



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Todd M. Schenk	Project Number J1816
Project Title Mystery of the Nicoleño Fishhooks	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this experiment was to answer an actual archaeological question that still remains unsolved: Did the Nicoleño Indians understand that abalone was the best possible shell to use for fishhooks, or did they use abalone simply because it was readily available?</p> <p>Methods/Materials Various types of shells were collected from the beaches of San Nicolas Island. After researching fishhook-carving techniques used by the Nicoleño Indians, several shells of each type were properly carved. Each shell was measured for weight, thickness, and eye-to-shank/eye-to-curve distances. A breaker device was constructed to measure the breaking strength of each shell. The resulting data was analyzed to determine which shell type makes a better fishhook. Materials included seashells, a breaker device (constructed,) Digital Scientific Calipers, a digital fish scale, and hardware to connect the shells to the breaker device.</p> <p>Results My results showed that abalone is the strongest shell for making fishhooks, among the most commonly available shells on San Nicolas Island. Clearly the strongest in strength-to-weight ratio, abalone is also the strongest shell when comparing hook shank strengths. Other data showed abalone to be the third strongest shell based on thickness ratios of the hook, and second strongest for hook-to-eye curve strength. While these secondary data comparisons do not place abalone in first place, when combined with the strength of shank and overall strength-to-weight comparisons, they show abalone as clearly the best possible choice for making a durable fishhook.</p> <p>Conclusions/Discussion This experiment has demonstrated that my hypothesis is correct, and supported by strong data. It is very likely that the Nicoleño Indians of San Nicolas Island knew that abalone was the best material from which to make their fishhooks. Now that we believe the Nicoleño understood the value of abalone, more research should be conducted to further investigate their abalone fishhooks, as well as all of the fishing technologies they developed on San Nicolas Island.</p>	
Summary Statement My project was to determine if the Nicoleño Indians knew that abalone was the best seashell for making fishhooks.	
Help Received I borrowed digital calipers from the curation facility of San Nicolas Island.	