



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Kristen A. Aguanno	Project Number J1002
Project Title A Study of Killer Whale Respiration Rate	
Abstract Objectives/Goals My objective was to find out if the age of Orcinus orca affects the respiration rate to weight ratio. Methods/Materials I did my experiment at Sea World, San Diego and watched ten killer whales breath for 3 minutes for a total of 20 trials for each whale (200 trials total). My materials included ten killer whales at Sea World, a stopwatch, and 20 Whale Observation Logs. I was able to identify and keep track of the whales by working closely with the Education Department members and the whale trainers. Results The results of my experiment was the three younger whales' respiration rate to weight ratio was approximately 5.0. The four middle aged whales' respiration rate to weight ratio was approximately 1.0. The three adult whales' respiration rate to weight ratio was approximately 0.5. I found out the age of Orcinus orca does affect the respiration rate to weight ratio. Conclusions/Discussion The results show that my hypothesis was correct. The age of Orcinus orca does affect the respiration rate to weight ratio. In the future, I would like to do another Science Fair project at Sea World. An idea I have is to compare the results I got in this project with the results of doing the same project with another member of the Delphinidae family, maybe dolphins or beluga whales. If I do this new project, I would try to eliminate my major limitation. This limitation was that the whales may have transition from one activity to another (playing to resting) which may have changed their respiration rate.	
Summary Statement After working with 10 killer whales at Sea World and a total of 200 trials, I found that the age Orcinus orca does affect the respiration rate to weight ratio.	
Help Received Sea World Education Department members and killer whale trainers who gave me all the information I needed to identify the 10 killer whales.	