



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Maxine E. Holland	Project Number S1905
Project Title Filter Feeders	
Objectives/Goals My problem question was Can Mytilus edulis (mussels) in the class bivalvia and the phylum mollusca, absorb the particles put in the water they live in?	
Abstract Methods/Materials 12 ten gallon, glass tanks with plastic or wooden: 6 tanks will be used as variables and 6 as controls; 50 mL beaker; 16.3 kg of Mytilus edulis (mussels) 2.7 kg for 6 tanks; 361.92 g of crushed black carbon pellets; 3,000 mL of fresh water (250 per tank); 12 airstones of the same brand; 12 airpumps of the same brand; 6 large rocks (for the mussels); 120 gallons of seawater; Latex gloves; Plastic sealant (prevents leaks in tanks); 12 undergravel filters of the same brand; Gravel; Photo spectrometer; 500 mL beaker; Food processor to crush up carbon pellets; 12 test tubes; Cento gram balance; Sift (to sift the crushed carbon). 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.I did this everyday for 21 days.	
Results In the results, I found that the first day the variable tanks had 36 cell per milliliter of water while the controls had 114 cells per milliliter of water. By the last day, the variable tanks ended up having 9 cells per milliliter of water while the controls had 83 cells per milliliter of water.	
Conclusions/Discussion In conclusion, I found that the mussels had absorbed the particles by 75% and that the controls 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 explains why it had absorbed anything at all. Even though its filters absorbed the particles, the tanks with the variables absorbed 45% more, which proved that filter feeders do absorb.	
Summary Statement My project was to find out if sea mussels absorbed particles in their water other than nutrients for food.	
Help Received borrowed equipment from my teacher Mr. Callaway	