



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

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| Name(s) Mackenzie L. Carter | Project Number J1905 |
| Project Title The Impact of Goldfish Food Brands on the Growth of Carassius auratus auratus | |
| Objectives/Goals The objective of this project was to determine which brand of goldfish food causes Carassius Auratus Auratus (goldfish) to gain the most weight. I believe that Tetra Fin Goldfish Flakes will cause the most growth because of the greater amount of necessary growth components. | |
| Abstract Methods/Materials Five ten gallon aquariums, each accommodating thirteen goldfish, were used for my project. A separate brand of goldfish food was used exclusively in each aquarium. The goldfish were fed twice daily. Each aquarium was provided an amount of food from its assigned brand that the fish could consume within three minutes per the instructions on the containers. The fish were weighed every four days using an electronic scale for a period of forty-four days. A measured amount of water was added to a beaker and weighed on the scale. After recording the weight all thirteen goldfish were removed from their aquarium using a net and added to the beaker. The weight from the water alone was then subtracted from the weight of the fish, to result in the net weight of all the goldfish from that aquarium. This amount was then divided by the number of goldfish to result in the average weight per goldfish. | |
| Results The goldfish that were fed Wardley Goldfish Crumbles had the highest average weight gain at 117%. The goldfish that were fed Wardley Essential Goldfish Premium Flakes had the lowest average weight gain at 80%. | |
| Conclusions/Discussion I came to the conclusion that Wardley Goldfish Crumbles made the fish grow the most. I learned from my research on this project that protein, lipids, vitamin A, and choline are the key ingredients to fish growth. This research, along with the analysis provided on each container of food, is how I derived my hypothesis. From the tests my hypothesis was proved incorrect. I believe that the elements in each goldfish food were key to the growth of the goldfish, but further research is necessary to determine why the unique combination of Wardley Goldfish Crumbles proved to cause the most growth. Additional studies of the individual components in fish food could help to pinpoint which specific elements cause the most growth. Another project using larger goldfish to begin with and/or a longer duration test might help determine if age and maturity have an impact on the growth differences also. | |
| Summary Statement I tested which goldfish food causes Carassius Auratus Auratus to gain the most weight. | |
| Help Received Father helped with setup and weighing of the goldfish. Mother helped set up the board. | |