which explained why it had absorbed anything at all. Even though its filters absorb the particles, the tanks with the variables absorbed 45% more, which proves that the filter feeders do absorb.	
Summary Statement Attempts to find whether or not sea mussels can absorb particles other than food as a form of natural filtration.	
Help Received Used photo spectrometer from Hueneme High School under the supervision of Mr. Callaway.	