



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

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**Project Title**  
**Acting Fishy: The Comparison of Growth between Frogs and Trout**

**Abstract**

**Objectives/Goals**  
The objective of this project is to find the internal and external similarities in growth between bullfrogs and freshwater trout. Then trace their ancestry to see which common ancestors they share and what traits they share with their common ancestors as well.

**Methods/Materials**  
**MATERIALS;** 1.Bag of compressed algae food pellets, Soft fish net, Tub of lettuce, Digital camera and memory card, Computer, Image analysis software called Morplus, table, aquatic plants and sand bags, Plastic aquarium totes with snap on lids, 10 gallons of rainwater, 5 tadpoles, Fish food container  
**METHODS;** 1. Order tadpoles from Bailey's pet store. 2 Set up tadpoles in their new living environment and see that they are happy and safe. 3. Feed the tadpoles small amounts of food multiple times a day and use turkey baster to clean tank feces daily. 4. Create a chart in which you can record the length, width, behavior, eating habits, and new body structures of the tadpoles daily. Print with lots of room for observations! 5. Take a picture every three days of each tadpole to see size changes. 6. Measure the tadpoles every three days 7. Continue to repeat steps 4, 6, and 7 as specified to keep tadpoles safe and well observed. 8. Order trout growth textbook. 9. Note and record trout growth and keep track of similarities. 10 Find pictures of young trout at the same age as the tadpoles in all the tadpole pictures. 11. Compare pictures of tadpoles and trout at same age using the morphology software. 12. Compare written notes on tadpoles from charts to the information on growth in the books on trout. 13. Compare growth of frogs to growth of trout to try to prove hypothesis.

**Results**  
Trout and tadpoles both have a notochord, paired appendages, and pass through a stage called the pharyngula, in which they look like finless legless creatures with large eyes, mouths, and tails. Their eating habits and intestinal changes are quite similar as well, they eat algae with long intestines and change to eating insects with short intestines. They both develop fins and feet in the same area, directly where the body meets the tail. Both bullfrog tadpoles and baby trout feed off of a yolk sack in their gut for the first five days after birth. Their growth was so similar due to their common ancestors.

**Conclusions/Discussion**  
Bullfrogs and Freshwater trout share many similarities and ancestors, proving my hypothesis correct.

**Summary Statement**  
I observed bullfrogs and trout and found similarities in their growth and then traced their ancestry to see where these traits derived from.

**Help Received**  
Ms. Shell (current physics teacher) served as my advisor. Mr. Snodgrass (seventh grade teacher) reminded me of the basics of cladogram making. Three of my friends helped in the visual design of the board.