

CALIFORNIA STATE SCIENCE FAIR 2002 PROJECT SUMMARY

Name(s)
Justin S. Endo

Project Number

Project Title

"Set-It-and-Forget-It" Automatic Fish Feeder

Objectives/Goals

The purpose of my project was to invent a fish feeder to automatically feed fish once day. I call it the #Set-it-and-forget-it# automatic fish feeder. I made it for people like me who have fish, yet who are either so forgetful or busy, they don#t feed their fish. After my market research. I realized that there wasn#t any fish feeder that was sold at the price range of \$15-\$25. A majority of the prices ranged from \$30 to \$200. My goal was to create a reasonably priced (\$15-\$30) fish feeder that would feed fish once a day for three weeks.

Abstract

Methods/Materials

I first brainstormed multiple designs for a fish feeder. Next I made a more detailed design of the three best but different concepts. I objectively selected the best of the three using a lesign review process and a trade-off analysis. I made a detailed the design and then made a prototype out of cardboard. I figured out what worked and didn#t work. I had to make four iterations of my design. Three of them were fixing the scooper. The last one was adjusting the funnel. The nuterials I chose to make my product were inexpensive and looked good. The materials were 1/4 inch foam by ard, 1/2 inch diameter polypropylene pipe, plastic funnel, and 2 inch PVC pipe. I did a market survey of potential customers.

Results

I tested the final product for three weeks. It dispensed 1/5 a caspoon per day (about a pinch of food). I surveyed 16 people, ages from 10 to 60, married, refried, of in a family, to see if there is a market for my product. I took the total number of families and the total number of single people in San Carlos to be potential customers. Then I used ratios and cross-multiplying to get my final answer. I calculated that I could sell 9,389 units in San Carlos. After researching other competitors, I concluded that there isn#t any other product like mine. All other products are a lo more expensive or don#t feed as long. I tested it for three weeks on my aquarium tank.

Conclusions/Discussion

My invention, the automatic file feeder, it a success. I got it to meet all my requirements. I was also able to complete a market analysis too. I learned that if I did sell my product, I would be able to make \$126,375.94. I learned how to use AutoCAD and Solid Works successfully and learned a little more about engineering and the process of making and selling an invention.

Summary Statement

My probect is about a mechanical automatic fish feeder.

Help Received

My dad helped me with the cutting of the PVC pipe and my mom helped the layout of my board.

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