



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Robert J. Fernandez	Project Number J1007
Project Title What Makes the Best Artificial Reef?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Throughout my research on coral reefs, I discovered that there are many factors that are threatening their existence. Some examples are, over fishing, coral bleaching, human impact and climate shifts. I also learned how artificial reefs are one way we can help increase coral population in our oceans. My project compares three different materials; aluminum, concrete and rubber. The goal is to determine which one would make the best artificial reef. My hypothesis is that concrete will be best due to it's porous texture.</p> <p>Methods/Materials First I set up a 20 gallon salt water tank. I then placed in its center, a live rock containing 40 specimens of aptasia (related to coral in both phylum and species). I then placed beside it a base rock that does not contain any aptasia, for use as a control. I then placed four specimens of each material equally spaced throughout the tank. I recorded daily water conditions, aptasia growth on all materials, including control rock.</p> <p>Results My experiment proved that concrete is the best material for use in artificial reefs compared to rubber and aluminum. More aptasia grew on concrete than the others.</p> <p>Conclusions/Discussion I feel that my experiment is of great environmental importance, during my research, I contacted Dr.Milton Love, proffesor at UCSB and a leading authority on the "rigs to reefs" program in which oil companies turn old oil rigs into artificial reefs. I feel this is a great way to turn what would be waste material into a natural resource.</p>	
Summary Statement Comparing best materials for use in artificial reefs	
Help Received Mother helped with board. Milton Love research assistance, Angela Dang (engineer) research assistance	