



CALIFORNIA STATE SCIENCE FAIR 2002 PROJECT SUMMARY

Name(s) Ryan A. Lind	Project Number 22603
Project Title Color Perception in Frogs	
Objectives/Goals The goal was to see if frogs see colors and, if they do, which colors do they associate with safety.	Abstract The goal was to see if frogs see colors and, if they do, which colors do they associate with safety.
Methods/Materials A. Each frog is tested by putting it into the large chamber of the test box in a position where the frog has a view of both smaller chambers. B. Set up the test box with the first color combination (Blue and Black). C. If necessary, wiggle your finger behind the frog until he jumps into one of the smaller chambers, thereby indicating his color choice. D. Record ten trials for each frog, reversing the colors after 5 trials. This is done to differentiate between the frog's choice for color preference versus side preference. E. Repeat for each color combination: Blue and Black, Blue and Green, Blue and Red, Black and Green, Red and Black, and Red and Green. Materials: Cardboard box, Foam board, Colored paper, Black Spray Paint, Bucket, Net, Frogs	
Results When presented with two color choices, the test frogs went approximately 50 percent of the time to each color. Although the test frogs seem to not have a color preference, they did seem to display a strong preference for side.	
Conclusions/Discussion This apparent lack of color preference might be explained in a couple of different ways. First, frogs may simply not use color to determine a possible escape route. Second, although frogs are amphibians, they spend most of their time in the water and this could mean that their eyesight is not as adapted to land use. Maybe my frogs were having trouble seeing out of water. More testing would be needed to determine which of these possible reasons was the one responsible for my frog's apparent lack of color preference. Or, possibly an entirely different reason would be discovered. Although the test frogs seem to not have a color preference, they did seem to display a strong preference for side. At first, my test frogs would go into each of the smaller test chambers about half of the time. Later, when the frogs were tired, they began to only go into one chamber, either the left or right. It appears that frogs have a dominant leg, just as humans have a dominant hand. I think that the dominant leg of the frog pushes harder than the other leg when the frog is tired, which might turn them consistently in one direction over the other. A left-legged frog would turn to the right and visa versa.	
Summary Statement By running frogs through a box maze, I tried to determined what colors frogs associate with safety.	
Help Received My parents helped type the report. and they drove me to locations to find frogs.	