



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Stephanie M. Bartel	Project Number J2202
Project Title The Ester Project	
Abstract Objectives/Goals If a young stingray with a birth defect is introduced to her own kind at a late age, will she accept the other Cownose rays? Methods/Materials We took a slightly deformed stingray and introduced her to four other cownoses. We did this staggered throughout a period of about 3 months for a total of 480 minutes per day. 4 cownose stingrays (2 male, 2 female), pH balancer, pH pool, Introduction pool, Ester (slightly deformed stingray), Ester' pool. Results Even though there wasn't a whole lot of schooling between December 11-19, Ester all of the sudden rapidly progressed on the 20th by schooling 150 minutes all together! Ester showed major improvement on December 20th but then seemed to drop the minutes schooling the next trial. This pattern didn't happen just once, though. Whenever she rapidly increased her total schooling minutes, she dropped minutes the next trial. If I could do anything differently I would do the experiment when Ester was older because she did not go through the growth spurt most young stingrays have at 6 months of age. Which ultimately means she can't be moved into the main exhibit with the other 15 Cownose rays, because she is too small compared to them. Conclusions/Discussion In conclusion, my hypothesis was supported. Although she was still not schooling with the other Cownose rays permanently at a week, there was a clear improvement; as shown in my graph. The deformity didn't affect her in any way when she was introduced. If a young stingray with a birth defect is introduced to the same species at a later age than most young Cownoses, her age will be a larger factor than the birth defect.	
Summary Statement This Project is about a young, deformed cownose stingray, who is being introduced to 4 other adult stingrays.	
Help Received Fresno chaffee zoo provided the equipment, mom helped organize the board.	