Name(s)	Project Number
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Project Title

Memory Duration of Natural Memetics for Tetras in Reintroduction

Abstract

Objectives/Goals
The goal and objective of the experiment is to figure out the duration of memory for natural memetics (e.g. learned information) in three species of captive Tetras, including the Flame, Neon, and Ember Tetras, and what factors affect it.
The hypothesis was that in the maze with no cues, the average time will be 1 minute and 40 seconds for each fish. At the last test period after two weeks, the average time will be 1 minute and 20 seconds for each fish. In the maze with cues, the average time will be 1 minute and 10 seconds for each fish. At the last test period after two weeks, the average time will be 50 seconds for each fish.

Methods/Materials
2 mazes need to be constructed out of two 16 (L) by 7.5 (W) by 1/2 (H) inch pieces of Styrofoam and a 280 (L) by 2 (W) by 1/2 (H) inch piece Styrofoam, one with color and one without with 20 of each type of fish, Ember, Neon, and Flame Tetras. 10 fish from each species are put into each maze on control day, 1 day after, 2 days after, 1 week, and 2 weeks after the previous tests. While they are in their designated maze, record time, amount of mistakes, and stops.

Results
The Neon Tetras went from a time of 91 seconds, down to 69 seconds in the visual cues maze, while they scored 93 seconds, and ended at 106 seconds in the no visual cues maze. The Flame Tetras went from 87 to 68 seconds in the visual cues maze, while they scored 156 down to 57 seconds in the no visual cues maze. The Ember Tetras went from 24 seconds in the beginning and went down to 20 seconds in the visual cues maze, while they scored 121 to 135 seconds in the no visual cues maze.

Conclusions/Discussion
The data showed very different results than the hypothesis. The duration of natural memetics in species of Tetras is around 3 weeks to 1 month. Around 2 days, each species started to increase in all three, time, amount of mistakes, and amount of stops. Color had an effect on the duration of how well the simulated migration route was memorized by stimulating the past experiences. Different species natural tendencies and lifespan also affected the memory. The tetras all had a wide variety of scores, ranging from 93 to 24 seconds in the visual cues maze, showing each tetra have very different memory ranges and skills.

Summary Statement
This project is about the period of time before a Tetra would forget something they have learned.

Help Received
Grandparents bought fish; Dad helped construct maze; Parents helped throughout testing.